Choosing An Orientation? -- Entrenched Learnings (Vol. 2)

(Orientation Acquisitions: Heterosexual, Homosexual, Smoking, Disordered Eating, Etc.)

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Preface

"On this my brother and I agree: that independence of mind is immensely precious, and that we should try to tell the truth in clear English even if we are disliked for doing so." –Peter Hitchens (2010, p. 218)

Disagreement is agreeable. The particular disagreement in this text is likely on the place of choice in the formation of an orientation whether it be heterosexuality, pedophilia, bisexuality, gender identity, transgendering, homosexuality, eating disorders, suicidality, smoker, alcoholic, gambler, and so on. A title linking sexuality and choice says something provocative, but it doesn't say it all! Yet, a few words can say a great deal. The title does raise the question about the relationship between choice and a variety of behaviours. That is one major point of this essay.

Given the logical subtext relating choice to an orientation like heterosexuality, and then by extrapolation to other sexual orientations like pedophilia, homosexuality, necrophilia, sexual addiction, pornography, nymphomania, transsexuality, would arouse emotion-loaded reaction in some, simple shelving of the text for others, *ad hominems* from the frontlines, and perhaps *heteronyms* from the back row. It can be a bland academic question of interest, a banal topic dismissed with a wave of the backhand, or a blunt topic with a propensity to generate a broad range of volatile reactions. As applied to politically incorrect topics, one stands in wonder. As an academic exploration (neither a polemic nor an apologetic), one simply wonders.

When applied to heterosexuality, one can anticipate an immediate dismissal by many, if not most. After all, people do not remember choosing an orientation, and particularly a sexual orientation. But then again, most people do not remember their choice-history in reading

acquisition, or language acquisition, or learning to walk; but choices, and intentionality, were operative nevertheless. So, at this point, the reader is invited to consider the broad scope of arguments for choice in heterosexuality. Considering choice in orientation formation, all orientation formations, will inform the acquisition of the heterosexual orientation.

When applied to homosexuality, I am sensitive to the personal implications of the topic. I have a niece who is a practicing homosexual, I have homosexual colleagues at my place of employment, I have friends who have friends who are homosexual. They think I am too far "out there," just because I venture "out there" to even consider another side to the orientation topic. I have family members who imply with their eyes the message: "Let it go!" I have had concerns about my children's biological, biochemical, and environmental background. I have had several literature-based precursors to homosexuality myself: the "absent-father," I didn't meet my father until I was about four years-old. It was the war years, and he was fighting in Africa and Europe. My mother subjected me to pre-natal stressors, again the war years, a war-wounded partner, and living with parents. And on top of it all, I see Kinsey's logic of outlets being just outlets.

I see merit in logical, historical, laissez faire, and naturalist precedents for various sexual orientations, including necrophilia, zoosexuality, and both the homosexual and the heterosexual orientation. By choice, I have both sensitivity and empathy for those with a homosexual orientation, as I do for those with a smoking orientation, or alcoholism, or a gambling problem, or obesity. By choice, I have compassion for those pursuing a curiosity, even the dark side of curiosities (Ariely, 2009) oriented to zoosexuality, pedophilia, necrophilia, hebephilia, ephebophilia, pornography, incest, violence, religion, poverty, injustice, silliness, stupidity, drug abuse, eating disorders, and self-deception. By choice, I do not have a negative animus, or ill-will, towards those who claim, for example, that zoosexuality is a normal orientation, or that

alcoholism is simply anomalous. Rather, I, by intention, willingly consider arguments and counter-arguments, in the context of worldviews, as that is what I would hope to offer.

My motivation in writing this text exists on two levels—academic and Christian. At an academic level my motivation is primarily a research philosophy that values breadth of perspective, multiple-perspective-taking and a correspondence view of truth—a view where the fair question is: "what's the reality?" I hold as a basic assumption that we can get to reality, or very close to reality, and that we are not limited to mere constructivism. Academic curiosity pushes me to wonder if a heterosexual orientation is learned—influenced by choices one makes. Academic curiosity pushes me to wonder if a case can be made (as model, or theory, or hypothesis) that a heterosexual orientation is contingent upon choices one makes. I argue there is such a case to be made, and that the same holds for the homosexual orientation.

Beyond the academic, my motivation, I admit, is contextualized by a particular Christian worldview, which I do embrace, and which reaches out proactively in defense of the truth—the real, and those reeling. Thus, I have no difficulty determining what the primary source of this essay is for me—it is firstly the empirical research seed out of which this entire text grew[1]. It is research itself, the research philosophy, and the nature of argument, that are important drivers at a key level. My academic research interests, and writing opportunities, have been in the broader academic domain (i.e., education, psychology, science), and none have fallen to the more religious domain, or a social-ethical domain. In this text, however, the creedal worldview (or religious worldview) is at times paralleling the naturalist worldview, both theoretically and practically. I have come to see it is a natural symbiosis, and a necessary symbiosis. My hope is

[1] One of the criticisms expressed to me by a colleague was that this endeavour was not based on empirical research data that I was "writing up." Actually, however, this research began from empirical data collected which showed a particular interesting profile for adolescent females concerned with questions of sexual orientation. I deal with the research, and my colleague's objection, by presenting such data, and analyses, when addressing a series of objections in a subsequent text.

that readers will not see this text as a polemical religious product targeting all sexual orientations, or behavioural orientations, or addictions, or appetites, which are outside of the traditional Judeo-Christian view; it isn't a polemic.

Yet there is the second level of motivation, the Christian, which is rooted solely in the two love commands: love God, and love neighbor. These anchor a religious motivation. Overall, then, it is curiosity and creativity, as well as love or faithfulness, that motivates; and it is the pedagogical, the psychological, the epistemological, the logical, the philosophical, and the theological, that frames the motivation. The secular and the religious both factor in. Neither one is considered out!

I acknowledge up front that under a naturalist's worldview-hat, the gray-matter sees sexual orientations as neutral, amoral, and interesting—interesting as biological phenomena and as a descriptive research field. At times I wear that naturalist hat. For those readers with a self-selected, identifiable sexual orientation (heterosexual, homosexual, pedophiliac, zoosexual, transsexual, etc.), consider my arguments from both a naturalist worldview and a religious worldview in three formats: (1) distinctively and separately, (2) simultaneously, and (3) conflated or synergistically.

Under the more creedal worldview-hat, the mind sees the matter as gray; sexual orientations emerge as questions—moral, interesting, biologically tinged and environmentally tainted. Under the Christian creedalist hat there is love. Love is to intend no harm; but arguably, if there is harm the notion of "harm" is not a defeater for a creedal position on sexual orientation. Intentions are principled. Much of my argumentation can be judged purely from, and within, a naturalist's worldview. I suspect, though, most naturalists will merge their own non-naturalist creedalisms into the naturalist claims.

From the perspective of my creedal position—my religious worldview—an orientation like heterosexuality is neutral and arguably chosen in some fashion, whereas, homosexuality is not neutral. But neither is smoking, nor obesity, nor gambling, nor pornography, nor gossip, neutral. Regardless of the worldview (Christian or naturalist) the arguments presented here have merit in constructing judgments, or exploring judgments, on behalf of one's belief formation—judgments that align with evidence, logic, argument, reason, and change, particularly the changed mind (i.e., metanoia).

Yes, there might be judgments made, or claims made, that do not align with evidence, logic, argument, reason, and change. In fact, numerous challenges have been expressed to me already. Some of the objections raised were considered initially in a separate chapter here. But, in conversations and classes, the objections grew in number (from three to about twenty) and type (from empirical research challenges, to logical challenges, to religious and ethical worldview constraints). The original chapter dealing with objections mushroomed, and has been allocated to an alternate volume as a consequence. Now, to deal with many particular objections to the analogy of a smoking orientation and a sexual orientation an alternate text has emerged with a focus on love and a framework of love.

Although I have analogized sexual orientations (firstly the homosexual orientation as the proxy for the heterosexual orientation) and smoking here, I see the analogy with smoking as applicable to a broad range of topics, some light and some dark. Topics such as suicidal ideation, eating problems, compulsive shopping, pedophilia, zoosexuality, gambling, video game addictions, athletic prowess, musical proficiency, creative writing, and so on, are somewhat analogous to smoking. Moreover, a central theme of the essay—that the heterosexual orientation is choice-based and learned—is at the forefront; it is just that the analogical approach to smoking and homosexuality is less opaque than an analogical approach to heterosexuality. As

explained later: exploring peripheral orientations, or minority orientations, situates an understanding of all orientations.

In essence, the logical formulations developed from the analogical reasoning serve to bring learning back to the front, to bring education back to the front, to bring choices back to the front, to bring responsibility back to the front, and to bring arguments back to the front. I propose, then, a call for consideration, not the pull of propaganda, nor the pall of certainty.

I write first for myself, as this is a formative learning experience. I am interested in the topic and in learning from the explorations. I write secondly, to one particular person, though I am not sure who it is. It might be a relative. I write for the academic community, Popper's "third world." This is a field that needs to be tamed. It is shameful the way many positions "on the right," and people "on the right" are marginalized, silenced, labeled, and tarred with hate (see Brown, 2011, particularly chapter 2). As a Christian I write for God and neighbor—the two great love targets. I write for students, for those who enjoy a challenge, and an opportunity to challenge claims, including my claims. I write for ….

Summary

"In one sense choice is possible, but what is not possible is not to choose. I can always choose, but I must know that if I do not choose, that is still a choice." -- Sartre (Existentialism and Humanism, 1948, p. 48)

Where do I end up? I end up with an integrative view, and a functional view, of "addiction" that is: addiction is normal and natural learning, it is rational behaviour, it can be preceded by problematic constraints, it sees benefits exceeding costs as functions of time, it is chosen, and then it reaches a state of entrenchment via learning theory.

Human beings, it seems, have appetites for everything. Appetites are rooted in each psyche! Appetites and libertarian agency lead to trouble distinguishing between addictions, identities, orientations, and self. Who you are has roots. How did I end up here, or there?

People choose. People learn. People learn to choose and choose to learn. In part, choosing emerges from learning; in part, learning emerges from choosing. This reciprocal relationship is commonplace knowledge in education, and common sense knowledge in the commons—the playing field. With minimal reflection the interaction of choosing and learning points to the deep-seated importance of choice as a fundamental attribute of human nature and human identity. Now, there are some interesting questions associated with the notion of choice. Why do people choose what they choose? Does the nature of choice, or the caliber of choice, change over time? If so, are the changes a function of knowledge, a function of differentiated developmental levels, a function of biological influences, a function of social fluctuations, a function of chance, and so on? Is it so that the full panoply of potential causes and constraints of a choice is a necessary consideration when situating a place for choice? Does choice atrophy? Does it move through a series of stages like Piaget's stages of cognitive development, or

Kohlberg's stages of moral reasoning? Answers such as "yes" to such questions have implications. There are implications for cognitive beliefs and practices, religious beliefs and practices, sexual beliefs and practices, eating beliefs and practices, suicidal beliefs and practices, and on and on. There are processes, concepts, constructs, histories, and elementary aspects of one's nature—hardware and software—which are instrumental in choosing; and, the examination (both cross-sectional and longitudinal) of this infrastructure likely, and logically, will be informative. Indeed, critical!

The method of examination used here begins formally with analogical thinking. The base analogy adopted for thinking about choice is smoking. People choose to smoke; yet it is not quite that simple. People learn to smoke. But it is not that simple either. There are biological determinants to smoke. Yet it is not simply biological. There are environmental determinants driving one to smoke. Yet it is not simply the environment. The choice to smoke shows different qualities (calibers) at different choice-points in the development of a "smoker orientation"—the incipient smoking thoughts and behaviours, the habit, the identity, the orientation, and then, perhaps, quitting, unlearning, and relearning. Change is the constant! We learn something about choosing, indeed, about learning itself, from reflecting on the process of smoking as an orientation formation—from its point of exposure, to inception, to acquisition, to addiction, to identity, to orientation, and then further on to cessation, or reformation.

The smoking orientation provides a model for learning that serves thinking in related areas. Somewhat ironically, therefore, one of the veiled benefits of smoking is the development of knowledge. There is development of knowledge at a personal level, at a systems level, and at an analogical level.

Based on logic, pragmatism, philosophy, ethics, and current scholarship, a rationale is developed supporting the analogous comparison of various behavioural issues—like smoking—

to targets like: eating problems, sexual orientation, suicidality, ethnicity, athletic proficiency, academic success or failure, musicianship, and so on. The key analogical base, however, is smoking—the initiation, the determinants, the process, the addiction, the orientation, and change. Although various targets are considered analogous to the smoking base it is sexual orientation that receives the main reflective weight here. In part, this focus is due to the fact that the seminal idea began with thinking about some existing empirical data on adolescent concerns about sexual orientation. Then, the similarities between sexual orientation and possible comparators like smoking were considered. At that point, smoking emerged as one of the strongest comparators, if not the strongest comparator.

In the examination of this learning process, that is, *learning to smoke*, the developmental nature and philosophical importance of choice emerges. Choice should be a key factor in the theoretical understanding of a learning/de-learning/re-learning model. Choice transcends the more traditional causal-constellation—that is, environmental correlates, biological influences, time, and luck, or chance (Kagan, 2010). Accordingly, on a range of behaviours, or orientations (e.g., behaviours related to sexual orientation, eating problems, drug dependencies, suicidality, as well as more conventional self-identities, or orientations, like academic success, athletic proficiency, musical brilliance, creative writing, and …thinking) the traditional causal-constellation requires a place, a more prominent place, for choice. In each situation the caliber of knowledge underpinning choices, the caliber of belief underpinning choices, and the caliber of choice underpinning actions are key factors in the person constructed—their self, their image, their identity, their orientation. The caliber of choice is highlighted in terms of an on-going discussion of the determinative status of choice. Thus, the focus on choice is moved to the place of prominence.

When asked now what the cause might be of a sexual orientation, or a smoking orientation, or disordered eating, or drug abuse, or compulsive shopping, my response is "simply" to say:

> *"...excessive appetites, simple and complex reward-systems (operant learning theory, opponent-process-theory), curiosity, bad thinking (via action-identification theory, dissonant thinking theory, self deception, addictive thinking, illusory thinking), self-corrective backfires (ironic effects theory), bad beliefs, developmental lags in resources (cognitive immaturity, and self-regulation weaknesses), bad constraint systems (parents, politics, media, culture, laws), cost/benefit analyses where benefits outweigh costs, bad choices, chance, and time, all in the context of a smattering of biological influences. The cause is a complex constellation of variables, all of them centered on thinking, learning, and choosing."*

How I get to such a claim is the substance of this essay.

The essay is organized such that Chapter 1 addresses analogical thinking specifically. The theoretical underpinnings for analogical thinking are presented. Then the case for the "smoking" analogy, that is, smoking as the analogical base, is advanced considering both biological and environmental determinants of smoking. The chapter ends with extended considerations for applying analogical thinking. Chapter 2 addresses a broader constellation of analogies that have been offered for one particular orientation, a homosexual orientation (e.g., left-handedness, ethnicity, eating disorders, zoosexuality, and so on). The chapter concludes that the best analogy is smoking, and smoking can be seen to be a good analogy for a range of learned behaviours, whether negative or positive. Chapter 3 addresses the issue of choice philosophically, and developmentally. Chapter 4 continues the focus on choice contextualized

by the issue of change, and shifts to the case for all orientations being rational—appetites at varying degrees of success or excess. In effect, we face learning of all orientations, including a heterosexual orientation. Chapter 5 addresses belief-based self-regulation given various philosophical, psychological, and theoretical framings. Chapter 6 addresses the issue of education. Here various models that are consistent with the importance of choice, and change, are advanced. Chapter 7 revisits the importance of beliefs, choice, thinking and education in orientation formation.

Introduction

"A picture is worth a thousand words;" an analogy ten thousand!

Getting to a position of formulating a good communication, a better communication, or even an acceptable communication, is not an easy task. Much can hinge on a single word, whether the choice of a word, or the word *choice*. Consider the now infamous statement: "It depends on what the meaning of is, is." There is, in this statement, both truth and deception. Supporting equivocation, for example, there is the "*is of identity*" captured in the statement, "The Queen is Elizabeth II," which is identical to "Elizabeth II is the Queen." This is different from the "*is of subject completion*" captured in the statement, "A queen is a playing card," which is different from the statement "a playing card is a queen." Then there is the "*is as being*," as captured in the statement, "The Queen is." Or there is the "*is as tense*" captured in the statement, "The Queen is visiting Woodbine for the running of the Queen's Plate." Here one signals it is happening now, at this time.

Somewhat analogously, inviting analysis, consider the statement: "It depends on what the meaning of choice is," as a response one might give to the claim that one chooses a sexual orientation whether heterosexuality, homosexuality, zoosexuality, and so on. Similar to the "…is, is" issue, if one asks what the meaning of "choice" is, there is potential for both truth and deception, in the question, and the answer. The vicissitudes of choice, the developmental trajectory of choice, the free-will and agency issue in choice, the determinants of choice, and the situational influences impacting choice, indeed, the fundamental psychological and philosophical nature of choice, all serve to cast choice as a complex construct, psychologically, semantically, and philosophically. Thus, a simple statement like "I didn't choose this" is in need

of thoughtful unpacking.[1] One of the necessary objectives of this essay, in light of the argument that heterosexuality is a chosen orientation, is to advance a discerning unpacking of the construct of choice.

This manuscript began with a concern that young adolescent females were facing a choice regarding their sexual orientation. It was set up as a draft for a short empirical journal article profiling adolescent females who were concerned about sexual orientation as opposed to those who had expressed no such concern. In this particular circumstance an examination of 124 female students' attitudes, beliefs, and practices, generated two categories regarding sexual orientation ("concerned" and "not concerned"). About 10.5% of the group indicated "concern," paralleling the 10.7% reported by Remafedi, Resnick, Blum, and Harris (1992) (N=34,706). Discriminant function analysis revealed that specific group characteristics (i.e., related to Extracurricular Activity, Physical Characteristics, and Personal, Peer and Support Issues) were associated with sexual-orientation-concerns. In effect, those females indicating a concern about their sexual orientation were showing: higher "activity in sports," more peer pressure concerns, more reports of sexual harassment, less sexual activity, and a younger age, with 84.5% of the sample correctly classified when applying this model. The findings suggested, not unreasonably, the potential relevance of environmental variables as influential in, or illustrative of, sexual orientation concerns. On a positive note, variables not discriminating were: depression and suicide-concerns, worry about relationships or appearance, and problems with paternal or maternal support[2]. Where environmental variables were relevant, possibly as determinants, or merely as descriptive correlates, it would seem that choice and learning would be relevant considerations along with biological and socio-cultural influences.

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[1] While sexual orientation is the focus here, the issue of the "meaning of choice," and the morphing of choice over time and learning experience, would apply equally well to smoking, eating problems, bridge-playing, and so on.

[2] For more details on these empirical data and analyses see the objections addressed in Volume 3 of this series on entrenched learnings.

It is fair to say all human identities, orientations and behaviours have an array of determinants, a range of variables influencing formation. This range would encompass the general categories such as: (1) broad biological basics like genetics, prenatal hormones, and developmental hormonal influences, (2) broad environmental basics like family, peers, culture, media, laws, and educational institutions, (3) broad psychological basics like personality factors, cognitive processes, knowledge, beliefs, history, and experiences, and (4) exotic factors like curiosity, chance, and choice. Moreover, these determinants would occur in varying proportions, weights, and interactions. In effect, the determination of a behaviour, or belief or orientation, is complex. Even Kagan's (2010) effort to situate biology, culture, time, and luck, as the appropriate, interactive mix falls short. It falls short because these variables still focus on the person as an object. Kagan seems to miss a key component.

What is missing is what could be called "mind" as a placeholder, for lack of a better term, to capture the subjective side: the subject, the person, the "Thou," the agent, the spirit, the soul, or the psyche. A term like mind (with the person as subject) signals the importance of the person in the unfolding and direction of personhood. Things that come into play at this level would be personal agency, willpower, choices, free will, beliefs, knowledge, curiosity, conscience, ethics, and more. These mind-factors are missing when researchers look at the external influences and determinants of a human being—external factors like genes, hormones, parents, peers, abuse, school quality, health, time, and luck. When mind, or the self, is factored into the interactive mix, people are viewed as subjects and objects, not just objects. It is genes, culture, time, luck and *mindful, self-determination* that makes human being who they are.

If we were assured we were wrong about the subjective side, we really wouldn't hold people accountable, even partially, for their knowledge, their beliefs, their opinions, their behaviours, or their orientations. But we do hold people accountable. This reveals that we do

hold, at a fundamental cognitive and philosophical level, what can be called a basic "non-reflective belief" (Barrett, 2004).

Likely, the impulsive view, or the simplistic view, of *what-caused-what* emerges from the limitation which arises when one falls into the bifurcation fallacy, or what Gould (2003) calls the dichotomization fallacy. One claims the cause is biology or not, or the cause is choice or not, or the cause is the mother or not, and so on. This dichotomous viewing precludes consideration of the more complex nature of causal influences—objective and subjective—impacting human development. When there is an impulsive response with respect to any behavior that is ascribed the label "problem behaviour," the level of thinking is often quite narrow, indeed, too narrow (for elaboration of this narrowing phenomenon see the later discussion of the action-identification theory of Vallacher and Wegner, 1985, 1987).

Reflective responses are more nuanced. Causes are complex with a constellation of variables contributing to the product. True, some variables may be far more important than others. If the causation of all identities, orientations and behaviours is complex with respect to determination, then thoughtful, thorough, diverse approaches should be enlightening. Some approaches are more conducive to reflective depth and breadth than others. One such approach is analogical thinking.

Analogical thinking offers a method of investigation with promise to elaborate on the nature, causation, and course of development of various identities, orientations and behaviours. The formation of the identity, "I'm a reader," would be somewhat analogous to the formation of the identity, "I'm a criminal," or, "I'm a mother." While readers and criminals are different, they both can be viewed as having an acquired identity; it is the parallels in the acquirement process that give value to analogical considerations. Similarly, criminals and mothers are different; but they both possess an identity that is constructed, albeit the biological determinant

for mother would be stronger than for the criminal most likely. Is there anything informative in that analogy?

While some analogies might be better than others in terms of parallels and similarities, still, it is arguable that even diverging analogies can be informative. Morally, the identity "I'm a reader" would be more analogous to the formation of the identity "I'm a musician," than the identity "I'm a thief." The similarity is greater at one level between reader and musician. However, if the process of acquisition in the reader/criminal analogy is both similar, and primary, in the analogical reasoning, it is possible that the reader/criminal analogy can actually be more informative.

Also, analogical thinking can be reciprocal in potentially informing both the understanding of the target analogy, and conversely, the base analogy. Understanding the formation of the identity, "I'm a reader," can help with understanding the mechanics, dynamics, and trajectory of the formation of the identity, "I'm a criminal." And vice versa, understanding the identity formation of the criminal may facilitate a more comprehensive understanding of the formation of identities like "reader," "scholar," "musician," or "athlete." Furthermore, analogies can be plotted along a hierarchical continuum with some analogies being better than others. There are nuances in dealing with analogies and analogical thinking that inform knowledge-building.

The question of analogous thinking in comparing, for example, sexual orientation to other "orientations" is not unusual even if problematic. Sexual orientation, that is, the homosexual orientation, has been compared analogically, on the value-neutral end of the continuum, to such bases as race and left handedness (Burr, n.d.), and, on a value-loaded end of the continuum, to coprophilia and necrophilia (Goldberg, 1991) and pedophilia (Brown, 2011). Eating disorders have been compared to simple diversity on the value-neutral end of the

continuum, to mental disorders at a mid-point of the continuum, and to vices or sin (e.g., sloth and gluttony) on the value-loaded end of the continuum. Reader/reading has been compared to "scholar" on the value-neutral end of the continuum and to "nerd" on a more value-loaded end of the continuum.

Can one compare eating problems with sexual orientation, or smoking for that matter? Well, some eating disorders do seem to have an addictive quality. Similarly, homosexuality, or homosexual behaviour, has been compared to addictive-type behaviours by others contemporaneously (e.g., Satinover, 1996), and as far back as Imperial Rome (see Brooten, 1996). Moreover, addiction is arguably based in rational decision making processes. There are cases to be made for theories of rational addiction (Becker & Murphy, 1988; West, 2006).

Becker and Murphy (1988), for example, note addiction to beneficial goods (e.g., jogging and religion) and harmful goods (e.g., alcohol and drugs), and developed a model rooted in economics that explains the behaviours, both harmful and beneficial behaviours, as rational. Likewise, while "addiction" to a homosexual orientation is congruent with a similar attachment to a heterosexual orientation, both can be conceived of as rational. Using the less pejorative term, "learned," makes the case easier to fathom.

In the Becker and Murphy (1988) model, time (past, present-oriented, and future-oriented) and perspective (attending to time-based payoffs) are important factors. They write: "Our analysis implies the common view that present-oriented individuals are potentially more addicted to harmful goods than future-oriented individuals (Becker & Murphy, 1988, p. 682)." Further: "Therefore an increase in rate of preference for the present and in the depreciation rate on consumption capital raises the demand for harmful goods but lowers the demand for beneficial goods. As a result, drug addicts and alcoholics tend to be present-oriented, while religious individuals and joggers tend to be future-oriented (p. 684-685)."

Becker and Murphy also note a place for myopia—a type of blindness that ranges from partial myopia to fully myopic. But the myopia does not preclude rationality. As they see it: "The consumers in our model become more and more myopic as time preference for the present gets larger." Given their model, and the formulae they use, they infer: "It is then rational to ignore the future effects of a change in current consumption (1988, p. 683)."

Whether the addicted person is subject to full myopia, partial myopia, or insight, the notion of rational attachment holds. Rational addicts appear to be more sensitive to time factors (future payoffs and costs) than myopic addicts, but the addiction is rational.

Smoking has an addictive component so the possibility of using a smoking model analogously (to sexual orientation and/or eating problems) does not seem unreasonable, at least initially. Moreover, such addictions, given the time factor, the cost-benefit analyses, the hooks to get one started, and the model proposed by Becker and Murphy (1988), may be quite rational in spite of the myopia that creeps in.

Analogous examination of research data (which is discussed more fully in a subsequent essay, Entrenched Learnings, Volume III) for environmental correlates of habitual smoking (using the same predictor set as with sexual orientation concerns) revealed habitual smokers were: sexually active, less cognizant of community adult monitors, older, less concerned about peer pressures, and spent less time involved in sports. While not the same profile as the "sexual orientation concerns" group, there was clearly a link to environmental correlates which supported a consideration of either: (1) the possible environmental influences on smoking or (2) correlates of smoking which contribute to an environmental profile of smokers. A more environmentally relevant set of predictors for a smoking orientation likewise showed successful discriminating potential.

Using the same two sets of variables to test for environmentally-driven discrimination using a dieting analogy (Yes, No) was likewise successful. This too suggested analogous comparison with eating behaviours could be warranted in consideration of either environmental determinants, or environmental profiles, related to smoking, eating-behaviours, and sexual orientation.

Furthermore, using the same two sets of variables to test for environmentally-driven discrimination using an ethnicity analogy (white, non-white) was not successful. This was somewhat surprising as it would be logical to suspect differential environmental correlates of ethnicity.

Finally, using the same two sets of variables to test for environmentally-driven discrimination using a suicidality analogy, for Ideation (Yes, No), Plans (Yes, No), and Attempts (Yes, No), was likewise successful. This too suggested analogous comparison with suicidality (for smoking, for sexual orientation, and for eating problems) could be worth consideration. The above data are presented more fully in the subsequent essay, Volume III.

The difficulty which emerged in the initial thinking about the environmental correlates serving to discriminate those concerned about sexual orientation and those not concerned was space. There was too much to say, or too much that needed to be said, or too many objections to address, or too many additional questions to try to answer in considering the emerging case. There were questions raised regularly from a variety of sources, questions that warranted attention, consideration and comment. To facilitate the thinking process, and to ameliorate potential animus, the focus shifted from empirical-based thinking (i.e., the research data and the conventional reporting of such data) to analogical thinking. This served to expand the conceptual focus as well as broaden the attention to existing published empirical evidence.

The principal analogy to facilitate thinking which is being advanced in the text is smoking and that primarily as an analogy for homosexuality. However, there is a broader general focus, in that, the smoking analogy base is presented as a possible organizing focus for such constructs as various sexual orientations, relationship addiction, eating problems, suicidality, and, in fact, learning generally—musicianship, athletic skill, creative writing, reading and so on. Each time this basic smoking analogy was considered in this text, it seemed to hold value in addressing multiple tangential issues.

Of course, criticism is invited of any arguments made, or analogies considered, as well as new arguments that might warrant consideration. In fact, many criticisms that have been directed my way from friends, colleagues, and student conversations have been incorporated as reflections and responses and discussed in the subsequent essay, Volume III.

Consequently, what began as an intended brief, empirical, journal article, first morphed into a more conceptual general report, then a possible chapter in a book, then a book format, then a two-volume book format, and now has progressed to this three-volume essay format to address the concepts, theories, research, criticisms, and issues that surfaced and coalesced under the umbrella construct: entrenched learnings. And still there will not be enough said, most likely.

The plan at this point is to introduce the topic of analogical thinking to contextualize the entire approach in this essay. Analogical thinking might be just the canvas that supports the variegated colours of many different aspects of thinking, aspects such as: self-deception, rationalization, beliefs, illusions, stupidity, emotions, memory, logical fallacies, foolishness, and so on.

The argument? So what is the basic argument? Or arguments?

The analogical argument advanced in this text follows:

(1) The syllogistic structure of one argument might be configured as follows:

- Major Premise: Analogies facilitate thinking when meaningful parallels are drawn between two phenomena.
- Minor Premise: A smoking orientation has meaningful parallels with a sexual orientation.
- Conclusion: A smoking orientation informs thinking about sexual orientation.

The challenges to the argument will arise predominantly with respect to the minor premise. Many could argue that the parallels will not stand. Yet, one hopes to be open to all challenges. And one can, in principle, intend to wrestle with the challenges.

(2) The Basic Parallel: The smoking orientation—that is, the *desire* to smoke (perhaps coexisting with the desire to not-smoke), the *attachment* to smoking (physical and psychological addiction or attachment), the *choices* to smoke, the *personal history* of smoking, the sense of *powerlessness* or loss of control related to smoking (over time), the *self-identification* as smoker—offers an informative parallel to other behavioural phenomena like sexual orientations, eating problems, suicidality, relationship addictions, musicianship, athletic prowess, obsessive reading, compulsive writing, fanatical preaching, and more. Moreover, it is claimed that smoking is the best model of all analogies which have been advanced to elucidate problematic aspects of sexual orientation. It may also be a good analogy for obsessions with musical proficiency, or athletic proficiency, or reading, or a problem-eating orientation.

One learns to smoke, to eat, to relate, to denigrate, and perhaps even self-destruct. One learns to play music, to play basketball, to read, to write, and co-construct. In this learning, choice is prior, precedent, and prominent—choices are made, choices have a psycho-social underpinning, choices have biological roots, choices have a history, and choice may have an

edifying philosophical function of pointing to the transcendent aspect of the human being. Choice is also seen to exist in different degrees, or different calibers, which adds layers of complexity to the psychology of choice. The caliber of the choice one has when taking the first cigarette, is mildly different from the caliber of choice when one takes the tenth cigarette, which in turn is substantially different from the caliber of the choice when one takes the ten-thousandth cigarette or the hundred-thousandth cigarette. Choice changes!

(3) The Value: As a parallel, the smoking orientation serves as an analogy for the sexual orientation and vice versa. Beyond this, a smoking orientation serves as an analogy for an eating orientation and vice versa. A smoking orientation serves as an analogy for the musicianship orientation and vice versa. Analogies when used to facilitate thinking (i.e., analogical thinking) serve to direct thinking, to elaborate thinking, to raise questions, to suggest answers, to defuse emotions, and to challenge dogma, propaganda, and rigidity.

(4) The Argument: In support of the major and minor premises, a case is built in this essay (Volume 2) from multiple sources (including: philosophy, pragmatism, ethics, empirical research, empirical data, opinions, and other analogies). Then, the case is further defended (Volume 3) with respect to esoteric criticisms, and additional critical questions raised (including questions related to human relationships, personal memories, feelings, current knowledge, pragmatism, and more).

(5) The syllogistic structure of further arguments (for eating, and running, as sample extensions) might be configured as follows:

- Major Premise: Analogies facilitate thinking when meaningful parallels are drawn between two phenomena
- Minor Premise: A smoking orientation has meaningful parallels with an eating/dieting orientation
- Conclusion: A smoking orientation facilitates thinking about eating problems as an orientation.

Or,

- Major Premise: Analogies facilitate thinking when meaningful parallels are drawn between two phenomena
- Minor Premise: A smoking orientation has meaningful parallels with a running orientation.
- Conclusion: A smoking orientation facilitates thinking about running, as an orientation.

It is a given that some analogies have more merit (better coherence, more parallels, substantial empirical foundations, reasonableness, similar implications, moral equivalence, and so on) than other analogies. Various aspects of thinking may be considered when developing a general case for analogical thinking, and the specific case for the argument in favour of the smoking orientation as an analogy for a particular target. The psychology of thinking, thinking dispositions, thinking skills, thinking styles, and thinking problems, can be brought into the mix for consideration at an initial level of conceptual analysis. For example, one might address the notions of induction, deduction and abduction. One might address the compartmentalization for critical thinking skills and critical thinking dispositions. One might address the problems associated with thinking: logical fallacies, inevitable illusions, stupidity, self-deception, denial,

rationalization, and so on. Such problems and practices that can nullify rational thinking ought to be considered. One might address problems related to culture, religion, and worldviews. Many of these nodes on a cognitive conceptual-map could, and should, surface for consideration during the analogous thinking paths considered.

An example of a key cognitive consideration is a dispositional attitude of openness; one ought to have a disposition, such that, we do not prematurely reject a claim for a particular analogy. We ought to consider the case fairly, aware of our propensity to self-deception. Goethe might have believed the maxim, *"We are never deceived; we deceive ourselves,"* but surely there is a good case for deception-by-others along with self-deception—see the discussion of Trivers (2011) in Entrenched Learnings, Volume I, for example.

If deception is so prominent, whether by self or others, how can we test our knowledge claims, our beliefs, our thinking, to guard against deception, particularly self-deception? Thinking is the answer, critical thinking. We still admit the possibility of deception, and we still need to guard against being led astray, but sound thinking, informed by well-informed beliefs, is the answer. Analogical thinking can be a very potent technique for considering knowledge claims, and testing knowledge claims. It can facilitate sound thinking and lead to sound beliefs.

Chapter 1: Thinking

Analogical Thinking

Analogical thinking can be viewed as: (1) a form of inductive thinking (Moore & Parker, 2001), (2) a "bridging" strategy to facilitate understanding of a complex concept by means of a simpler concept, or (3) a form of reasoning and problem solving requiring theoretical and empirical analysis (Gentner & Markman, 1997; Holyoak & Thagard, 1997) and/or neuropsychological considerations (Ashcraft, 2002). Each of these three views is amenable to thinking via the instrumental use of an analogical base like smoking applied to various target analogies like homosexuality. Inductively, as the analogical thinking unfolds, more and more facts, perceptions, elements and relations can be laid out which serve to facilitate induction, and abduction. With respect to "bridging," smoking does serve as a bridge to a complex and socially-complicated concept like homosexuality. Then, thirdly, theoretical and empirical considerations add credit to the reasoning and problem solving.

In terms of theoretical underpinnings, the multiple-constraints theory (Holyoak & Thagard, 1997) and the structure-mapping theory (Gentner & Markam, 1997) offer two frameworks to draw upon when considering what can be learned from the use of analogical thinking, and what has been learned from particular analogies. Together, the two theories enrich the infrastructure for thinking, and give direction for a range of considerations.

Multiple-Constraints Theory

In the multiple-constraints theory approach, Holyoak and Thagard (1997) present three types of constraints: similarity, structure, and goals. With respect to similarity, the analogy is

driven by, and dependent on, similarities in key *elements* and key *relations*. With respect to structure, *elements* and *relations* are mapped from the source to the target to identify consistent structural parallels. With respect to goals, the question of what the thinker's intent might be is developed to guide the thinking.

On another axis, the authors address a "mapping step," an "inference step," and a "learning step." Essentially, in the "mapping step" the logician (or the "analogician") identifies similarities with respect to *elements*, *relations*, and coherent structural parallels. In the "inference step" new information is formulated, hypothesized, and considered. Likely, there is a tentative acceptance or rejection process active at this point as well. In the final step, the "learning step," one acquires a broader perspective and perhaps a more-informed opinion or better understanding of the target analogy. In essence, then, knowledge grows in a manner that corresponds with reason and reality.

Structure-Mapping Theory

In structure-mapping theory (Gentner & Markam, 1997) the emphasis is on the knowledge which emerges from comparison processes (of similarities, metaphors, analogies, and anomalies) targeting commonalities (systematic, parallel, connected) and differences (alignable differences and non-alignable differences) in the source and target. The alignment of the structures is the defining characteristic but there are three psychological constraints on this alignment that the authors argue for: (1) structural consistency, (2) a relational focus, and (3) systematicity. Generally, the parallels with multiple-constraints theory are clear given the constraints related to structure and relations. The notion of systematicity, however, is less clear. In view of the notion that analogies "tend to match connected systems of relations" Gentner and Markam (1997) describe systematicity as follows: "A matching set of relations interconnected

by higher order constraining relations makes a better analogical match than an equal number of matching relations that are unconnected to each other. The systematicity principle captures a tacit preference for coherence and causal predictive power in analogical processing (p. 47)."

Drawing on the two theoretical approaches to analogical thinking there would be a series of questions one could generate as a guide for evaluating the components in the analogies considered, and, subsequently, the merits of the investigation. Such questions could be addressed initially and subsequent to a consideration of the various analogies.

1. What are the goals in formulating the analogy?
2. What are the elemental similarities?
3. What are the relational similarities?
4. What are the differences (non-alignable)?
5. What are the differences (alignable)?
6. Is the mapping coherent (showing systematicity and parallel connectedness)?
7. What is the "inference step?"
8. What is the "learning step?"

To illustrate reflection on these questions the following table represents an initial consideration using smoking as the analogical base and homosexuality as the target. The suggestions are preliminary at this initial point.

Table 1. Focus questions to address when using analogical thinking, and suggested answers for comparing a smoking orientation and a sexual orientation analogically.

	Focus Questions	Suggestions	
1	What are the goals in formulating the analogy?	-Generally: knowledge, understanding, truth seeking, theory-building, thinking, gaining tools for assisting thinking, conceptual analysis, education, and prevention, … -Specifically: To consider biological parallels, to consider environmental parallels, and to consider the psychology of choice and personal agency.	
2	What are the elemental similarities?	-Determinants (biology, environment, interactions, chance, choice, ...) -Course of development (habit, addiction—physical and psychological) -Learning processes -Psychology (identity, orientation, change,) -Psychology (self-regulation literature) -Developmental trajectory -Choice -Social status-Frowned upon by segments of society -Moral status – judged by segments of society	
3	What are the relational similarities?	-Determinants: Biology interacting with environment is similar -Society interfacing with each analogical component is similar -Remains to be seen if the elemental similarities can be moved to this relational category	
4	What are the differences (non-alignable)?	-Pre-adolescent evidences for homosexuality (unless these are explainable—see discussion of environmental influences) -Suicidality in homosexuality (unless of course there is a relationship between suicidality and smoking—for example, see Leistikow, 2003) -Feelings –reports that it "feels right" in homosexuality (unless the rebuttal argument in Entrenched Learnings, Volume 3 stands) -cross-cultural differences (unless such differences can be shown for homosexuality as well) -Development of knowledge reveals better understanding of sexuality -Pragmatism[1]	
5	What are the differences (alignable)?	-Remains to be seen if the non-alignable can be moved to this alignable category (e.g., there may not be compelling evidence for preadolescent homosexuality; there may be an issue of suicidality linked to smoking, etc.)	
6	Is the mapping coherent (showing systematicity and parallel connectedness)?	Yes	
7	What is the "inference step?"	-Both are addictions (with physiological and psychological elements) -Both are learning-based -Both show choice-points and different calibers of choice along the formative continuum -Both choice patterns founded on faulty beliefs and thinking	
8	What is the "learning step?"	-Beliefs are a key focus -Beliefs are foundational for choice -Thinking must be addressed -Change is credible -Education must be brought back to the front	

[1] A number of the non-alignable differences have been suggested in conversations. They are considered more closely in a later essay on problematized love.

When considering analogies, as Gentner and Markam (1997) point out, inferences are drawn from the base case to the particular target scenario. Given this directionality it makes sense that the base is constructed from the more informationally-rich, coherent, and systematic formulation. This facilitates mapping a maximal amount of information to the target scenario.

The situation of smoking will be advanced to provide a base that is informationally-rich, coherent, and parallel to various learned identities, orientations, and behaviours. Therefore, the smoking analogy is advanced as a vehicle which can be quite informative as a means for understanding multiple, learned behaviours. Learned behaviours, or behaviours with a feasible learning component, such as drug use, eating problems, suicidality, homosexuality, paraphilias, musical prowess, reading styles, and athletic proficiency are potentially better understood, or more broadly understood, using analogical reasoning, given an analogy that has similarities in elements, structure, relations, goals, and learning patterns.

Analogical Thinking In Rational Contexts

Development—A Consideration When Applying Analogous Thinking

People change over time. Who are you? What are you? In part, who you are, and what you are, is tied to where you were, what you saw, how you acted, and how you interacted, why, who you were with, and when. In such a scenario as expressed in the preceding statement, biological influences, environmental influences, luck, and chance are seen as determinants (see Kagan, 2010). Also, one needs to consider that personal factors, and personal free choices, interact in the formation of the self (Bruner, 1997; Khilstrom & Klein, 1997; Lewis, 1997; Nelson, 1997). Aspects of the self, aspects like beliefs, attitudes, behaviours, knowledge, images, and orientation stages, interact. This is quite likely the case, albeit with different weightings, whether one is considering a smoking orientation (Han, McGue, & Iacono, 1999), a

sexual orientation (Byne & Parsons, 1993), an ethnic orientation (Epstein, 1992), a music orientation (Kavanaugh, 1992) or even a head-turning orientation (Damerose & Vauclair, 2002). Such orientations, whether a predisposition, an identity, an image, a pattern of behaviour, an obsession, and so on, do have sources that could be viewed as simple (caused by a single determinant), or complex (caused by a constellation of determinants) with the latter being the more likely configuration. These determinants influence development.

Analogical reasoning does offer an avenue of investigation to address the complexity of an orientation with respect to *elements*, *relations*, and *developmental course*. Acknowledging a developmental trajectory for any orientation points to the merits of considering developmental trajectories for all orientations, behaviours, beliefs, and images related to the self.

Bruner's (1997) *narrative model of self construction* aligns easily with both a construction of the self generally, and the construction of aspects of the self, particularly. For example, here are some aspects of the self: I'm a smoker, I'm a bully, I'm a reader, I'm a heterosexual, I'm a soccer player, and I'm a sea-goer. Bruner shares the story of his own construction, the developmental construction, of his "sea-going self" (1997, p. 153) that began about age eleven and continued through adulthood. His story, his narrative, maps quite easily and analogically onto both a developmental narrative for smoking and a developmental narrative for sexual orientation.

Furthermore, when one applies Bruner's indicators of selfhood (agency, commitment, resource, social reference, evaluation, qualia, reflexive, coherence, and positional) it is difficult to see where the analogy between a "sea-going self," a "self-as-smoker," and a "sexually-oriented self" actually breaks down. In fact, they are strikingly similar, analogically.

The similarities can extend to the developmental trajectories which are complex given the number and nature of factors involved. Complexity is seen in Rutter's (2002) contention for

the interplay of genes, environment, development, and the endovariance associated with the joint interaction of genes and environment for most behaviour. In fact, there may be a danger in defaulting to strictly genetic determinants of a behaviour (or orientation) prematurely, or inappropriately[1]. This can be inferred from Rutter's comment on endovariance, "Ordinarily, this variance tends to be wholly attributed to genetic effects, but this is misleading because it involves environmental effects as well" (Rutter, 2002, p. 997). Yet even this defaulting to both genetic effects and environmental effects combined can be misleading.

True enough, even when biological determinants are strong, there is a more compelling case to be made for the potentially dramatic importance, and impact, of the environment interacting with the *agent*. Consequently, there is an important case to be made for *personal agency* and *learning* (generally and seminally) in the developmental context. To illustrate this point consider the multiplier effect (Ceci, Barnett & Kanaya, 2003). Small seminal differences in input (due to an interest, an ability, a push, a nudge, a comment) can lead to a biasing that generates cascading, or snowballing, subsequent learning effects—generating substantial changes over time[2]. Small initial differences can become exceedingly large differences later in one's developmental path. For an actual example see Bruner's (1997) example of his "sea-going self" (p. 153). For a hypothetical example, Ceci, et al. (2003) present the case of an individual child with a slight advantage over his peers in eye-hand coordination and forearm strength. This small difference can bias the child to experience baseball favourably, to orient towards baseball, to select activities related to baseball, to select environments related to baseball, to seek friends who play baseball, and so on. The small initial difference in ability, or proclivity, cascades to the point of a notable difference. Then, over a period of time, in part through a great degree of self-

[1] See also Hubbard & Wald's (1997) discussion of "genomania," pages 163-165, in their book "Exploding the Gene Myth." There is a danger in defaulting to the genetic explanations.
[2] See also Thaler and Sunstein's (2009) work on the power of the "nudge."

selection (i.e., choices or *personal agency*), a dramatic level of skill and expertise is developed. Of course, the converse, or a negative trajectory, is possible as well; perhaps the expert thief and the bully owe their path to a small initial proclivity, ability, friendship, or event that seemed minor league at the time, but earns them headlines later, though not in the sports section of the newspaper.

Expanding a multiplier-effect-model has been considered with respect to changes in IQ over time as a function of environment (Dickens & Flynn, 2001). This is potentially relevant with respect to broadening the range of effects and the environmental determinants of such effects. Dickens and Flynn make the case for multiplier effects that are not just individual but also social. Social multiplier effects seen in such influence-sources as TV programming, news, public attitudes, and so on, can have striking consequences. To illustrate this, Dickens and Flynn draw upon the sports analogy of basketball noting how basketball proficiency has improved over time as a function of: (1) ability (biologically based enhancements over time), (2) environment in the form of conventional multiplier effects (e.g., dad playing basketball with a son, …a child getting picked first to play basketball at school, etc.) and (3) social multiplier effects (an encouraging public shift in attitude towards basketball, TV programming favouring basketball viewing, high-profile basketball players glamorized in the media, etc.). Essentially, the environment is having a profound effect in driving actual developmental increases in skill levels (learning) through such multiplier effects and …*choices* in response to such effects.

Although Dickens and Flynn (2001) are addressing the compelling impact of environment on dramatic IQ increases, in spite of high heritability for IQ, there are clear implications for other traits and states that have an acknowledged heritability component—for example, obesity, substance abuse, smoking, sexual behaviour, sexual proclivity, suicidality, and so on. Again, analogical reasoning does offer an avenue of investigation to address the

complexity of self-image, self constructs, and consequent behaviour. As IQ increase is addressed, in part, as a function of environmental multiplier effects and choices (in a broad context of developmental psychology and biology, and in a narrow context of the specific mechanics and stages of the thing learned) so too smoking can be addressed in such a framework. And homosexuality! And heterosexuality!

Given the variegated influences on human development, as captured by Rutter's claim, given the multiplier-effects model advanced by Dickens and Flynn (2001), and given common sense, it is appropriate to consider the causal pathway of any orientation in this context. Essentially, interactive effects as well as isolated biological determinants (or influences) and environmental determinants (or correlates) influence choices and the subsequent orientation formation. Further influenced is the developmental course of an orientation—for example, a sexual orientation, a smoking orientation, a political orientation, an eating orientation, a racist orientation, a head turning orientation, a musical orientation, or even a theoretical orientation regarding orientations.

Surprising to some, at least initially, there is an interesting case to be made that the smoking orientation does serve as an analogy for such diverse behaviours as eating problems, suicidality, and a sexual orientation. At the same time, the smoking orientation serves as an analogy for musical proficiency and athletic proficiency. Reasons for considering the smoking analogy are, at one level, its amenity to environmental determinants, its seemingly strong biological determinants, and the nature/nurture interactions that mesh with personal choices.

The case broadens even further for pursuing this analogous thinking related to smoking and homosexuality when consideration is extended to pragmatic reasons, philosophical reasons, ethical reasons, existing scholarship, and logical reasons. The case also broadens when

considering comparable evaluations of other analogies (e.g., a dieting orientation, an ethnicity orientation, and a suicidality orientation).

Pragmatism—A Consideration When Applying Analogous Thinking

One rationale for considering the environmental determinants of an orientation is a practical reason. The reasoning flows as follows: It is assumed the environment plays a causal role in the formation of beliefs, attitudes, behaviours, self-concept constructs, and so on. It is assumed the environment is changeable. And, it is assumed that changes to the environment can lead to changes in the person. Thus, the pragmatism! A possible beneficial outcome exists (via educators, therapists, parents, friends, and even the self) since the environment is malleable.

We believe we can do something. At one level, then, acknowledging such determinants as environmental determinants can facilitate understanding, and change. But at another level, and possibly a more important level, a more appropriate dialogue can emerge—a dialogue leading to a focus on environmental factors with an intention to engage those factors, and influence those factors, to ultimately influence outcomes.

Such a *pragmatic rationale* is commonplace in the health sciences, the social sciences, and education. It also aligns with our innate humanitarian propensity to help. “What can I do to help?” That is a pragmatic question! If the determinants of an orientation, or behaviour, are largely environmental, or even partly environmental, then beneficial interventions are likely to be considered as amenable and promising.

On the other hand, and by way of contrast, interventions with respect to sole biological determinants, might follow a *justificatory rationale,* and ultimately be considered as only tenuously warranted, or more likely unwarranted (e.g., when limiting causes to genes or race). If the effect is viewed as due to genes, or race, then interventions would likely be suspended,

downplayed, minimized, or viewed as merely supportive at best (e.g., prosthetics, a restructured supportive environment, compensatory interventions, etc.).

In other cases, when focusing solely on biological determinants interventions might be premature. If an orientation or behaviour is due to hormones (e.g., sex-typed behaviours, or left-handedness) interventions to compel change (e.g., forcing a handedness change) are not likely to be seen as pragmatic, although such interventions could be argued for, as were argued for in the past with respect to changing handedness.

In still other cases involving unambiguous biological determination, biologically-based interventions are quite complicated. When considering problems like Huntington's Disease, Down Syndrome, colour blindness, nose size, or breast size, clearly these present complicated intervention scenarios, technically and ethically (Buchanan, Brock, Daniels, & Wikler, 2000; Lagay, no date; Farrelly, 2004). One asks: is there really a good justification for intervention aimed at change, as opposed to support, in such cases?

Where environmental variables, and developmental variables, are more prominent, and where there is interplay between genes, environment and development, there does seem to be a stronger case for intervention. There is a case for extending the interplay to include a significant intervening role for friends, parents, educators, therapists, and society, as particular environmental variables are more amenable to influence than biological variables. "What can I do to help?" This is pragmatically important, as a question, and as an objective.

A focus on the more malleable variables, the environmental variables, is likely to be more practical, and supportable, given the current state of knowledge and technology. Indeed, ethical discussions of resource allocation for interventions (whether egalitarianism, sufficientarianism, or prioritarianism) do tilt in the direction of a cost-benefit analysis favouring

the greatest good for the greatest number (see Farrelly, 2004). Intervening at the environmental level is cost effective, rational, and pragmatic.

Since attending to environmental determinants as opposed to biological determinants is consistent with a *pragmatic rationale,* what would be a typical course of action when addressing smoking? Smoking cessation programs target environmental and psychological influences, rather than biological predispositions, for those wishing to quit smoking. It is a logical, pragmatic, cost-effective (at least when compared to programs targeting biological determinants) approach aligning with common sense.

Similarly, there can be some coherence in analogically targeting environmental determinants of homosexuality, suicidality, eating disorders, athletic prowess, musical accomplishments[1], etc. This is pragmatic. Graphically, it makes more sense to plan to swim the Atlantic between England and France than between England and Cape Fear.

Perspective—A Consideration When Applying Analogous Thinking

A similarly compelling rationale is seen when considering a *perspectival rationale* (methodological and epistemological) for applying analogous thinking. For those who lead with the head rather than the heart, there is a case, indeed a mandate, for all perspectives being "on the table," and a case for arguing that some positions deserve more credibility, or less, than others. This assigning of credibility, or justification, or warrant, based on the use of such tools as reason, empirical evidence, common sense, consistency, coherence, completeness, and logical fallacies—or even such tools as propaganda, political agenda, power, and personal interest—is essential to the scholarly enterprise. If all positions are merely subjective constructions, with

[1] Some may wonder about the merits of including proficiencies like "musical prowess" here as illustrative of products of environment and choices as opposed to nature. But there is a growing body of literature making the case for environmental and personal determinants even in genius-cases like Mozart and Beethoven (see Gladwell, 2011 and Shenk, 2010).

yours not being better than hers, arguing for a position is more game-playing than knowledge-building. Why else argue for your position at all? Diversity of opinions and disagreements about explanations, as well as the non-politicized search for understanding, knowledge, and truth must exist if the pursuit of knowledge is to have much meaning and value. It is incumbent, therefore, that various perspectives be encouraged, even those we dislike, when searching for an explanation, an alternate explanation, a better explanation, or the best explanation. "Let my people judge," a modern-day Moses might proclaim[1]. Analogous thinking about smoking and homosexuality can place ideas on the table, though not everyone in the subsequent exodus will be happy.

The *perspectival rationale* for encouraging multiple-perspective-taking is, at times, challenged based on political correctness, social conventions, multicultural sensitivity, reason, possible negative social repercussions, personal insults in the form of "it hurts some people," racism, the "phobias," and more recently, "hate speech." Some of these alternate perspectives are shut down by: "shouting" loudly, picketing, denial of a platform, pairing with quiet, nuanced and subtle uses of ad hominem arguments, fashionable name-calling, straw-man arguments, acerbic rhetoric, appeals to emotion and compassion, a plethora of logical fallacies, and even the long, wrong, strong-arm of Human Rights Commissions[2]. Ironically, those seemingly prone to a "fear" of alternate perspectives, and who assemble the pejorative labels (e.g., Islamophobia,

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1 While political correctness might work to keep certain perspectives "off the table," a rather humorous, yet insightful, illustration of multiple perspectives "on the table" is seen in the academic discussion of Pooh (Crews, 2001). It captures the delight of allowing "weird" perspectives "on the table." Postmodern positions on Pooh (in such variegated forms as Deconstructionism, Marxism, Radical Feminism, Post Colonialism, Biopoetics, Satanic Ritual Abuse, and some newer neologisms like "Negotiationism") help flesh out multiple-perspective-taking. While disagreeing with most perspectives, with varying degrees of visceral reaction, one, nevertheless, has a sense of commendation that these positions were allowed onto the "table," tolerated, and argued against, or for. The reader judges the merits.

[2] While Human Rights Commissions in Canada have had a chilling effect on certain perspectives and free expression a few brave individuals (e.g., Ezra Levant and Mark Steyn) have resisted. They are seen as marshalling under the picturesque term an "Army of Davids" (a term Levant draws from Glenn Reynolds of Instapundit.com) a form of resistance against the Goliaths (Levant, 2009, p. 159).

Xenophobia, homophobia, and so on), could themselves be labeled as "gnosisophobes," that is, those who seem to have a "fear" of knowledge.[1]

At the other end of the continuum, and equally problematic, some argue that all perspectives should be "on the table" because they are all equal—the postmodern, relativistic notion that all perspectives are just subjective constructions—radical constructivism (Jonassen, 1991a, 1991b, 1999). If this is in reality the case, then, is it not bordering on nonsense to defend a position, any position? Communication, all communication, would be merely….

Rational people (and perhaps even irrational people) do hold that some arguments, and some perspectives, and some claims, are better than others. But this does not necessarily mean we should abandon the lesser arguments or the weaker arguments. A more appropriate philosophical rationale for such a multiple-perspective-taking approach can be linked to Karl Popper (1965, 1968) and some of his students (e.g., Feyerabend, 1975). Popper makes the case for a scientific methodology involving the making of a conjecture followed by attempts to refute it. If it can't be refuted, then it stands. It stands until it can be refuted. The conjecture that has not been refuted does not represent truth or absolute knowledge, but rather a proximity to truth—verisimilitude. True, some conjectures might be better than others. They might explain more. They might align better with common sense, or egalitarian ideology, or political correctness. But they all stand until refuted.

In fact, a point stressed by Feyerabend (1975) is that all conjectures should be on the table. We need a tolerance for weak hypotheses, weird hypotheses, and offensive hypotheses. To illustrate his claim consider his own words: "Neither blatant internal inconsistencies, nor

[1] There may be a worthy topic here related to fear of knowledge in such well known psychological constructs as self-deception, self-delusion, rationalization, suppression, repression, projection, denial, reaction formation, confabulation, and so on. That which is driving "gnosisophobia" is likely a zealous compassion, and while admirable in part, it is a compassion independent of knowledge, or viewed as superior to knowledge. A recent example is seen in an article in, ironically, Free Inquiry, by Reitan (2007) titled "Love the sinner, hate the sin?" where preference is given to bad analogies, subjective experience, pragmatic consequences, and a bifurcation fallacy rather than an adequate critique of the foundations he dismisses. Is the heart leading the head? It seems so for the "gnosisophobe."

obvious lack of empirical content, nor massive conflict with experimental results should prevent us from retaining and elaborating a point of view that pleases us for some reason or other. It is the evolution of a theory over long periods of time and not its shape at a particular moment that counts in our methodological appraisals (Feyerabend, 1975, p. 183)." Keeping ideas on the table is a good idea.

Thus, there is arguably a perspectival rationale for multiple-perspective–taking, rather than a methodological fixation on a single paradigm.[1] This would be particularly important when applied on the one hand to "hot" topics (e.g., Islamicists, Global Warming, War, guns in society, legalization of certain illegal drugs…), or sensitive topics (e.g., abortion, sexual orientation, smoking, racism, colonialism, whiteness, …), and on the other hand, when applied to cognitive topics (e.g., decision making, critical thinking, executive functions, curiosity, creativity, …), or psychological topics (psycho-social development, styles, temperament, personality, motivation, disorders, dysfunctions, disabilities, …). Breadth is as important as depth.

Moreover, there is a role for the Devil's Advocate. Invite the input of the naysayers, the cynics, and the critics. There is a philosophical rationale for encouraging multiple-perspective-taking with *mandated* inclusion of politically incorrect perspectives. Consequently, there is a place, or should be, for considering "the smoking analogy," as developed here in this text, in a discussion of sexual orientation, or in a discussion of suicidality, or in a discussion of eating problems, or in a discussion of learning generally. Of course, the analogy may falter when considered, but that remains to be seen.

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[1] This is not the same thing as the Kuhnian notion of a plethora of views arrayed against the dominant paradigm prior to a major paradigm shift. Rather, it is a call for a marketplace of paradigms and intentional multiple-paradigmatic approaches. Paradigm shifts in this conceptualization would be intra-epistemological, and commonplace, rather than inter-epistemological and epochal. To illustrate the intra-epistemological shifts, consider that we continuously switch hats (paradigms) when we consider, for example, problem behaviours in children—the medical perspective, the psychological perspective, the developmental perspective, the ethological perspective, the political perspective, and so on—which influence differentially: understanding, implications, applications, and interventions.

Ethics—A Consideration When Applying Analogous Thinking

Another way to frame this issue of multiple perspectives is with respect to "tolerance." In this context, "tolerance" as a philosophical notion (as opposed to a political or social notion) is seen as a valuable epistemological practice. Diversity of opinions and disagreements about explanations are foundational for the acquisition of knowledge. Ideas, hypotheses, and theories need to be competitive, tested, and prominent until refuted; and until refuted, tolerated. Epistemological, or methodological, tolerance is pursued, desired, and, indeed, mandated in science.

Is social, or fashionable, "tolerance" the same? Technically, yes. But wading into the issue of tolerance and bigotry is tangling with a tar-baby. If one shows tolerance for X (whether a person, an opinion, an explanation, an alternate hypothesis or a theory), then by definition, he or she disagrees with X, or is at least suspicious of X. At one level, the popular level, *tolerance extends to people*; however, the subtext here is that we disagree with them, or we dislike them in some way. We tolerate them, and do them no harm, however. At another level, *tolerance extends to ideas*, and positions, we disagree with. At this latter level, the tolerant person is the person who allows disagreeable ideas on the table, and if concerned about an idea the tolerant person challenges it in a scholarly fashion with tools of reason, evidence and argument. The intolerant person directs his animus at the ideas (via silencing, shouting-down, propaganda, speech codes, fudging, etc.), or at the person (via name calling, ad hominems, black-listing, witch-hunts, and so on).

These two targets of tolerance (ideas and people) are principled. With respect to ideas tolerance would seem to align with an *ethical rationale* for multiple-perspective-taking, and an *ethical rationale* for tolerating analogies whether mild analogies (like the smoking analogy) or

offensive analogies (like Hitler, holocaust, necrophilia, pedophilia). Arguably, one should tolerate ideas much like one would tolerate a person of a different religion, a person of a different political party, or a person with a different hair style. Arguably, argument is the appropriate response for the tolerant person.

If my claim is that theory X is the best explanation of the evidence, and that claim hurts you, what do I do? Take theory X off the table? Or to put it another way: If your theory X hurts me, or offends me, what do I do? Shout louder? Complain to authorities? Lodge a complaint with the Human Rights Commission? Insist on sensitivity training? Surely the reasonable approach is: (1) tolerate it (i.e., let it lie), (2) construct a better argument for theory Y, and (3) show the flaws in theory X (via, reason, experiment, coherence, and so on).[1]

Correlation—A Consideration When Applying Analogous Thinking

In addition to the earlier rationales placed on the table, there is a rationale related to the existing scholarly literature. This provides a base for considering the correlates of a "concern" regarding sexual orientation, the correlates of a smoking orientation, and the analogous nature of the two orientations. On the one hand, there is scholarly evidence to consider for a biological basis for sexual orientation (both genetic and hormonal) with subsequent physical effects (neurological, behavioural, and anatomical). On the other hand, there is scholarly evidence for an environmental basis for sexual orientation (parenting, experience, peers, the exotic, and so

[1] One further aspect related to ethics is the issue of worldview. The ethical questions seem to fit most comfortably in a religious worldview, particularly the Judaeo-Christian and Islamic worldviews. Whereas both smoking and homosexuality might be judged as "wrong" in a religious worldview, or at least discouraged, they would be judged as "different" in a naturalist worldview. Indeed, diversity is more likely to be encouraged in a naturalist worldview—an ethological paradigm—since diversity in a species is viewed as a means to ensure survival in the event of relevant environmental changes. It might be difficult to see how homosexuality or smoking could have survival value but surely the logical, albeit speculative, case could be made. For example, nicotine might have some protective effect on an organism that could ensure survival during some biological cataclysm or other, much like sickle cells mitigate malaria effects. Homosexuals born later in the family constellation, so the argument goes, may facilitate the raising of older siblings serving as a resource for parents, a resource for their older siblings, and a resource for the sibling's offspring; and, thus, homosexuality would be biologically adaptive for the family gene pool. Similar arguments equally apply to asexuality, or non-procreative paraphilias.

on). However, it is similar for smoking; there is scholarly evidence for both the biological and environmental determinants of smoking. While the popular view in our current, fashionable, media culture, seems to be the notion that the biological basis for a sexual orientation is well established, the dominant view in the academic community which emerges from the existing literature (secular and religious) is that the issue of cause is best understood as an interaction of biology and environment (Byne & Parsons, 1993; Goldberg, 1991; Jones & Yarhouse, 2000: Satinover, 1996; Schmidt, 1995). Thus, (1) any weakness in the biological basis for sexual orientation provides a scholarly *rationale* for considering environmental correlates, and (2) any evidence of environmental determinants of sexual orientation provides a scholarly *rationale* for considering more fully the environmental correlates as well as biological correlates, and the interactions between variables. Both biology and environment serve the interests of profile-building. Moreover, both claims (biological and environmental) work comparably for the smoking orientation as well, as we'll see.

Logic—A Consideration When Applying Analogous Thinking

What logical reasons might be advanced as relevant motivators for considering analogous thinking? With respect to homosexuality, Goldberg (1991) raised the need for logical consistency when reflecting upon the question of the normalcy of homosexuality. He saw analogous thinking as an important component of logical consistency. In making his case for logic, or rather the need for logical consistency, his choice of analogies (i.e., comparing homosexuality with necrophilia and coprophilia) would surely predispose some readers to various negative responses: (1) to dismiss his claims with no further analysis, (2) to commit certain logical fallacies as a reaction (e.g., "the genetic fallacy," dismissing Goldberg rather than dealing with his argument), or claim certain logical fallacies (e.g., "poisoning the well," "the

bifurcation fallacy," or "appeals to emotion" in a roundabout way), or (3) to accept the analogy without giving due consideration to the pejorative aspects of the comparators. Of course, the better response is to be seen in responding logically, not emotionally, to his argument.

To mitigate these potential negative effects Goldberg offers his own disclaimer right up front. He comments that he is not implying "…that homosexuality is morally, psychologically, or in any other respect comparable to necrophilia and coprophilia other than in the logical sense invoked here; my point is merely that in the logical respects mentioned here the three are analogous, so that one cannot make these arguments for the normality of homosexuality unless one is willing to make them also for necrophilia and coprophilia (p. 51)." But such a disclaimer might not suffice, indeed, is unlikely to suffice, for such an emotionally loaded parallel. Less noxious comparators (e.g., left-handedness, race, and smoking) allow for a more balanced consideration of the argument that Goldberg wishes to make. However, the best analogy remains to be seen. Before moving to a consideration of other comparators, what about the specifics of Goldberg's argument?

Goldberg writes:

> "The homosexual spokesman argues, in effect, that homosexuality is analogous, to left-handedness. If he is correct, if homosexuality is the result of an interplay of physiological and environmental factors that can reasonably be seen as normal, then he is quite correct in saying that homosexuality is normal and that society is terribly wrong in its assumption that homosexuality is abnormal. But the homosexual spokesman cannot merely assert that this is the case. For necrophiliac behaviour, like homosexual behaviour, is seen as abnormal by society. Necrophiliac behaviour is negatively sanctioned by society. Necrophiliac behaviour, like homosexual behaviour, is not inherently (i.e., regardless of social sanction) destructive or self-destructive.

> Necrophiliac behaviour, like homosexual behaviour, is (I assume) found in many or all societies. (For some reason many people seem to feel that, if a behaviour is present in other societies or other species, that somehow demonstrates its normality; they would never make this argument for physical diseases[1].) Necrophiliac behaviour, like homosexual behaviour, is often seen by those manifesting it as being perfectly normal and as not being a source of unhappiness. Assuming that the homosexual spokesman would agree that necrophiliac behaviour is abnormal in some sense other than merely that the society considers it such, clearly the spokesman's problem is that he must present us with a distinction between homosexuality and necrophilia that would permit us to consider the former as normal and the latter as abnormal." (p. 50)

The call that Goldberg makes for logical consistency is intriguing. It is not entirely clear that he has the issue correctly specified since he does say that "…an assessment of the normality of the behaviour must be based on an assessment of the normality of the cause" (p. 51). But is this the case? Surely a normal cause can be consistent with an abnormality, and vice versa.

To illustrate normal causes, Goldberg does consider analogies like skin colour (or race), left-handedness, an aversion to pork, or refusing blood transfusions, for which causality can be investigated but is typically considered within the bounds of normal. To illustrate abnormality he considers necrophilia and coprophilia for which both the behaviour and causality is considered abnormal. Perhaps there is a four-category system that could be considered when cataloguing behaviour as illustrated by the following table.

[1] Or coprophilia one might add, since there is a subset of dogs who seem to value recycling feces.

Table 2. Categories for Considering the Relationship Between Normal and Abnormal Causality and Behaviour in Goldberg's Variations

Cause	Behaviour	Example	Type
Normal	Normal	Ethnic Majority –Not Eating Pork (Jewish groups and Muslims) *Left-handedness* (Cultural acceptance)*	Type 1
Normal	Abnormal	Ethnic Minority- (Not Eating Pork) *Left-handedness (Cultural judgment or non-acceptance)*	Type 2
Abnormal	Normal	Not Eating Pork (Learned or physiological aversion) *Left-handedness (Prenatal stressors but Cultural acceptance)*	Type 3
Abnormal	Abnormal	Coprophilia *Left-handedness (Prenatal stressors and Cultural judgment)*	Type 4
Abnormal	Normal	Coprophilia (e.g., a hypothetical group accepting and arguing for normalcy in adults, *a coherent argument*[1])	Type 4x
Normal	Abnormal	Coprophilia (an argument for a *normal causal history like paired-associate learning*, but an abnormality in society)	Type 4y
Normal	Normal	Coprophilia (an argument for a normal causal chain and normal behaviour, *e.g., an infant/toddler behaviour*)	Type 4z

*Note. Italicized font indicates a less dramatic moral weight.

In Table 2 one can see there is room for differences in making judgments about cause and behaviour with respect to "normal." But, thinking analogically, the mapping between base and target becomes problematic as elements and parallelisms increase in both complexity and non-alignable similarities.

Smoking could be identified by some (in order of decreasing weight) as a Type 2 or Type 4 scenario, with an emphasis on the abnormal aspect. Others might focus on the cause being normal and the behaviour being legal (quasi-normal) and therefore Type 1. Still others might see the cause as rooted in abnormal processing, even though the behaviour is legal and

[1] Examples of coherent arguments for behaviours that most of society would reject as abnormal, but are advanced as not abnormal, might be: (1) infanticide as argued for by Peter Singer (Singer, 1993), (2) zoophilia (i.e., zoosexuality) as advanced in recent publications (Williams & Weinberg, 2003; Singer, 2001), and (3) infanticide, zoosexuality, homosexuality, intergenerational sexuality, as argued from non-human-species activity (Bagemihl, 1999).

therefore Type 3. Substituting the term homosexuality, or suicidal-ideation, or overeating, parallels the above Typing system seamlessly.

Overall, given the various rationales considered, there is a good case for using smoking as an analogical base for various targets like sexual orientation, suicidality, eating problems, or simply developing a passion for playing the piano. There are parallels in *elements*, *relations*, *structure*, *development*, and *acquisition*. The parallels are logical. Thus, there are logical reasons for this analogical thinking, for example, between a smoking orientation and a homosexual orientation.

Chapter 2: Analogical Thinking About Smoking and Sexual Orientation, Etc.

Smoking As The Analogical Base

When considering smoking as an analogy for learning (whether learning things viewed as positive or learning things viewed as negative) there is not likely to be much concern, or animus, with respect to targets such as learning to play the piano, or learning to read, or even developing an addiction to alcohol, or perhaps even learning to act as a bully. However, applying a base like smoking to targets like suicidality, eating disorders, heterosexuality, homosexuality, ADHD, zoophilia, pedophilia, and so on, will raise eyebrows, and ire. Applying an analogical base like smoking to learning the heterosexual orientation seems odd, at least. As a consequence, there could be an emotional, or rash, rejection as opposed to curiosity, consideration, and then a rational critique. For a while, shelve a shift to the polemics of political correctness as opposed to rational critique; for a while, shelve a shift to a psychological reversion to denial, rationalization, and self-deception as opposed to rational critique. The question remains: does smoking map onto such identities and behaviours as heterosexuality, homosexuality, eating problems, suicidality, zoosexuality as well as athletic prowess, creative writing, and musical proficiency, in a manner consistent with informative analogical thinking?

The contention here is that smoking does, indeed, map onto many behaviours and identities in a manner that facilitates informative inferences and knowledge building—what theorists like Gentner and Markam (1997) and Holyoak and Thagard (1997) would view as the inference steps and the learning steps of analogical thinking. Smoking as a base brings parallel elements and relations (e.g., biological, psychological, social, environmental, health, moral, educational, and volitional constructs) to the thinking process. In addition, the smoking base provides an opportunity to consider apparent non-alignable similarities more closely, with a

possible outcome of shifting them to the alignable category, that is, if a case can be made to support the shift.

Moreover, somewhat consistent with multiple-constraints theory (Holyoak & Thagard, 1997), goals (i.e., of smoking and various target analogies, as well as the goal of analogical thinking) also are arguably seen to be similar on more than one dimension. On the one hand, the principal goal of knowledge building associated with analogical thinking is clear. On the other hand, the goals within the analogies—both the base analogy and the target analogy—(e.g., goals related to pleasure, image, curiosity, rebellion, appetite, and so on) have similarities, as well. This will become clearer.

Furthermore, smoking can be considered with respect to numerous axes: biological determinants (e.g., genes, hormones, neurological function), environmental determinants (e.g., peers, family, media), developmental factors (e.g., age, time, cognitive development, moral development, social development), addictive factors (i.e., physical and psychological addiction, appetites), educational factors (learning theories, models of the learner, and teaching protocols), teleological factors (e.g., purpose, value, orientations, identities), and volitional factors (intentionality, will, and choice). This breadth adds value to the analogical function of smoking, as a base analogy.

Smoking can be viewed as a rich analogy for parallels with anything learned. Smoking as a habit is less genetically determined than physical features like skin colour, and probably less hormonally determined than physical markers like left-handedness. It is less of a sociological ascription than ethnicity. And when compared to a target like homosexuality, it is less noxious than analogies like necrophilia or zoophilia (see Goldberg, 1991), less inflammatory than the analogy with pedophilia (Brown, 2011), and less trivial than analogies like petuality (pet preference) or Zomnia (i.e., sleeping positions) (see Weinrich, 1992). Indeed,

when compared to such target orientations as a problematic eating orientation, a sexual orientation, a drug abuse orientation, a suicidality orientation, it is apparent that a smoking orientation arguably falls sufficiently close: (1) to the environmental end of the determination continuum (nurture vs nature), and (2) to the less offensive end of the social-judgmental continuum, or moral continuum (venial vs vile), to serve as a useful analogy for various human phenomena[1]. Furthermore, if smoking serves as a useful analogical base in these cases, it is reasonable to explore its merit as an analogical base for the acquisition of a heterosexual orientation (see Rationally Choosing Heterosexuality).

Biological Influence For A Smoking Orientation

Smoking is an intriguing analogy, as well as an informative analogy, in that, it presents an enlightening challenge to those who lean towards a genetic explanation for sexual orientation; furthermore, it presents an instructive challenge to those who lean towards an environmental explanation for those prone to eating problems, or suicidality. Smoking has both biological drivers and environmental drivers, as do heterosexuality, homosexuality, eating problems, suicidality, athletic prowess, and reading proficiency.

Consider the biological drivers. Concordance rates for smoking in twin studies are somewhat comparable to the concordance rates for homosexuality, or eating problems, or suicidality. Indeed, even more striking, and surprising to some, such concordance rates for smoking are more biologically forceful than the concordance rates for homosexuality. Batra, Patkar, Berrettini, Weinstein, and Leone (2003) reviewed the issue of the genetic determinants of smoking and noted, "… heritability estimates for smoking in twin studies have ranged from 46 to 84%, indicating a substantial genetic component" (p. 1730). These concordance rates are

[1] While alcoholism has also been advanced as a comparable analogy to something like sexual orientation, or food addictions, smoking is less pejorative in the sense that smoking doesn't have an inherent medical link to illness or pathology. Although the medical link to alcoholism stills seems debatable as suggested in the recent discussion in the book "Willpower" by Baumeister and Tierney (2011)

substantially higher than the more recent concordance rates reported for homosexuality (see Bailey & Pillard, 1991; Bailey, et al., 1993, 2000), particularly the 2000 study which was showing concordance rates in the 20 to 24% range. This latter rate for homosexual concordance is consistent with recent data from a large scale Swedish study (Långström, Rahman, Carlström, & Lichtenstein, 2010) reporting concordance rates of 18% for males and 22% for females.

Moreover, the concordance rates for smoking are roughly comparable to the concordance rates for weight problems (obesity and related phenotypes) which seem to fall in the 50-90% range (Kaprio & Harris, 2008), and the concordance rates for suicidality which vary considerably but do indicate a heritability effect perhaps around the 35% mark with some indication that they are as high as 55% for a serious suicide attempt (Brent & Mann, 2003). As a point of comparison, ADHD concordance rates are consistently high (75%) with even higher rates (76-92%) associated with extreme ADHD scores (Willcutt, Pennington & DeFries, 2000). Interestingly, homosexuality seems to have the lowest of the concordance rates, in the more recent studies at least, of all these target categories. Thus, the biological determinants of one sexual orientation, homosexuality, are arguably less than the popular press presses (see also Hubbard & Wald, 1999 for a critique of "genomania," that is, the critique of the penchant for weighting influence in favour of biological determinants).

Environmental Influence For A Smoking Orientation

In a further refinement of the genetic influence on smoking, variables such as shared environment and culture have been considered. Han, McGue, and Iacono (1999) studied 327 monozygotic sets of twins and 127 dizygotic sets of twins. They addressed the genetic influence within the context of "shared-environment" and "non-shared-environment," for males and females. They report a strong influence for "shared-environmental" factors with their univariate analyses showing the shared environmental factors accounting for 44% of the variance; the

genetic influence accounted for 36% of the variance. Based on their data related to alcohol and drugs, as well as tobacco, they posit a common pathway model for a single phenotypic factor underlying high-risk behaviours related to substance use. While they see a better fit with their female data as opposed to their male data, their gender-invariant model for "liability" shows genetic factors accounting for 23% of the variance (much like the homosexual concordance rates reported by Bailey, et al., 2000), shared-environmental factors accounting for 63% of the variance, and non-shared environment accounting for 14% of the variance. They also comment that their data are suggestive of a stronger genetic influence for males, and a stronger environmental influence for females. These findings for smoking do parallel analogical notions, and empirical data, for the biological and environmental determinants of homosexuality. Moreover, the fact of the sex differences in smoking determinant-patterns, intriguingly parallels the fact of sex differences in homosexual determinant-patterns.

Madden, Pedersen, Kaprio, Koskenvuo, and Martin (2004) broadened the focus on smoking determinants to incorporate crosscultural variables. Using much larger samples (more than 20,000 twin pairs) than Han, et al. (1999), they reported a strong genetic-driver influence on smoking—46% for women and 57% for men, with the difference statistically significant. The contribution from the shared environmental experiences ranged from 26% to 45% in women as a function of age, with the younger females showing the greater liability. In men, the pattern was similar, but less, and differed by country (Scandinavia, ranged from 19% to 33%; Australia ranged from 11% to 26%). Clearly, the younger group (18-25 years) seemed more prone to shared-environmental influences upon smoking. In fact, the authors note, "…our findings suggest that the importance of shared environmental influences on becoming a smoker is greater for those with an earlier age-of-onset for regular smoking" (p. 94). While the influence of peers as a shared environmental influence can (1) inflate a genetic effect when uncontrolled, and (2)

contribute to liability, it does not rule out a genetic effect. Madden et al claim "…controlling for the influence of shared peers, we found that a substantial genetic influence on becoming a regular smoker remained, indicating that exposure to cigarette use in peers cannot entirely explain the higher MZ than DZ twin pair concordances for the onset of regular smoking observed in these Australian female twins" (p. 94). The bottom line is the observation that smoking runs in families, and there is a relatively strong genetic component to the likelihood of developing a smoker-orientation.

In spite of the strong genetic underpinning of a smoker-orientation, there is, nevertheless, a compelling empirical rationale—and common-sense rationale—for exploring the important environmental correlates of smoking. This would be particularly salient where prevention, cessation, and recidivism are issues. Moreover, this rationale would apply whether addressing an individual person's smoking trajectory, or broader behaviours like drug use, suicidality, eating problems, sexual behaviours and ideation, delinquency, bullying, and so on. The nurture side (i.e., environment, education, learning, intentions, motivations, choices, and so on) of the issues is important

One further interesting parallel between the sexual orientation and the smoking orientation emerges from reflections on the statistics tapping into degree of involvement. When one examines the statistics for homosexuality at least three clear categories can be logically formulated (the *committed*, the *interested*, and the *oblivious*). The 10%[1] of males ranking 5 or 6 on the Kinsey scale in the Kinsey data might logically fall into the *committed* category, the 37% to 50% extrapolated from Kinsey could fall into the *interested* category, and the 50% with "no overt or psychic experience in the homosexual after the onset of adolescence" (Kinsey, 1948, p. 650) would fall into the *oblivious* category. Note the ratio of *committed* to *interested* falls

[1] This 10% figure is used here as a point for comparison purposes only. The more valid percentage of 2.8%, reported by Laumann et al (1994) later in this paragraph is considered to be the more appropriate estimate.

between 1:4 and 1:5. Similarly, using the data from Laumann et al (1994) the *committed* at 2.8% (males) and the *interested* (noted at a maximum of 12% in the footnote on page 290) shows a similar ratio 1:4.3. In a Master's thesis (Giesler, 2005) on smoking in university level students the *committed* (made up of daily smokers) were flagged at 3.37%; the *interested* (made up of Occasional, Experimental and Former smokers) totaled 15.91%, for a ratio of 1:4.7. This is an interesting ratio as it compares with the ratios for the homosexual data.

The ratio doesn't hold up for adult smokers however. While the numbers for adults who have never smoked—US 43% (Hitti, 2005) and Canada 54% (Northwest Territories Health and Social Services, 2001)—would be roughly comparable to Kinsey's statistic of 50% for "no overt or psychic experience…" with homosexuality, the *committed* smokers in the US are much higher (16.35%) which does not even generate a 1:2 ratio when compared with the *interested*, made up of occasional and former smokers (27.15%)[1]. Of course, by way of a caveat to consider here, many adults may have moved from habit to physical and psychological addiction given the extended time frame.

Smoking as a Wide Base Analogy

As described above smoking does have a complex set of determinants related to biological and environmental influences. Moreover, as will become clearer, smoking serves as an analogical base that does arguably map onto various targets. As may be seen in the figure below (Figure 1) there are a number of constructs that interface with smoking somewhat analogously. Of course one could argue that a better base analogy might be offered. For example, one could contend that musicianship might be a better base analogy for creative writing. Similarly, one might contend that eating disorders might be a better base analogy for

[1] Percentages are based on reported percentages in the two reports and calculations when only raw data were presented.

pornography addiction given the elements of choice. Admittedly then, it remains to be seen if the smoking analogy as base is sufficiently compelling; it remains to be seen if it actually fits with the elements of the various targets.

Drug abuse		Pornography addiction
Alcoholism	Smoking	Adultery
Eating disorders		Homosexuality
Suicidality		Musicianship
Pet preference		Creative writing
Gambling		Heterosexuality
Beliefs		Athletic prowess

Figure 1. Various Constructs That Could Function as Targets for the Smoking Analogy Base.

The smoking analogy is proposed as functional and informative for various comparable orientations (i.e., suicidality, eating problems, sexual paraphilias, musicianship, obsessive writing, and so on). However, the foremost view being advanced here specifically is that the smoking orientation, or habit, provides an informative analogy for a sexual orientation. Other targets are secondary, but this is for logistical purposes rather than their lesser import. The analogy warrants consideration on multiple fronts. It warrants consideration with reference to sexual orientation, specifically. It warrants consideration with reference to other targets, generally.

On the topic of sexual orientation, the smoking analogy, it is argued, is the best analogy of all those which have been advanced, particularly for the homosexual orientation. Both the smoking orientation and the homosexual orientation have a broad literature base. Thus, this is an analogy that can be tested, or examined, by comparisons that are: (1) literature-based (the biological, psychological, and sociological conceptual and theoretical literature), (2) empirically-based (the research in the hard and soft sciences), and (3) story-based (biography, autobiography, narratives, and journalism). More fashionable analogies for a homosexual

orientation (e.g., left-handedness, ethnicity, race, animal behaviour, pet preferences, and so on), arguably fall short of the smoking analogy.

Handedness as a Primary Competing Analogical Base For A Sexual Orientation?

Handedness, being universal (i.e., left, right, or ambidextrous), and a biological commonplace, seems to be a "friendly" and normal analogy—more gracious than smoking. But even the analogies that Goldberg (1991) offered for homosexuality (e.g., necrophilia and coprophilia) are amenable to a system for categorizing, as described above, with respect to normalcy and causality. While mapping from a base like necrophilia to a target like homosexuality may be analogically adequate, and logically adequate, as framed by Goldberg, such mapping automatically becomes suspect with respect to rhetoric—suspicions of inflammatory rhetoric from the analogical target community, the homosexual community, will understandably arise. On the other hand, a milder analogy with race, for example the "black" experience, can raise ire as well. It is not unusual that a particular racial community would react if the analogy is pressed into service as an analogical base for the homosexual target, as has been addressed by Irvine (2001).

Even more popular analogies for sexual orientation, analogies like culture, or as addressed here, left handedness, raise key questions. For example, is the analogy adequate for mapping from base to target in terms of causality? Or, is the analogy adequate for mapping from base to target in terms of normalcy? Is left handedness as fitting as race as an analogy? Is left handedness as fitting as culture as an analogy? Is left handedness as satisfactory—as powerful—as smoking as an analogy?

Consider causality. Does left-handedness display a normal cause and therefore map onto homosexuality with respect to a parallel normal cause? In one sense no, if the shift from a biological body-plan for right-handedness is altered by an adverse prenatal hormonal

environment that interferes with the neurological wiring for handedness (Geschwind & Behan, 1984), or pathological damage that drives left-handedness (Bakan, Dibb & Reed, 1973; Satz, 1972). These are not normal causes in terms of proper function, but they might be considered normal in terms of commonality.

Again, does left-handedness display a normal cause and therefore map onto homosexuality with respect to a parallel normal cause? In a sense, yes, there might be a case for normal causality if asymmetry fixation occurs early (before day 14) and is, "…determined by structures and information already present in the gametes, placed there under control of the parental genomes" (Boklage, 1984, p. 207). That is, if the cause is genetic, then the cause might be more amenable to the label "normal." Actually, a case for the environmental cause of left-handedness (e.g., increased testosterone in the prenatal hormonal environment, or minimal brain damage, or other pathological determinants), as opposed to a genetic cause, might be considered quite strong by some as an appropriate analogy for homosexuality. Such advocates might favour this line of thinking given the problems associated with arguing a genetic cause, problems like: (1) the quite low concordance rates for left-handedness in monozygotic twins of about 15-20% (at least when compared to higher concordance rates for smoking, for homosexuality, for ADHD, for eating disorders, for suicidality, and so on), (2) the peculiar concordance similarity between monozygotic and dizygotic twins which is difficult (but not impossible) to explain in terms of genetics, and (3) the theoretical difficulty in formulating an acceptable genetic model (Beaton, 1985; Springer & Deutsch, 1989).

While there are interesting genetic models attempting to explain left handedness (e.g., Annet, 1964, 1974; Levy and Nagylaki, 1972), they are not sufficiently compelling at this point to instill confidence. More recent models seem to carry some weight initially in favour of a genetic cause (a single gene) and are offered as a dextral-chance (DC) model (McManus, 2002),

or a "random-recessive" model (Klar, 2003). The models offered do find support in the numbers. And investigations of certain groups can offer a test of a genetic explanation, for example, by looking at the offspring of certain categories of left-handed individuals, right-handed individuals who have a left-handed twin, and those that show counter-clockwise hair-whorls (Klar, 2003). The results offer intriguing support for a single gene model (with a recessive and non-functional allele). The R gene is the cause of right-handedness but the recessive allele confers a 50:50 chance of becoming right-handed or non-right-handed. Yet, as McManus expresses it: "By now it should be clear that I believe people are right- or left-handed because of the genes they carry. Certainly that seems to be the most parsimonious way of accounting for a mass of data, of which it is otherwise difficult to make coherent sense. Of course, just because a model *fits* does not mean it is necessarily correct. In the modern world, the real proof that handedness is due to a gene will come from the isolation of a sequence of DNA that differs systematically between right- and left-handers (McManus, 2002, p. 178)."

Likely, left handedness is an abnormality with respect to cause, but, even if one considers the above causes (pathological, environmental, or genetic) either definitely normal, or relatively normal, there still exists the social or cultural judgment about left-handedness. In the distant past, left-handedness had been viewed as abnormal, and with suspicion. Even in the more recent past it was viewed as abnormal and efforts were made to alter left-handedness in the developing child. In current societal views it seems left-handedness is considered to be largely innocuous and normal (or relatively normal). In effect, normalcy is not really a part of the social conversations one encounters on left-handedness.

In more academic discussions, however, the research is pushing some groups to keep interesting ideas on the table related to left-handedness and problems. For example, there are concerns about auto-immune problems, shortened lifespan, depression, and learning problems

(see Denny, 2009; Geschwind & Galaburda, 1984; Lengen, Regard, Joller, Landis, & Lalive, 2009; Watkins, no date), although not without challenges by critics (e.g., McManus, 2002).

One interesting problem that has surfaced relates to sexuality. There is the report of Cantor, Klassen, Dickey, Christensen, Kuban, Blak, Williams, & Blanchard (2005) noting a link between left-handedness and pedophilia. The authors do distinguish theoretically between pathological "non-right-handedness" and normal "non-right-handedness," but they don't make the empirical distinction in their research. To quote from their Abstract: "The odds of non-right-handedness in men offending predominantly against prepubescent children were approximately two-fold higher than that in men offending predominantly against adults and three-fold higher after eliminating those men with intrafamilial (i.e., incest) offenses. Handedness differences between men erotically interested in males versus females were not statistically significant. These results indicate that the rates of non-right-handedness in pedophilia are much larger than previously suggested and are comparable to the rates observed in pervasive developmental disorders, such as autism, suggesting a neurological component to the development of pedophilia and hebephilia (p. 447)."

Biological causes of orientations, whether lateralized behaviours, lateralized structures, sexual orientation, left-handedness, or smoking, are considered normal, or somewhat normal, if "…determined by structures and information already present in the gametes, placed there under control of the parental genomes." If alterations in the plan occur as a result of environmentally-driven influences (mildly abnormal), the results may be considered normal if the effects are negligible or trivial (from select perspectives, such as, practical, pragmatic, moral, cultural, and religious perspectives), but abnormal if the cultural paradigms (social norms, religious dogmas) so determine, or if the academic theories so suggest. As noted above with left-handedness, the

popular view might be that left-handedness is a trivial difference and at best mildly abnormal, if not normal.

Historically, given the Latin root for "left" (i.e., sinister) it is a small step to the etymologically-based conclusion that some in the past viewed an orientation to left-handedness as abnormal, and even sinister. Clearly, though, judgments about normalcy change over time. They change as a function of context (e.g., popular media vs. scholarly journals), change as a product of a worldview (religious vs. naturalism), change as a function of the growth of knowledge (common sense and theory), and change as a function of ideology (politics, propaganda, prevalence, etc.). Currently, left-handedness is considered trivial, even "normal," albeit still open to academic, empirical, and theoretical consideration.

Smoking vs. Left Handedness as The "Better" Analogical Base for Homosexuality

Similar vicissitudes are evident with the smoking orientation (once socially normal, now bad) as those which emerged when considering left-handedness (once bad, now socially normal). Culturally, a smoking orientation was at one time quite fashionable. Today, it is viewed with disdain by the majority. Now smokers are marginalized and even ostracized at most societal levels. The behaviour is viewed as "abnormal." However, smoking can be quite fashionable still, at least for the romanticized "outsiders" and the youthful rebels.

Today's fashion can be tomorrow's folly, and vice versa. Words—whether abstract, conceptual, or descriptive of behaviours—when used, are semantically fluid, and what appears to be lexically-locked at one time, shifts or even reverses polarity at another time. "Smoking" may have conjured romanticized notions in the not-too-distant past, whereas today a more rasping image unfurls for a smudged, or smug, majority. A similar shiftiness is seen with left-

handedness; it may have been sinister in the past, but today "lefties" in some fields (e.g., baseball) are among the admired rather than the mired.

What's the question in focus here? Analogically, is smoking a better comparator for sexual orientation than left-handedness? The answer would seem to be "yes," if one acknowledges a similar scope of environmental determinants for a smoking orientation and a sexual orientation—that is, psycho-social environmental determinants which would overshadow any bio-environmental determinants. This is clearly not the case with left-handedness. Environmental determinants of left-handedness are bio-environmental, and of a physical class tied to a prenatal hormonal environment, neurological damage, or physical accidents that impact right-hand usage.[1] In fact, the psycho-social environment is pretty much mute with respect to influencing handedness.

[1] Perhaps the strongest arguments against left-handedness as an analogy for homosexuality are: (1) the absence of a comparable genetic influence (evident in a lack of concordance in monozygotic twin studies), (2) the moral and social triviality of left-handedness, and (3) the absence of non-physical environmental determinants of left handedness.

Nevertheless, the argument for the left-handed analogy has been advanced (see Chandler Burr, no date). Some of the problems with the argument he offers can be flagged with a series of questions. In the text block here one can see the 14 points that Burr lists for building a profile of

> 1) This human trait is referred to by biologists as a "stable bimorphism"— it shows up in all human populations as two orientations— expressed behaviorally.
>
> 2) The data clinicians have gathered says that around 92% of the population has the majority orientation, 8% has the minority orientation.
>
> 3) Evidence from art history suggests the incidence of the two different orientations has been constant for five millennia.
>
> 4) The trait has no external physical, bodily signs. That means you can't tell a person's orientation by looking at them. And the minority orientation appears in all races and ethnic groups.
>
> 5) Since the trait itself is internal and invisible, the only way to identify an orientation is by observing the behavior or the reflex that expresses it. However—and this is crucial—
>
> 6) –because the trait itself is not a "behavior" but an internal, invisible orientation, those with the minority orientation can hide, usually due to coercion or social pressure, by behaving as if they had the majority orientation. Several decades ago, those with the minority orientation were frequently forced to behave as if they had the majority orientation— but internally the orientation remained the same and as social pressures have lifted, people with the minority orientation have been able to openly express it.
>
> 7) Clinical observation makes it clear that neither orientation of this trait is a disease or mental illness. Neither is pathological in any observable way.
>
> 8) Neither orientation is chosen.
>
> 9) Signs of one's orientation are detectable very early in children, often, researchers have established, by age two or three. And one's orientation probably has been defined at the latest by age two, and quite possibly before birth.
>
> These data indicated that the trait was biological, not social, in origin, so the clinicians systematically asked more questions. And these started revealing the genetic plans that lay underneath the trait:
>
> 10) Adoption studies show that the orientation of adopted children is unrelated to the orientation of their parents, demonstrating that the trait is not created by upbringing or society.
>
> 11) Twin studies show that pairs of identical twins, with their identical genes, have a higher-than-average chance of sharing the same orientation compared to pairs of randomly selected individuals; the average rate of this trait in any given population— it's called the "background rate"—is just under 8%, while the twin rate is just above 12%, more than 50% higher.
>
> 12) This trait's incidence of the minority orientation is strikingly higher in the male population— about 27% higher—than it is in the female population. Many genetic diseases, for reasons we now understand pretty well, are higher in men than women.
>
> 13) Like the trait called eye color, the familial studies conducted by scientists show that the minority orientation clearly "runs in families," handed down from parent to child.
>
> 14) This pattern shows a "maternal effect," a classic telltale of a genetic trait. The minority orientation, when it is expressed in men, appears to be passed down through the mother.

a trait. Several of these points can be questioned at a face-value level. Such challenges present a assessment of the analogy showing significant problems mapping *elements*, *structure*, and *relations* from the base to the target in the analogy.

First, in point #1 Burr refers to the trait, left-handedness, as a "stable bimorphism" that is cross cultural, showing up as two orientations, and expressed behaviourally. A question that can be raised here concerns the notion of two orientations. In fact, research concerned with issues of laterality (either directly or as a correlate) posits that there are degrees of handedness. This would evidently argue against two orientations. In fact, the Edinburgh Handedness Inventory (Oldfield, 1971) is a commonly used measure of laterality in neuropsychological research where laterality is an issue. The inventory gives a laterality score for handedness across a substantial range of scores which is indicative of substantial variability in laterality. For a fuller discussion on the range and complexity of left-handedness see McManus (2002).

Of course this does not defeat the analogy with homosexuality as there are those who advocate degrees of homosexuality as well (e.g., the seven-point scale of Kinsey, Pomeroy & Martin, 1948). So, to be truer to the left-handed analogy it might be more appropriate to define the homosexual as "not-heterosexual," much like those who define their research groups as right-handed (RH) and not right-handed (NRH) (e.g., Klar, 2003). This practice, however, raises questions about various causes (genetics, abnormal hormonal environments, intrauterine crowding, birth trauma, minimal brain damage, even learning)—a situation not particularly amenable to a genetic explanation. At best, there might be a case for a genetic influence. What is relatively clear is that left-handedness and homosexuality may not be comparable examples of the "stable bimorphism" suggested.

With respect to his third point, it isn't clear how art history demonstrates this incidence. Does it have to do with brush stroke angles for example? Or is it the sexualized actions portrayed in the art scenes? Nor is it clear how the stability, or change, in incidence would impact the analogy. If the issue here relates back to the "stable bimorphism" demonstrating

normalcy, would this also analogically parallel murderers/non-murderers, zoophiliacs/non-zoophiliacs, philiacs/necrophiliacs, and so on. In essence, does his point prove too much?

His point #7 invites a few questions. First, is there a case to be made that a pathological cause justifies the label pathological? There are some who argue the cause of left handedness is pathological (e.g., Bakan, Dibb & Reed, 1973; Satz, 1972). Second, if there are disease correlates associated with left handedness does this present a challenge to the analogy? There are some who contend there are disease correlates with left handedness (Geshwind & Galaburda, 1984; Watkins, no date). Moreover, Cantor, et al (2005) note the link to non-right-handedness and pedophilia, which leads them to infer neurological implications that they compare to autism and Down syndrome . Third, if there are analogous parallels for the left-handedness argument to more suspect orientations, such as Zoophilia for example (Miletski, 2005a; Williams & Weinberg, 2003), does this argue for caution, and against the point? Fourth, if correlates of the minority orientations are high with respect to addictions, suicidality, depression, and so on, would this "co-morbidity" be evidence or argument against the point made? I think so.

His point #8 denies choice for both minority orientations. One doubts there is a camp that argues that left-handedness is a choice, clearly. But is there a camp in the homosexual community that argues for choice? Yes (see Stein, 1992). Are there any psychological arguments to be made for choice? In the current essay a case is made for a serious, logical, and rational argument in favour of choice, not simple choice, but rather free choices of differing calibers at various choice-points in the development of various orientations (see Chapter 3).

His point #9 regarding detecting a sexual orientation as early as two or three seems to have merit. It is also one of the apparently non-alignable characteristics of the smoking/homosexuality analogy. However, it may not be all that convincing upon further

investigation, as there is an alternate argument for consideration. See the "The Memory of Early 'Love' Is A Different Love" in the subsequent essay on Entrenched Learnings (Volume III).

His point #11 fails to point out: (1) the relatively low left-handed concordance rates for monozygotic (MZ) twins (say 15 to 20%), and, more importantly, (2) failure to detect a difference between MZ and dizygotic (DZ) twin rates. Both points would argue against the left-handed/homosexuality analogy. This is not the case with the smoking/homosexuality analogy. While there might be a way to explain this left-handedness genetic anomaly (e.g., mirror imaging in some MZ twins, that is, about 25% of monozygotic twins are reported to be of the mirror-image type), on the surface it raises grounds for suspicion with respect to the left-handed analogy.

There is a much more friendly case for comparable biological and environmental determinants (the psycho-social environment, and perhaps the physical environment) for smoking and sexual orientation. Smoking seems to be the better analogy when all things are considered.

If so, the value of addressing the constellation of correlates (environmental, biological, and willful) for the smoking orientation and the sexual orientation would be more appropriate than using left-handedness and sexual orientation. Moreover, smoking is a minimally offensive analogy, it has a literature base linking the behaviour to both biological and environmental influences, and there are likely personal stories with developmental, social, and cultural parallels that one could draw upon. Moreover, it is not a unique suggestion as an analogy since at least one psychiatrist (Satinover, 1996), currently advances the notion of a parallel between homosexuality and addictions[1]; and the notion is at least as old as the second century CE, since

[1] Satinover (1996) uses a metaphor to illustrate the point. In the fable, a bird makes a bargain with the devil, exchanging a couple of feathers for a couple of worms. Initially, there is no harm done and the bird can fly like the best of them. But after repeating the bargain, over and over, the bird gains weight and loses more and more feathers. Eventually, there are too few

Soranos characterized tribades as addicts with comparisons to alcohol addiction, and he implies human responsibility, in part, along with entertaining custom and heredity in the etiology (for a discussion see Brooten, 1996, pages 146-162).

With respect to orientations then, there are two questions that emerge here: (1) Is an orientation determined by the "…gametes, placed there under control of the parental genomes" and therefore part of a design-plan? or (2) Is an orientation determined by environmental influences (either damaging the design plan, or acting alone, or acting interactively with biology and personal agency)? If an orientation is determined by environmental causes, either in whole or in part, there are additional questions to be asked. Is the genesis of an orientation normal or abnormal? Is the consequence to be considered as normal or abnormal?

Considering the latter questions at this point, a key issue logically emerges: What determines abnormality? Jones and Yarhouse (2000) list four empirical criteria: statistical infrequency, personal distress, maladaptiveness, and deviation from social norms (which would likely include religious norms for those drawing upon a religious world view). These criteria arguably apply in a similar fashion to both the smoking orientation and the sexual orientation, though there would no doubt be disagreement in some quarters regarding "personal distress" and "maladaptiveness." However, the disagreements would be similar. That is, quite likely, some homosexuals, like some smokers, would report "personal distress," some wouldn't. Similarly, some research studies, quite likely, would report "maladaptiveness" for homosexuality and smoking; some wouldn't.

Thus, two orientations are advanced analogously at this point—a potential smoking orientation indicated by a practice of habitual smoking early in one's life course, and a potential sexual orientation indicated by a "concern" regarding one's sexual orientation in that same time

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feathers left to fly, and too much weight to lift. Is the bird choosing not to fly? No? Is the absence of choice, at this point, in any way linked to earlier choices? It seems to fly in the face of reason, to say, "no."

frame.[1] Specifically, the correlates of a concern regarding a sexual orientation and a smoking orientation can be examined. Such a pursuit is linked to the logical connection between the two orientations and the possibility that one can serve as an analogy for the other—a *logical rationale*. It remains to be seen (or considered), in the eyes of the reader, whether or not smoking is a better analogy to homosexuality than left handedness, skin colour, ethnicity, the various paraphilias, or other analogies.

Homosexuality As Target In The Analogy

Biological Influences -- For A Homosexual Orientation

The biological basis for a sexual orientation is assumed to be strong. But, the evidence for a biological basis for various sexual orientations, like a homosexual orientation, is weaker than popular opinion, and the popular media, would suggest. At best, this evidence is non-existent with respect to a deterministic position, and mildly indicative, with respect to a position of influence. Nevertheless, certain biological factors do appear to be instrumental in leading to tendencies or trajectories in a particular homosexual or bisexual direction.

The hypotheses that *adult hormones* are implicated in sexual orientation have both an empirical underpinning, and an inherent logic, to them. If behaviour and development are influenced by hormones one would expect such correlates to be evident. However, the notion that homosexuals differ from heterosexuals with respect to hormones and hormonal levels has not garnered strong advocacy, given the methodological problems in this research domain (Gooren, 1988). Homosexuals do not appear to differ with respect to hormonal levels when

[1] Admittedly, a "concern" regarding ones' sexual orientation is at best a precursor to a later sexual orientation. Thus, it is used here as a proxy in this case for sexual orientation. Likely, in light of current incidence levels for lesbianism, a 10.5% figure for adolescents expressing "concern" (see, for example, Remafedi, Resnick, Blum, and Harris, 1992) would drop to approximately 2% in terms of an adult self-identified, homosexual orientation. By analogy, moreover, the incidence of smoking decreases with maturity, as well. A report in Health Living notes that in 2004-05 21% of early adolescents had tried tobacco but only 2% of youth reported they were current smokers, an interesting comparable statistic in itself given the rates of homosexuality in a population.

methodological conditions are addressed. While there may be a subset in the lesbian population that has high levels of testosterone, it has been suggested that this also could be the result of sample selection bias or differential physical exercise patterns (Gladue 1988; Jones & Yarhouse, 2000).

The hypothesis that *prenatal hormones* influence sexual behaviour and possibly orientation is a stronger hormonal hypothesis than the adult hormone hypothesis. This inference can be drawn, in part, from animal studies where animal fetuses are exposed to either feminizing or masculinizing hormones. Effects related to brain structure differences (Diamond, 1979) and sex-specific behaviour patterns (e.g., lordosis in male rats and mounting in female rats) are evident. This hormonal influence on (1) certain architectural features of the brain and (2) certain sex-related, hard-wired behaviours is, at least, suggestive of a hormonal influence that can impact behaviour in humans as well.

Early studies of the *prenatal hormonal hypothesis* by Dörner and his associates were supportive, or suggestive, of comparable behavioural effects in humans linkable to homosexuality at some points (Dörner, 1976: Dörner, Rohde, Stahl, Krell, & Masius, 1975; Dörner, Geier, Ahrens, Krell, Münx, Sieler, Kittner, & Müller, 1980; Dörner, Schenk, Schmiedel, & Ahrens, 1983). More recently, however, it is clear that caution is the preferred position. Dörner's contention that prenatal stress, for example, would lead to hormonal effects on the brain development of the fetus, which would feminize the male brain thereby leading to an increased incidence of the homosexual orientation, was reasonable. It was reasonable given the effects of prenatal hormones on rat behaviours evident from empirical studies; however, the evidence offered by Dörner was tenuous. With Bailey's attempt to confirm Dörner's hypothesis in his dissertation, the hormonal hypothesis weakened dramatically. Bailey (a friend of the biological underpinning of homosexuality) writes: "I found no support for Dörner's theory that

men become gay due to prenatal stress (2003, p. 106).” Caution in making the logical leap is seen in comments like, “One must note, however, that there is no direct demonstration yet that the hormone-behaviour relationships seen in intersex individuals do, in fact, apply to the development of sexual orientation in nonintersex persons (Meyer-Bahlburg, Ehrhardt, Rosen, Gruen, Veridiano, Vann, & Neuwalder, 1995, p.13). The entire tone of the study by Meyer-Bahlburg, et al (1995) is cautious and tentative.

The earlier studies exploring *genetic influences* for homosexuality were supportive of a biological basis. Over time, and given subsequent methodological refinements, the substantive nature of these earlier studies has suffered attrition. The original study of monozygotic twins showed a 100% concordance for homosexuality (Kallman, 1952). Case closed? If one identical twin was homosexual, the other was homosexual as well. But this study fell into disrepute, and apparently was later termed a statistical artifact.

Subsequent reports by Bailey (one of the more prominent researchers in the field) and his team (Bailey, 1995; Bailey & Pillard, 1991; Bailey, Pillard, Neale, & Agyei, 1993; Bailey, Dunne, & Martin, 2000) have been supporting a heritable component but in a somewhat tenuous fashion. Support for a heritable component is a given for a philosophical naturalist and Bailey is a fundamental, biological determinist claiming “…all behaviours are ‘biologically determined’ in the sense that all events are caused, and behavioural events are caused by brain states which are ‘biological’ (Bailey, 1995, p. 104).” Thus, his expectation is clear even though his data lead in the direction of considerable environmental influence. In the first Bailey et al (1991) study of twins the concordance rate for monozygotic twins was 52%, for fraternal twins 22%, for brothers 9.2%, and for adopted brothers 11%. A similar pattern for females was evident with a concordance rate for monozygotic twins of 48%, for fraternal twins 16%, for sisters 14%, and for adopted sisters 6%. It looked like there was evidence for a genetic component, a genetic

influence, but not the genetic determinism that the Kallman (1952) study was indicating. However, equally intriguing in these data for males is the doubled rate for fraternal twins as opposed to brothers. How does this align with a genetic effect since fraternal twins and brothers should be genetically comparable? Does this speak of environmental influences? That is, the difference between brothers and fraternal twins is time, and the environmental changes, or vicissitudes, linked to time. Does a highly similar environment (e.g., fraternal twins) double one's likelihood of developing a homosexual orientation? Further, why is the rate for adopted brothers (11%) so much higher than the general population incidence of say 1 to 3 percent (Dawson, 1990; Fitti & Cynamon, 1990; Adams & Hardy, 1991)? Again, does this not speak of environmentally-driven influence, at least as a compelling component? These data would align more with an interactive model of influence.

An additional consideration about the genetic effects is introduced by close scrutiny of the studies which raises questions about the methodology. The samples are often drawn by advertisements in a gay community where participants might be sensitive to the intent of the study and the political value of demonstrating a genetic basis—a criticism noted by others (e.g., Jones & Yarhouse, 2000). Moreover, other studies do not provide consistent support for a strong genetic basis. Jones and Yarhouse (2000) noted that a study of twins reared apart (four female sets) where one was homosexual did not show any concordance. While this is a small sample set, it is part of the puzzle.

The more recent study by Bailey et al (2000) also shows attrition of the significance of the genetic effect since the concordance rate drops to 20% for male MZ twins and 24% for female MZ twins. Admittedly, this is still an interesting concordance rate and suggestive of a genetic influence; but, it is clearly mitigated.

The most recent study of concordance rates of twins is from Sweden (Långström, Rahman, Carlström, & Lichtenstein, 2010). This particular study is comparable to Bailey et al (2000). They used a large sample with 2320 MZ twin pairs (807 male and 1513 female) and 1506 DZ same-sex, twin pairs (517 male and 989 female). They reported probandwise concordance rates for MZ twins were even lower than those reported by Bailey et al (2000). For MZ twins the concordance rate was 18% for males and 22% for females for the variable "Any Lifetime Same-sex Partner." The four percent spread between males and females is similar to the four percent spread noted by Bailey et al (2000). On a second variable they termed "Total Number of Same-sex Partners" the concordance rates were even lower (male 5% and female 11%).

There does seem to be a potential problem in this study with respect to a definition of sexual orientation. It was loosely defined. A variable like "Any Lifetime Same-sex Partner" would capture bisexuals, early adolescent sex play, experimentation, curiosity, as well as those who might fall on a Kinsey scale of 0 or 1. Yet it is this variable that shows the results comparable to Bailey et al (2000). With an apparently more involved configuration "Total Number of Same-sex Partners" the even lower concordance rates (male 5% and female 11%) may be indicative of a stronger environmental influence. Indeed the authors acknowledge the importance of unique environmental influences; for example, consider the following list: "…prenatal exposure to sex hormones, progressive maternal immunization to sex-specific proteins, or neurodevelopmental instability…" (Långström et al. 2010, p.79). As environmental factors these could be important in their model building. It is puzzling, however, why they fail to consider non-biological variables (e.g., peers, culture, media, cognitive immaturity, curiosity, reward systems, learning, addiction, choices, and so on) in their environmental list of factors

tied to a "unique environment." Their data would seem to indicate that the environment is the most interesting focus.

One prominent research study (Hamer, Hu, Magnuson, Hu, & Pattatucci, 1992) which purported to show a genetic source for at least one subtype of homosexuality was proclaiming a link between DNA markers on Xq28 on the X Chromosome and sexual orientation. Subsequent discussion (in media, courts and academic venues) was dramatic, and likely premature, in spite of the cautions Hamer was proclaiming (see Hamer & Copeland, 1994, Chapter 13.) Hamer and Copeland were pointing out the need for replication and when replication was attempted by others, with a larger sample, it didn't support the original findings and report (Rice, Anderson, Risch, & Ebers, 1999).

Intriguingly, Hamer and Copeland (1999) went on to consider numerous behavioural links to genetics and one in particular is relevant for the current essay. They did address nicotine addiction, and the genetic predispositions to addiction, evident in the existing literature. Even recently, it seems Hamer was researching the genetic component to nicotine addiction (Hurst, 2007).Yet, suprisingly, there was never a parallel with sexual orientation even considered?[1]

[1] Hamer and Copeland (1999) had noted a "quit rate" (QR) from smoking of 7% "…in any given year" (p. 155) albeit a desire to quit near 80%. At first one wonders what the quit rate for homosexuality might be. Could it too be around 7%? Actually, it seems to be much higher. One web site (http://www.peoplecanchange.com/Is_Change_Possible.htm) reports on a review of 28 studies, and using Kinsey scale criteria (shifts from K6/5 to K0/1) change was evident for 18.56% of the cases (418/2,252). They also flag the NARTH studies which show even more dramatic change and the Spitzer study which reports "complete change" (for 19%) and "good heterosexual functioning" (for 60%) of his homosexual sample. The highest "quit rate" number reported was Masters and Johnson (1979), around 70%. In Throckmorton's (1998) review, all interventions (Psychoanalytic, Behavioural, Cognitive, Group Therapy, and Religiously Oriented) noted positive aspects and outcomes; however, the only statistics offered were for Psychoanalytic reports (ranging from 19-44% for rates of change). Revisiting the smoking QR, in the light of the homosexual QR statistics, a cursory look suggests comparable ranges or a better quit-rate for sexual orientation than for smoking. Boughton (2006) refers to the same high desire to quit smoking that Hamer notes (around 80%) but reports a 20% success rate which would align with the homosexual quit-rate. Jones and Yarhouse (2011) provide data supporting a quit rate of 9% for "Success: Conversion" which is comparable to Hamer and Copeland's smoking quit rate of 7%. Jones and Yarhouse also report a quit rate of 20% when two categories are combined to indicate behavioural cessation (successful reorientation, or chastity), which is comparable with Boughton's (2006) quit rate for smokers. A Northwest Territories NWT fact sheet reports a QR for Canadian adults at 47%, and for NWT adults at 37%. No doubt age, culture, sex, and so on, are variables that need to be considered, but the point being made here is that there can be a general, or rough, parallel between quitting smoking and "quitting" homosexuality. If the Masters and Johnson (1979) statistics are the best estimate, if anything, it may be easier to quit the homosexual orientation than to quit the smoking orientation.

Environmental Influences – For A Homosexual Orientation

As with the research on biological determinants of homosexuality, the evidence for environmental causes is similarly weak, at least in the sense of how compelling each environmental cause is seen to be (Lips, 2001). Freudian psychoanalytic theories have waned over the past few decades although there has been a resurgence of Freudian ideas within the recent past (Solms, 2006). One important study thought to refute a psychoanalytic approach to sexual orientation (Bell, Weinberg, & Hammersmith, 1981) did indeed seem to exonerate a "maternal-cause hypothesis." However, as Jones and Yarhouse (2000) note, there was a paternal-cause evident in the findings, "…considerably more homosexual males reported fathers who were detached or not affectionate than did heterosexual men, and 48% of white homosexual males reported negative feelings such as anger, fear or resentment toward their fathers, as compared to 29% of the heterosexual sample" (p. 56). It would seem the inferences from such research need to be considered carefully rather than polemically.

Sex-typed behaviours, and cross-gender behaviour, early in life do seem to characterize some individuals who later show the homosexual orientation (Bailey & Zucker, 1995; Zucker & Bradley, 1995). The Bailey and Zucker study is a meta-analysis of 41 studies generating 48 effect sizes related to retrospective reports of cross-gender behaviors in childhood. The mean effect sizes were dramatic (males = 1.31; females = 0.96). Conceptualized another way, "The male distribution indicated that 89% of homosexual men exceeded the heterosexual median and only 2% of heterosexual men exceeded the homosexual median. There was slightly more overlap for women: 81% of homosexual women exceeded the heterosexual median, and only 12% of heterosexual women exceeded the homosexual median" (Zucker & Bradley, 1995, p. 27-28). Some see a strong biological influence here, while others are reluctant to rule out environmental influences.

Albeit striking, the possibility of environmental determinants should not be ruled out. Zucker and Bradley (1995) refer to a suggestion by Lothstein (1983) who "speculated that parents who had been influenced by the cultural Zeitgeist to use 'non-sexist' socialization techniques may have inadvertently induced gender identity conflict" (p. 30). Perhaps, but this doesn't resonate as particularly compelling on its own. Yet, there may be a case for parental complicity if not parental cause. To illustrate, in a case study presented by Zucker and Bradley (1995) a six-year-old girl is described as, "…her hair was short and styled in a fashion more culturally typical of boys than girls. From the style of her hair and her clothing, a naïve observer would have judged her to be a boy" (p. 13). Interesting! But surely an equally interesting question regarding parental complicity could arise here as well. Given that the child is a six-year-old, would this not be indicative of parental influence, or parental abdication, at least in part, as opposed to attributions to a child's biologically-driven and self-selected grooming habits? Parents are in control of appearance, grooming, and attire for six-year-olds, as a rule.

Parental control was recently a hot topic regarding the boy Thomas Lobel as reported in the Daily Mail (Daily Mail, 2011). Thomas was an eight-year-old boy who wanted to undergo a sex-change procedure. Now, at age 11, his lesbian parents have implemented hormone-blocking treatment to prevent puberty as a male. What is the parental influence here? Something seems amiss here, for the miss.

Furthermore, since approximately one quarter of people (males) with a history of gender-identity disorder do not report a homosexual, or bisexual, path in late adolescence or adulthood (see American Psychiatric Association, 1994, DSM 4th edition, page 536), causality would seem to be somewhat mitigated, as a conclusion. Such observations may not be defeaters of the argument for homosexuality from "sex-typed behaviours, and cross-gender behaviours," but they do raise cautionary flags and point to correlations, at best.

Likewise, treatment effects raise cautionary flags. Maxmen, Ward and Kilgus (2009) cite the case of Carl, an eight-year-old with a four-year history of cross-gender identity problems (female voice inflection; conversations were on female topics like cosmetics, dresses, roles, delivering babies; effeminate gait; preference for girls' toys and dolls; teased by other boys as a "sissy" or "queer"). Following behavioural treatment involving the clinic, the home, and the school "…Carl's gender role behaviors became normal compared to other boys, and he developed a normal male identity (p. 471)." This is different from the case cited earlier by Zucker and Bradley (1995) of a six-year-old girl, in that, with respect to Carl the parents intervened. In effect, parental power and influence is assumed to be an important determinant. Moreover, it does help to keep such a story in mind when reading a text like Bailey's (2003) analyses of femininity in males. One black swan encourages cautious reading.

Other environmental correlates of gender identity problems relate to abuse (Laumann, Gagnon, Michael & Michaels, 1994; Shrier & Johnson, 1988), early, same-sex, sexual activity (Manosevitz, 1970), and even possible cultural influences, at least for Constructionists (see Stein, 1999). Perhaps, one of the most intriguing environmental determinants is seen in Hamer and Copeland's (1999) reference to one of their collaborators (i.e., Pattatucci) collecting family data on lesbians. The sister of a lesbian had a six percent chance of being a lesbian, whereas, the daughter of a lesbian had a one-in-three chance of being a lesbian. Does this flag parental influence? Does this permit an inference of environmental effects (even cultural transmission) as opposed to strict inheritance?

Children and adolescents, parents, researchers, teachers, and counselors find themselves wrestling with the topic of the nature and determination of sexual orientation when it arises personally or professionally. Individuals are left to base their responses on a collection of correlates and a personal philosophy or worldview. If one's worldview can be characterized as

philosophical naturalism (or humanism) then the orientation along with the causes are strictly natural. Any question of abnormality is based on statistical abnormality, personal distress, maladaptiveness, or cultural norms. If one subscribes to a religious worldview there is a different response. This is the case even if one adopts methodological naturalism concurrent with their religious worldview. Here there is an additional criterion for abnormality to be considered—a criterion which is tied to theology (cosmology, purpose, revelation, design, teleology, and so on). In this latter configuration there would be disagreements about abnormality with more conservative worldviews (religious worldviews) seeing breaks from design and teleology, whereas, more liberal worldviews (naturalism and humanism) might tilt towards simple description, or acceptance of varieties of relativism. A third group, with a foot in both camps, would be the methodological naturalists. They adopt naturalist principles for applied purposes, but they could hold to a religious worldview at a philosophical level. Thus, their arguments are contextualized and layered. It helps to know where one is coming from in a discussion that has worldview contexts and implications.

How does one extend tolerance to a worldview? How do worldviews function in a co-existing manner? Whether one is considering Luther's "the kingdom of God" and "the kingdom of man" or Augustine's "two cities," there are expectations of peaceful and functional coexistence. So, civility, argument and protection from unjustified harm would be a good first step to extending tolerance to a worldview. One issue then becomes one of justification of harm; how do we determine justified harm, and distinguish it from unjustified harm? What ethical principles would be operative here? Whose morality prevails, the naturalist, the Moslem, the humanist, the Christian, the pragmatist, the syncretistic?

Logically, and morally, there is a need to protect positions of diversity. When an ethicist like Somerville (2009) contextualizes diversity with terms like "harm," "good," and "moral

regret," there is an attempt to attain balance—a balance between individualism and community concern, a balance between the secular and the religious, a balance between science and religion, a balance between religion and religion, and a balance between freedom and restraint. Balance is important.

The struggle for balance is complicated, especially when harm is involved. As civilized human beings, as non-pathological human beings, harm is something we normally regret. Somerville's notion of "moral regret" is seen in her illustration: "It requires that when, for reasons of ethics, something we do or stand for offends or hurts others—for instance, my opposition to same sex marriage—we should deeply regret that our doing so causes others pain (Somerville, 2009, p. 4)." Yes, there can be pain and harm. Nevertheless, her specific concern seems to be the potentially greater harm done to "…freedom of speech, freedom of association, freedom of conscience, and academic freedom… (p. 4)." She has a point. We need to be cognizant of a hierarchy of harms and include the notion of "lesser evils" and "greater evils" in our determinations.

Probably, the wisest scholarly approach to the issue of orientation, given the current state of knowledge, is to acknowledge correlates as potential determinants, and continue to build profiles and databases. This would apply whether the correlates are biological, environmental, or willful. The best course of action, however, awaits further argument, evidence, and experiment (social, natural and laboratory experiments). The better course of action acknowledges environmental influences, intentionality, choices, and change, without forgetting the biological influences. This holds for a smoking orientation, a sexual orientation, eating problems, suicidality, and more.

Since some of the correlates or potential determinants of sexual orientation may be considered politically incorrect and controversial, there is a need to tread lightly, in a

considerate manner, with care in mind, creatively, and yet, …courageously. To elaborate, the homosexual community is gaining a more acceptable profile in the larger community now, when compared with previous decades. One prominent venue of support is media support (e.g., TV sitcoms, film, editorial reporting, "coming-out stories" of high profile individuals, and so on). The popular media support is influential, and logically leading popular opinion. In fact, and interestingly, one could ask from a constructionist perspective: could this media image and support, as a positive correlate, itself be a potential determinant? Essentialists would answer "no," attempting to defuse "conservative" concerns, at one level perhaps. But more likely they would answer "no" to align their answers with essentialist dogma. On the other side of the coin, one suspects that constructionists could answer in the affirmative. Indeed, if there are fewer negative repercussions more people might find it easier to opt for a particular homosexual path particularly if the homosexual "outlet" is viewed as a path of lesser resistance, greater reinforcement payoffs, or easier access.

Multiple-perspective-taking requires an acknowledgment of the essentialist position and the constructionist challenge, with a preferential option for the stronger position. Unfortunately adolescents are not usually in a position to assimilate both sides of an issue and are likely to default to the media position, or the popular position, specifically, essentialism. It would be reasonable to expect young people to question their sexual "orientation" in the more prominent and favourable light of a contemporary "cultural" context, rather than the more academic psychological and biological context. If so, media could indeed be a principal determinant, if not a principled determinant.

It is probably safe to say that this media influence has left the public at large, not just the adolescent, with the belief that homosexuality is quasi-normal if not "normal." What makes the popular opinion of "normalcy" popular is: (1) the notion that homosexuality is biologically

determined, (2) the notion that our culture says it is okay, (3) the notion that those in control of the information flow say it is okay, and (4) the media models which appear to popularize homosexuality.

Yet homosexuality is viewed by many in a negative light. In a study from the early 1990s it appeared that more than 80% of adolescents had some "problem" with homosexuality (Pesman, 1991), as did the majority of psychiatrists who were surveyed shortly after the delisting of homosexuality from the DSM categories in 1974 (see Bayer, 1981, p. 167), as well as a sampling of international psychiatrists, somewhat later (American Psychiatric Association, 1993). Laumann et al (1994) note that prior to their survey (i.e., from 1972 to 1991) the General Social Survey data showed that over 70% of the adult population in the US reported that "homosexuality is always wrong." However, 10 years after the Laumann et al (1994) claim we see that by 2004 this percentage had dropped to 56.1%, still a majority but indicative of a substantial shift and trend.

Regardless of the popular media opinion favouring a biological basis for homosexuality, and the general population's shifting away from the moral view that homosexuality is always wrong, the scholarly support for biological determination is more tenuous, more controversial, and more flawed than the media presents. Interestingly, researchers who operate from a position of philosophical naturalism—and are convinced that all behaviour has a biological genesis or substrate—are at the same time tentative. Bailey (in Bailey et al., 1995), an advocate of a biological explanation, expresses it as: "Indeed, even most researchers, who are engaged in, or otherwise sympathetic to, a biological research program freely admit that neuroendocrine or genetic hypotheses about sexual orientation have not been supported to a degree of certainty that would justify their acceptance" (p.126). When referring to twin studies he acknowledges that "the high rate of discordance among MZ twins, shows that environment must exert an

influence" (p. 129). Similarly, Byne and Parsons (1993) seem convinced of biological determinants, and the inadequacy of biological data. They too suggest an interactionist model that involves biological determinants, along with familial, personality, social and self-constructivist activity that leads to multiple developmental pathways.

An emphasis on the relationship between genes, environment, developmental paths, and the interplay between them is not abnormal in the academic community; in fact, such interactions are argued for in specific areas, and are seen to apply generally where genetic influences are a focus (Rutter, 2002). These interactions do seem to support frameworks consistent with a social constructionist approach at least in part (Laumann, et al., 1994). As well, these interactions could be seen as an acknowledgement of the validity of constructionism in the interactions (Stein, 1992, 1999; Weinrich, 1992). Acknowledging that environmental factors do exert an influence on orientation (along with, and to a lesser extent, biological factors), it would behoove those who influence youth (parents, peers, teachers, counselors, therapists, etc.) to be sensitive to such possibilities. When the media message and the research literature do not align, it may be even more incumbent that the educational community fosters a reasonable and informed understanding and rendering for student consumption.

Thus, there are grounds for suggesting caution when adolescents question—both overtly and covertly—the developmental issue of sexual orientation, generally, and their sexual orientation, specifically. This would particularly be the case when there are co-existing characteristics related to depression, abuse, and suicidal ideation. Even characteristics like a lack of parental or community support could be addressed. Furthermore, since environmental determinants clearly cannot be ruled out as a causal influence, educators and counselors will need to be in a position to deal honestly with issues and questions that do arise. Examining such correlates, as potential determinative variables, allows for discrimination of those concerned

with their sexual identity and those who are not concerned, and would contribute to profile building in the interests of knowledge and persons rather than politics.

The Ethnic Analogy

Some analogies (e.g., race) arguably are too entrenched in the biological or essentialist camp to be useful for thinking beyond the level of propaganda or ideology. However, one variant of the race analogy—the ethnicity analogy—might have merit. As advanced by Epstein (1992) a discussion of ethnicity-as-analogy might be justified.

Such a discussion raises a framework (Race-Ethnicity-Culture) that serves as a caveat. Ethnicity is typically viewed as less fixed than race (genetic traits, physical features, etc.). Ethnicity would be addressing such constructs as language, history, diet, rituals, etc. While this conceptualization of ethnicity would be less "fixed" than race it would be more "fixed" than culture. Culture addresses variables like beliefs, attitudes, norms, values, etc. Is ethnicity more like race or more like culture?

When attempts are made to analogize ethnicity and homosexuality it is likely that the appeal is: (1) the apparent essentialism associated with ethnicity (on the racial end of the continuum) which would bolster a non-judgmental attitude, and (2) the expediency of an identity that has a history of oppression (e.g., ethnic groups like Blacks and Jews) which would bolster popular rights movements.

Such a framework, however, seems to support analogizing with culture rather than ethnicity on the race-ethnicity-culture continuum. Yet, even the culture analogy can raise political ire (Irvine, 2001). At this point, questioning the analogy, or thinking about the analogy, is advanced for the purpose of raising cautions.

Consider the scenario of a Chinese infant brought to Canada for the purposes of adoption by a young white Canadian couple. What is the ethnicity of the infant? Those who answer "Chinese" would likely be adopting either a biological view of ethnicity, thinking in terms of "race," or a primacy view of ethnicity, thinking one's primary biological substrate dominates in determining ethnicity.

Those who answer "Canadian" would be adopting a more sociological view assuming that one's environment drives both ascribed and acquired ethnicity which may contain elements of growth, voluntarism, acceptance, rejection or modification. Given the genetic evidence (Surgeon General's Report, 1999) contending that race is not a biological category, it is a small step to the idea that ethnicity and culture are sociological categories as well.

At one level, the notion of bi-ethnicity would be an appropriate designator for the Chinese child in the white home with the understanding that primary and secondary ethnicity may be temporal (time 1 versus time 2) or preferential (weaker versus stronger). Problematic ethnicity (e.g., displaced-, disjointed-, lost-, or alien-ethnicity) could surface later in life, as with the residential schooling phenomenon for First Nations groups in Canada where the imposed ethnicity (or secondary ethnicity in temporal terms) was rejected.

A conflict between an ascribed ethnicity (whether by others or self) and a preferential ethnicity could parallel the homosexual scenario. A person has an ascribed orientation originally (e.g., heterosexual) which would be primary; later a "felt" orientation could emerge (a secondary ethnicity, or homosexual orientation). The point being: there can be a secondary ethnicity, and by analogy, homosexuality could be a secondary orientation.

Rather than resolving the issue in terms of a bi-ethnic identity a person may opt for the preferred ethnicity, the temporal ethnicity (first or second), or the "felt" ethnicity—either the primary ethnicity or the secondary ethnicity. In both cases (secondary ethnicity and

homosexuality) we have a psychological phenomenon with a competition between feeling and knowing. Ethnicity, being a social construction or ascription, if applied to sexuality such a social construction or ascription would default to heterosexuality temporally and conventionally.

And if there is a clash, is the resolution found in affirming a primary ethnicity, a bi-ethnic identity, or a dysethnic label? Within an ethnicity/homosexuality analogy it would not be unreasonable to speak of a homosexual ethnicity (acquired, learned, felt, secondary-ascription, etc.) as secondary to the person's primary heterosexual ethnicity (teleology, ascription, etc.) and therefore constructionism rather than essentialism would be foremost.

An alternate manner of considering the analogy is in terms of deep and surface structure. Ethnicity is deep, culture is surface.[1] In view of this distinction culture would be the more appropriate analogy for homosexuality even though it is not the preferred analogy to gain political influence. In this configuration homosexuality aligns even more with constructionist views of homosexuality.

Against an essentialist view consider the following thought experiment: suppose that ethnicity is deep, perhaps even determined in part genetically, what would the concordance rate be for ethnicity in (1) monozygotic twins (100%?), (2) dizygotic twins (100%?), (3) brothers (100%?), (4) parent and child (99%?), (5) peers? One hundred percent, or close to it[2]. Such concordance rates do not parallel homosexuality, or smoking, and thus this thought experiment would argue against, or defeat, the ethnicity analogy at least in an essentialist form.

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[1] This deep-surface distinction may be a useful conceptual approach here. In language, after Chomsky, we think of languages as possessing a deep structure (a universal grammar) and a surface structure (the various language aspects culturally driven). Similarly, some think of conscience as having both a deep structure (synderesis) and a surface structure (culturally conditioned notions of the right). Likewise memory seems to have both a deep structure (e.g., there was an accident at Yonge and Eglinton, and the big vehicle went through a red light and hit the smaller vehicle) and a surface structure (witness # 1: "a Honda Pilot ran a red light and hit a Volkswagen;" witness # 2: "a small bus hit a Ford Prius as it was starting from a green light;" witness # 3: "a van wrongfully hit the car."). The surface details may differ but the deep level seems firm—there was an accident involving vehicles and something big hit something small, illegally. Cultural variability and relativity are found at the surface level, more so than at the deep level. Culture and homosexuality would be surface level; ethnicity and heterosexuality would be deep level.

[2] In effect, the concordance rates for ethnicity for MZ Chinese twins reared together and apart, would be indistinguishable from Chinese peers reared together and apart. Not so for sexual orientation and smoking, thus a defeater for the analogy.

Is it not the case that one's first ethnicity has priority? Adopted ethnicity, or ethnic immersion, could make one bi-ethnic conceptually. The homosexual in this formulation of the analogy would be heterosexual (primary ethnicity) and homosexual (secondary ethnicity)[1]. Thus, the political focus, and the ontological focus, on the homosexual in an ethnicity analogy, would be comparable to Blacks who have converted to "The Nation of Islam" (a secondary ethnicity) not Blacks who were born in the USA (a primary ethnicity). So, is there a difference between ethnic nature, ethnic identity, and ethnic behaviour (conscious and unconscious; self-selected and socially ascribed)? It's not clear that there is a difference sufficiently teased apart at this point.

One additional concern is the evidence that other traditional ethnic groups and cultures appear to find the use of ethnicity and culture by homosexual advocacy groups to be unsupportable and even offensive (Irvine, 2001). Given these problems, the ethnicity analogy needs several caveats to function effectively as an analogy for homosexuality; smoking, as an analogy, does not need these caveats. In view of this fact, smoking can be seen as the more useful analogy. This digression on the ethnicity analogy was long, but of interest as it may be the best competitor to the smoking analogy.

The Zoophilia Analogy

Acceptability.

An analogy that seems to have some current merit and is less problematic than the typical Goldberg (1991) analogies (analogies like coprophilia and necrophilia) is the analogy to

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1 Primary and secondary identities are relevant here. While the issue of primary and secondary identities does appear with ethnicity and an ethnicity analogy, there may be a clearer analogy with language. One's primary language would reflect a primary identity. Secondary identities related to secondary languages might be French as a second language, mathematical language, music-as-language, chess-as-language, and so on. These secondary languages do constitute an identity of sorts. The main problem with these analogies is there is no down side or moral negativity to such identities. However, more negative parallels can be seen in the language of the criminal, political language, foul language, rhetoric, lying, propaganda, advertising, and so on. On the one hand these secondary languages seem to be too weak to fall into a category of secondary orientations, but perhaps not. Perhaps language could serve as an analogy for homosexuality and smoking. Both may have systems of syntax, semantics, pragmatics, paralinguistics, sociolinguistics, and so on, providing a useful analytical tool.

zoophilia (used here as synonymous with zoosexuality). This seems to be the case now that zoophilia has been: (1) *sanitized* somewhat, with an ethicist weighing in on the issue in a less than condemnatory fashion (see Singer, 2001), (2) *humanized* somewhat, with reference to participants who report sex-with-animals along with their regular education level, normal careers, apparent normal mental health, attachments, love, and affection (see Williams & Weinberg, 2003), and (3) *normalized* somewhat, with Kinsey reporting for adolescents that about 6% of the total male population have been involved in sex with animals during early adolescence, dropping to about 1% over 20 years of age, unless they are part of an unmarried rural sample in which case the incidence figures drop from 11% to 4% at age 25 (Kinsey, 1948, p. 262)[1]. The accumulative incidence for females in pre-adolescence was 1.5% and in adults 3.6% (Kinsey, Pomeroy, Martin & Gebhard, 1953, p. 509).[2]

It's An Orientation.

In addition to the above mentioned markers for acceptability, there are arguments made that zoophilia (or zoosexuality) meets the criteria for an *orientation* (Miletski, 2005a), with historical and conceptual parallels to homosexuality (Miletski, 2005b; Beetz, 2005). Beetz, for example, comments on the notions of "sexual attraction," "love and affection," the proportions of participants who view the behaviour or attraction as "innate" (57.5%) or learned (17.7%), all of which offer conceptual parallels to the homosexual literature, at least in part. Such analogical parallels support arguments for both emotional and cognitive parallels at some level.

The Psychology of Consent.

[1] While the incidence levels from Kinsey are less than those levels for homosexual activity reported in the Kinsey data, they are comparable to more current estimates of homosexuality.

[2] Of interest, a group of university students (N = 424) were asked among other questions the following: "How much would it bother you to think about someone having sex with an animal?" A little over 92% responded that it would bother them "Some," "Some to a Lot," or "A Lot." After filtering out those who were reluctant to respond we see that 1.5% had no qualms, and 2.2% tended to have no qualms about this outlet (Daly & Morton, unpublished data). Thus, somewhere between 1.5% and 7.5% of an educated young adult population are not offended by sex with animals, numbers somewhat reminiscent of Kinsey. A crosstabs analysis showed 6.3% of the males unbothered and 2.5% of the females unbothered, Chi-square (1) = 3.55, $p > .05 < .06$.

One major issue that is raised against zoosexuality as an analogy for homosexuality is the problem of consent. It is claimed that adult homosexuals and heterosexuals give consent, whereas, the animal in the zoosexual relationship cannot consent. Agreement with this claim would be the majority view; however, there are a few additional points that can be placed on the table regarding the concept of consent. First, consent rather than being viewed as dichotomous (Yes/No) is perhaps better viewed as a position on a continuum given the particulars of differential psychology—differences related to intelligence; differences in cognitive abilities, states, and influences; differences in personality; differences in strategy; levels of self-esteem; risk-taking styles; motivational differences; health; fatigue; age-differences, and so on. Even altered states of consciousness (somnambulism, hypnotism, drugs, alcohol, suggestibility, propaganda, wooing, deception, etc.) can impact the quality, validity, and reliability of one's consent.

In fact, shifts in arousal level can impact one's judgment about certain sexual acts, and hence consensual practice, consent per se, and degree of consent. Support for such a claim is found in a study of 25 males who predicted their desire to engage in a variety of sexual scenarios under two different conditions: nonaroused and aroused (Ariely, 2008). To illustrate: "Across the 19 questions about sexual preferences, when Roy and all the other participants were aroused they predicted that their desire to engage in a variety of somewhat odd sexual activities would be nearly twice as high as (72 percent higher than) they had predicted when they were cold. For example, the idea of enjoying sexual contact with animals was more than twice as appealing when they were in a state of arousal as when they were in a cold state (Ariely, 2008, p. 96)." To the question, "Can you imagine getting sexually excited by contact with an animal?" participants responded on a scale of zero to 100 (with zero anchored with NO and 100 anchored with YES) the mean response jumped from 6 to 16 for the responses in the aroused state. For

illustrations of other odd activities under high arousal conditions see Ariely (2008, pp. 106-108). Arguably, consent is under the influence of various, and multiple, factors in any two individuals. Consent, it seems, can be mitigated or enhanced by a variety of psychological and situational factors. Analysis is required; understanding is required; insight is required; consent is a complex construct.

Second, with a shift in focus to human-animal relations, the issue of consent has an interesting analogical parallel with respect to animal research. If animals cannot give consent for inter-species sexual activity (human to animal), and this inability to consent is the basis for criminalizing an act or making a moral judgment that an act is wrong, there is an analogical problem. Do we hold to the same standards for animal consent with respect to the use of animals in research? If consent is a moral factor in one domain, that is, human-on-animal sexuality, why not the analogical domain, human-on-animal research? Informed consent is a major ethical enterprise in research with humans directly and animal research indirectly. In effect, there is a somewhat similar vein in that there is a notion of consent by proxy. Here the caretaker is responsible for giving consent for research. With humans, caretakers can be parents, those in loco parentis, those holding power of attorney, or just guardians. So too with animals! Owners of animals provide proxy consent for spaying or neutering an animal, breeding an animal, or even slaughtering an animal. Yes, there are laws and regulations in place, but the issues relating to “animal rights” are quite controversial rights issues (Cohen & Regan, 2001; Regan, 2004; Rollin, 2006; Smith, 2010).

Third, some “academic settings” do consider sexual contact between humans and animals. It is not unknown. Hopefully it is relatively rare in academic settings, yet in such settings, researchers do have a propensity to explore the full range of animal behaviours as biological phenomena, using a naturalistic framework, and they would naturally make

inferences about animal sexual activity. Such considerations could easily cross borders into inter-species sexual contacts (e.g., Bagemihl, 1999) and possibly human-animal sexual activity. Sorenson (2009) reports on various primates (e.g., Koko, Lucy, and Ally) and apparent questionable human-animal sexual behaviours. For example, he notes: "Patterson's interpretations of Koko's gestures came under additional scrutiny in 2005, when two former employees of Patterson's Gorilla Foundation sued her. They claimed Patterson interpreted Koko's signs as requests to undress and show their breasts and repeatedly demanded compliance (pp. 140-141)." More troubling was the Temerlins' raising Lucy as their daughter. Sorenson writes: "Identifying himself as Lucy's father, [Maurice] Temerlin is fascinated by her sexuality, driven to discover if her sexual interests were directed towards humans. Unwisely disregarding numerous primatologists who have lost fingers to biting chimpanzees, Temerlin describes Lucy's 'attempt[ing] to mouth my penis whenever she sees it, whether I am urinating, bathing, or have an erection.' He regrets not photographing Lucy masturbating with a vacuum cleaner, masturbates in front of her and has his wife do the same 'to see what would happen' and fantasizes about his adopted daughter: 'I even had fantasies about copulating with Lucy and had cracked jokes about it, teasing Jane about how our daughter would be a perfect subject for an experiment in cross-species sexuality... (2009, pp. 142-143)." An equally bizarre case is reported by Sorenson (2009) referring to a case reported by Elizabeth Hess regarding the chimp Ally. "Seized by 'fierce religious convictions,' the woman raised Ally as a Catholic, although this did not discourage her from having a sexual relationship with him. Hess says Lemmon 'encouraged a sexually charged atmosphere to flourish around his chimps' (p. 143)." It is easy to draw the conclusion that consent is lacking in these examples. Still, is there room for an inference that some form of consent, under more rigorous cognitive constructs, may be argued?

Can certain animals give consent for sexual activity. The bonobos are well known for sexual activities (de Waal, 2013), including innocuous contacts like giving hugs and inviting hugs (Savage-Rumbaugh, Shanker, & Taylor, 1998). In fact, de Waal (2013) notes that bonobos are into sex, second only to humans. "When bonobos stimulate each other by grabbing testicles, fingering clitorises, or rubbing genitals together while squealing and showing other signs of apparent orgasm, any sex therapist will tell you they are 'doing it' (de Waal, 2013, p. 67)." Beyond the genital sex addressed here de Waal (2013) points to the U.S. Supreme Court decision (a la Clinton) regarding the term "sex." "It clarified that the term 'sex' includes any deliberate contact with the genitalia, anus, groin, breast, thigh, or buttocks (p. 67)." Touching can be sexual contact, depending on where it is directed.

What would an acceptable cognitive case for consent look like, that is a case beyond caretaker-consent? What would be the precursors for consent? One could argue that adequate language is necessary to communicate consent. That would be a significant precursor. One could argue that cognitive capacity is necessary to communicate consent. One could argue that moral standing is necessary to communicate consent. These three seem to place rigorous demands on the phenomenon of consent. Do animals, any animals, possess sufficient language abilities, enough cognitive capacity and ability, and a moral sensitivity, to support a level of consent?

Adequate Language. First, is there a case for adequate language? With more sophisticated human-animal communications emerging, the issue of the impossibility of consent becomes less clear. Bonobos, for example, have been known to use signs to communicate a desire for a hug, or to give a hug. This could be construed as both sexual (touching) and as a form of foreplay for humans. If the bonobo had access to the sign for more dramatic sexual engagement on her signboard, and signaled such a desire to a human, that could be taken as a

form of consent. Given the notable propensity for sexual activity in bonobos (de Waal, 2013) it is peculiar that related signs (lexigrams), gestures, and vocalizations are absent from the thorough research documentation and theorizing with respect to Kanzi (Savage-Rumbaugh, et al., 1999). Is this a case of intentional absence of evidence being evidence of evidence? Do bonobos in fact have language sufficient to communicate sexual intentionality? Are there studies, anecdotes, and actual data that speak to this issue—a shelved issue?

Adequate Cognitive Abilities. Do bonobos signal intentionality? Do some primates have sufficient cognitive abilities to communicate intentionality? Does their language and cognitive processing show intentionality? For Kanzi the answer seems to be yes. "He not only gesturally signaled his intent to play, but also his intent to be carried, his intent that I assist him in retrieving objects out of his reach, his intent to give me a hug, his desire to leave Matata, and indeed, anything that he wanted me to do for him. Later he began to use the keyboard to signal similar things, but in a more specific way; his use of symbols occurred as a natural outgrowth and elaboration of these earlier gestural indications of intent (Savage-Rumbaugh, et al., 1998, p. 57)." The communications of intent show increasing complexity and construction. "In addition, with the keyboard, Kanzi can express intentions that are difficult to convey by gesture alone (Savage-Rumbaugh, et al., 1998, p. 57)." The activities flagged are "...whether he wants to play tickle, chase, bite, grab, slap, or hide, and if we agree to play, we have only to note the game he initiates to see that his expressed intentions coincide with his behavior (Savage-Rumbaugh, et al., 1998, p. 57)." Moreover, Kanzi is not alone in showing intentionality. "Unlike Lana, Sherman and Austin used symbols to communicate not only with people but also with each other. To do this, they had to be able not only to talk but also to listen, understand, and cooperate. They had to coordinate their communications, take turns in simple conversations, and

coordinate nonverbal gestures with their symbol messages (Savage-Rumbaugh, et al., 1998, p. 15)."

Arguments for intentionality, theory of mind, language itself, empathy, sympathy, and consolation, support cognitive complexity meshing with linguistic complexity. Reasonably, primates can ask for certain things, and give assent to certain things? Do they have empathy? Do they have a theory of mind? Do they function differently on their turf as opposed to their caretaker's turf? The insights from Kanzi, as reported by Savage-Rumbaugh, et al. (1998), certainly points in a direction that keeps the notion of animal consent on the table.

Adequate Moral Underpinnings. One variable to consider, which is more esoteric, is the moral underpinning. Do some primates have sufficient moral abilities to consent to interspecies sexual engagement? A key question here can be framed as follows: Is sexual behaviour analyzed at a biological level or a moral level? While most primatologists are likely considering primate sexual behaviour as a biological phenomenon only, there is the question of moral underpinnings. Logically, concern with the cognitive and linguistic aspects of behaviour (e.g., Savage-Rumbaugh, et al., 1998), extends to moral levels as well (e.g., Bekoff & Pierce, 2010; de Waal, 2006, 2009).

Deep Structure.

A suggestion is made that just as constructs like language, reasoning, and morality have a surface structure and a deep structure, so too does consent. When dramatic aspects of language are seen in animal communications, as with Kanzi (Savage-Rumbaugh, et al., 1998), one could argue that surface structure is in view; the deep structure aspect of language (Chomsky, 1957) typical of human language is missing. Continuity between animals and humans with respect to language is at the surface structure level. It is not that the Language Acquisition Device is missing; in fact, a type of Language Acquisition Device seems reasonably present with respect

to the languages of birds, bees, dolphins, beavers, elephants, bonobos, and so on. It is just that the Language Acquisition Devices differ. Communicative patterns between the bonobo, Kanzi, and his human caretakers, are striking, but it is a surface structure similarity and continuity.

The similarities at the cognitive level (intentionality, theory of mind, empathy, play, revenge, cooperation, and so on) are striking. But these are seen to reflect a continuity that could be posited as surface-level, in order to distinguish the qualitative difference with human cognition.

Similarly, when one considers morality there is a surface structure (i.e., relativistic and conventional) and a deep structure level (i.e., objective and absolute). That animals show rudimentary aspects of morality, even impressive "moral" behaviours, is still addressing surface level morality. Is sexual behaviour a surface structure phenomenon, a deep structure phenomenon, or both? What about consent? Does it involve surface structure, deep structure, or both?

My own tentative position is that consent at a surface structure level is different from consent at a deep structure level. Deep structure consent would involve understanding, a broad perspective, reflective thought, depth of analysis, understanding of consequences, awareness of constraints, and wisdom. Surface structure consent would be more shallow, impulsive, intuitive, automatic, instinctual, habitual, and narrow. While much human consent would be at a surface structure level, the deep structure level is not precluded. Examples of sexual surface structure consent in humans might be engagement at the hebephilia level, the pedophilia level, zoosexuality, homosexuality, incest, hooking-up, seduction, adultery, groupies, prostitution, instrumental marriages, and so on. Deep structure consent aligns with understanding, wisdom, agape, reflection, analysis, synthesis, teleology, order, and I-Thou relationships. In such a

framing true consent, deep structure consent, is likely to be rare. And, in such a framing what we accept as valid consent may be quite premature and faulty.

Nature As Model. A more substantive argument from diversity may be drawn from one particular case for homosexuality: the observation of animal behaviour in nature. This variant of a biological argument for homosexuality has parallels also in offering support for zoophilia. The parallel is extracted from the Bagemihl (1999) book "Biological Exuberance: Animal Homosexuality and Natural Diversity." At a primary level the book reports evidence of the dramatic homosexual behaviour of various species. Indeed, it is truly an interesting collection of observations and facts, and it is an interesting read. Clearly there is what could be termed "homosexuality"—at least for the sake of argument—in nature, and for many species. In a naturalist worldview, or an ethological paradigm, such diversity is simply observed, simply accepted, and simply valued at face value. But for those who venture into paradigms other than the ethological, or worldviews other than naturalism, the Bagemihl book, or Bagemihl thesis, "proves" too much!

How does the book prove too much? Well, admittedly, there is apparent "homosexual activity" documented in multiple species by Bagemihl. But, and here's the "rub," there is also evidence provided of: (1) zoophilia (cross species sexual activity), pedophilia (sex with the young, and the premature representatives of one's species), (3) necrophilia (sex with the dead), (4) infanticide, (5) cannibalism, and so on. So what is nature teaching us? Is nature teaching us that there is a good case for necrophilia, homosexuality, zoosexuality, pedophilia, and so on? Or is there a better inference: an inference that we need a case for rising above our nature with respect to certain constructs?

Is nature teaching us these behaviours are normal because they occur in nature? Or, is nature teaching us these behaviours are acceptable because they occur in nature? Yes, in a naturalist worldview or under an ethological paradigm. But surely another level of analysis is needed to transcend simple naturalism when considering human behaviour. What worldview transcends naturalism—humanism, postmodernism, existentialism, Christianity, Islam, Buddhism, etc.?

History And Precedent. Is the broader history which shows cultural differences teaching us these behaviours are normal because they occur more readily in some settings? An appeal to historical/cultural parallels might add to the case, but the support is weak. Yes, there are historical cultures that did not condemn sex with certain animals. For instance, in the Hittite Code sexual intercourse with certain types of animals was a capital crime (dog or pig) but not so with other types of animals (horse or mule), for which there was no punishment (Hittite Code, item #199). In item #187 sexual intercourse with a cow was identified as a capital crime, but it is noted the king may pardon this offender. One wonders about all other animals, and what the reasons might be for the two categories being flagged here. Is it size—large animal vs small animals? Is it function—animals the culture eats vs animals the culture uses? Is it religious? At best though, cultural diversity, does not offer a substantive argument for zoophilia; cultural relativity is descriptive, not prescriptive. And in line with the earlier discussion of the culture analogy, cultural relativity reflects a fluid surface structure as opposed to a fixed deep structure. What worldview transcends historical/cultural relativism—humanism, postmodernism, existentialism, Christianity, Islam, Buddhism, etc.?

Worldview. What is the foundation of the transcending worldview? Will it bear the moral weight to contend that necrophilia, infanticide, zoophilia, etc. are wrong? Do such parallels teach us something about our worldview, a worldview defect, or a clash of worldviews? Is

naturalism an inadequate worldview for defending such practices as homosexuality, without at the same time defending zoophilia, pedophilia, necrophilia, and so on?

What's your worldview? Assume naturalism. Infanticide is practiced in many species, and arguably may have survival value for the species—in effect, pruning the species. Euthanasia had ties to naturalism from Darwin on. Infanticide is reported in some cultures specifically (e.g., China, Japan, Africa) and perhaps all cultures generally, some time periods (e.g., ancient Sparta and early Imperial Rome), and some ethical systems (e.g., Singer, 1993). If infanticide is wrong in some cultures, and acceptable in other cultures, is the moral determination based merely on cultural norms and rules? What's the worldview at play in such practices? What's the worldview beyond naturalism that permits infanticide?

Other Exotic Analogies

Some analogies (e.g., left-handedness, "the black race") lack fundamental comparability (e.g., clear genetic comparability), or a comparable level of current social disapproval. Still other analogies (e.g., necrophilia and coprophilia as advanced by Goldberg, 1991) are potentially too noxious and serve as an obstruction rather than a facilitator, however logical, or analogical, they might be[1].

There are other interesting analogies that have potential as cognitive tools; they have promise in facilitating, or broadening, conceptual understanding. But these other analogies, though intriguing, even fascinating, are amenable to implosion due to triviality. This is a problem unless of course one views homosexuality also as trivial. As an example, Weinrich (1992) uses the analogy of "petual," (i.e., pet preference for dogs versus cats) as an analogy. "Petuality" can be somewhat comparable to sexual orientation with canophiles, felophiles and

[1] Moreover, there is a likelihood that these paraphilias would be viewed as pathological as opposed to preferential, whereas this would not be the case with the smoking analogy.

bipetuals. What does the causal architecture look like? Is it pure biology (genes and hormones) driving preference? Or is it environment (parental influence, history with animals, media, peers, first encounters, and so on)? Or is it chance? Another option is more likely: the interaction of biology, environment, history, experience, personality, temperament, parenting, chance, and choice would factor into such preferences. However, is the causal underpinning so banal and inconsequential as to appear trivial and irrelevant? Yes, but would anyone deny the element of choice, and the importance of choice, in the context of one's nature and nurture underpinning pet selection?

To add another level to the petuality analogy, consider the introduction of moral overlays with respect to pets preferred by some—pets like lion cubs and pitbulls? Is there a role for biology, personality, and choice in such exotic and seemingly rebellious, image-making pet preferences? Is there an identity construct emerging here that pushes the limits of normal? Does one with an identity, or orientation, of rebel, or radical, or strongman, choose a pitbull for a pet? Or is it more appropriate to argue that choosing the lion as pet is a loving, caring, branching of biophilia—is this "petuality" a gift from God, and beyond choice?

In a similar, somewhat limited example, Stein (1992) uses "Zomnia," (sleeping posture preference, back versus front) as an analogy. Obviously some prefer sleeping on their front, some on their back and some toss back and forth. Agreed! One place where these analogies break down (i.e., fail to align with homosexuality) is that more than one-half of the adult population (US) over the past quarter-century does not believe that preferring cats, or a predisposition to sleeping on one's back, is "always wrong." The moral dimension is lacking. Smoking, however, as an analogy, works with respect to a moral dimension since a large segment of the population would concur that smoking is wrong, or at least a bad choice. Moreover, there is more research on a smoking orientation than on pet preference orientations

and sleeping preference orientations. This broader research base for smoking facilitates empirically based comparisons.

There are other analogies that may have logical parallels with a homosexual orientation or a smoking orientation. For example, both the problem-eating analogy and the suicidality analogy would have parallels to homosexuality if all are considered habitual. While these analogies seem to have more limitations than a smoking analogy in mapping to a homosexual orientation their analogical explanatory value for the homosexual orientation would be interesting. Moreover, it does appear arguable that the smoking analogy as a base can serve as a vehicle for elaborating understanding of eating problems and suicidality as well as a sexual orientation.

The Plausible Problem-Eating Analogy

Is it credible to consider eating behaviours, or problem-eating, or an eating-orientation as an analogy to a homosexual orientation? A particular orientation to eating can manifest itself in problematic behaviours like indulgence, excess, risk, foolishness, and the more dangerous behaviours such as bulimia and anorexia. In a sense, there is an analogical case for considering an eating-orientation that may have parallels with other psychological orientations. Approaches to eating, or what constitutes an eating problem, often involve such categorizations as the statistical (normal/abnormal), or personal distress (healthy/unhealthy), or psychological adaptation (normal/disordered), or moral status (normal/sinful), and so on. In addition, an eating orientation can fall along a continuum with markers tied to such measures as weight, obesity, and Body Mass Index (BMI). These qualities do seem to permit a stronger analogical inter-mapping of the three orientations—a sexual orientation, a smoking orientation, and a problem-eating orientation—than the alternate suggestions like left-handedness, race, ethnicity, and so on.

Furthermore, the dieting phenomenon may also be instructive with respect to causality as it is reported to be the most common trigger of eating disorders (Eating Disorders, 2007). Attempts to lose weight through various methods are often considered to compound the problem with the dieter actually gaining more weight after the failure. This phenomenon, along with the seemingly intractable nature of the problem—the difficulty in achieving change—raises the issue of the psychological aspects of the problems, particularly the cognitive correlates. Is there a similar phenomenon when people try to quit smoking, or quit homosexuality for that matter? Do attempts to change any orientation compound problems? This is an interesting phenomenon pointing to the importance of a serious consideration of the psychology of self-regulation. What are people thinking with respect to the change process? And how do change efforts interact with antecedent and consequent thinking? This is discussed more fully later, when considering "Theories Impacting Belief Shifts" in Chapter 6, and of particular interest, comparatively, would be ironic effects theory.

The psychological correlates involved in changing a problem-eating orientation would relate to perception (e.g., body image, relationships), cognition (e.g., will, knowledge, thinking), deception (self deception, rationalization), co-morbidity[1] (e.g., depression), and behaviours (habits, addictions, planning, strategies). One striking co-morbidity factor related to obesity is depression. Wallace, Sheslow and Hassink (1993) report depression ratings dramatically increased in an obese group (22% borderline-depressed and 32% depressed) where the normal incidence in a child population is 6 to 10%. Depression is also correlated with both smoking (e.g., Sheisha, 1999), and homosexuality (see Bailey, 1999). Such correlates flesh out the analogical thinking.

[1] Is it interesting and possibly informative that male homosexuals show a higher incidence of eating disorders?

Biological Influence.

While there may be a popular notion that weight problems are environmentally driven (the number and types of food choices available, the willful choosing to eat, media advertising, parental influences on establishing preferences, sedentary lifestyle, or just plain taste preferences), there is a case for biological influences. The biological influences are tied to: needs (one must eat to survive), genetics (necessary genes and susceptible genes), improper function (either biochemical, or neurological), as well as phenotypes.

At the level of needs one has the sense that it is more difficult to deal with problems tied to fundamental needs like water and food, than higher level needs like esteem needs or safety needs. There is no escaping the need for food. Given this fact alone, dealing with a food orientation could be conceived as more difficult than dealing with a smoking orientation or an alcohol addiction.

At the level of genetics there does seem to be a case for genetic influence on weight related behaviours or problem-eating behaviours. Studies of MZ twins suggest a concordance rate of 56% for anorexia (Holland, Sicotte, & Treasure, 1988), which they extend to claim as much as 80% of the variance as due to genetic factors. Klump, Miller, Keel, McGue, and Iacono (2001) report a concordance rate of 74%. For bulimia a lower concordance rate of 23% is reported (Kendler, MacLean, Neale, Kessler, Heath & Eaves, 1991).

Bouchard and Pérusse (1993) note heritability estimates of Body Mass Index of 20 to 30% from nuclear family and adoption data, and 60 to 90% from twin studies. Their review of studies leads them to conclude "…that the heritability level does not exceed 40% of the age- and of gender-adjusted phenotype and that the value is likely to be significantly less than that (p. 31)." Since an increased BMI, like smoking and sexual orientation, would not be considered disorders, there may be more merit in the problem-eating analogy.

The biological issues suggest a continuum to capture the range of eating problems would be informative. The seven-point W-scale below (Figure 2) does provide a continuum, or several continua. The seven-point scale was arbitrarily selected as a working scale along the lines of the Kinsey scale for homosexuality. On this scale there are seven labels that are judged to be logical. The additional labels of (disordered, problematic, and normal) and Focus (Image vs Food) were arbitrary as well, but do seem to have a degree of coherence, arguably. A second axis could be added to capture the phenotypes: Type I (excess total body fat), Type II (excess subcutaneous trunk fat), Type III (excess abdominal-visceral fat), and Type IV (excess gluteo-femoral fat) (Bouchard & Pérusse, 1993). While Bouchard and Pérusse types would fall in the W4, W5 and W6 cells, it is conceivable that excessive loss of fat and perhaps muscle (W0, W1 and W2) could link to phenotypes as well.

W0	W1	W2	W3	W4	W5	W6
An Image Focus			Balanced	A Food Focus		
Underweight & Anorexic	Underweight & Bulimic	Underweight	Normal Weight	Overweight	Obese	Morbidly Obese
Disordered	Problematic	Normal			Problematic	Disordered
Improper Function		Fuzzy Function	Proper Function	Fuzzy Function	Improper Function	

Figure 2. Illustrating a seven-point continuum of weight/eating profiles.

At this point two questions arise. First, which of these cells should be considered as obvious disorders, and which should be considered within the domain of normal? The case can be made that W0 and W6 are best considered disorders. W1 and W5 are borderline, and here identified as problematic.

The second question, and possibly the more important question, concerns what drives the behaviour. Even though there are genetic influences for each cell the cultural and cognitive influences likely deserve more weight. Why? It is largely in this latter domain that the problem can be addressed.

An additional biological consideration addresses the notion of proper function—neurological, biochemical, and psychological function. Improper function is less alignable with culture and cognition. Improper function would be evident in syndromes like the Prader-Willi syndrome, for example. Obviously, there is a need for a consideration of proper brain function related to eating. Understanding biochemical imbalances or anomalies—as both causes and effects—allow for a fuller understanding of some eating problems. Moreover, such an understanding may elaborate on the common infrastructure of problems like eating-problems, smoking, addictive behaviours, homosexuality, suicidality, ADHD, obsessive behaviours, and so on.

A current biological candidate for improper-function which is getting attention is the 5-HT anomalies linked to eating disorders (Kaye 2002; Trevaskis, Sutton, Xu, & Butler, 2008). Equally interesting, this neurotransmitter may also link to suicidality, depression, ADHD, autism, learning problems, and so on, in the attire of improper function.

Should proper function be considered as a categorical variable (Yes/No), or should it be considered as a continuous variable with relative degrees of dysfunction? If the latter then one aspect of proper function may be expressed as fuzzy function. One might argue that proper function is evident when an individual is in the W3 category. Fuzzy function involves more shades of grey and nuanced differences. W2 and W4 might fit in this arena of fuzzy function. W0, W1, W5, and W6 would be tied to improper function.

Environmental Influence.

There is little doubt that environment is a determinant of problem-eating and eating orientations in popular conceptualizations. Parents push food and thus serve to generate a *material cause*. Peers push food. School cafeterias push, and at times are accused of pushing,

unhealthy food selections. In these scenarios, the environment facilitates the existence of a *material cause* which influences the development of an eating orientation—obesity, or eating problems, or eating disorders, or eating patterns.

Furthermore, there is a *formal cause* operative in the modeling of food selection offered by parents, friends, and media images. People respond to models, in part, as a means of obtaining vicarious reinforcement, but also because we seem to be wired to imitate, or mimic, those we encounter in our environment.

In addition to the influence of models there is the marketing strategy using learning-theory strategies to influence consumption. Classical conditioning principles can be conscripted to sell products. When products (initially neutral stimuli) are paired with stimuli that generate a stronger emotional valence (e.g., cartoons, sitcoms, laughter, esteem, peaceful environs, friendships, cars, toys, heroes, and so on) those neutral products acquire a proxy value. This classical conditioning strategy serves as a *formal cause* pushing people towards a product. If that product is unhealthy the consequence is unhealthy.

Similarly, operant conditioning principles can be used to ensure repeated behaviours. For example, the first law of operant conditioning is: "behaviour that is followed by a good effect tends to be repeated." What's the good effect in the weight gain orientation? Taste buds satiated by sugar, chocolate, fats, and so on, can serve as reinforcers pushing people to consume more. The *formal cause* lies with the marketers, at least, in part. The *final cause* for the individual is that pleasurable experience of consumption, at one level, but sustainment of life at another level.

Of course the person is the *efficient cause* in choosing to eat, but as with most addictions, the sense of personal choice is mitigated, or even lost, over time. People choose to eat sweets. People choose to eat fats. People choose to eat repeatedly. With classical conditioning and

operant conditioning principles operative, the learning becomes entrenched and the power of choice atrophies over time.

Even so, when comparing hereditary and environmental determinants, it seems that the environmental causes are weak. Sørensen, Rasmussen and Magnusson (2008) report on adoption studies with the conclusion: "The adoption studies have contributed by clearly demonstrating that the familial correlations of BMI or other obesity-related measures are attributable mainly to the genetic influences, even among both children and adults living in the same household. There is, however, a weak effect of the shared environment as long as the individuals live together, but no evidence supports that this effect persists after the household has been left (p. 36)." Given the weak effects due to environment the eating orientation may not be a good analogy for sexual orientation.

Another area where the eating-problem analogy might fail in mapping to the homosexual orientation is in respect to various constraints:

> (1) The differential weighting of biological determinants (the biological determinants are stronger for certain types of eating disorders than for homosexuality) can function as a constraint.
>
> (2) Culturally-driven differences in eating patterns can function as a constraint.There are likely strong culturally driven influences pushing some people to eating patterns that can be detrimental, which is less likely for homosexuality. However there is some evidence of a culture supporting a type of homosexual activity in pre and peri-adolescence. For example, a tribe in New Guinea described by Gilbert Herdt, as referenced by Jones and Yarborough (2007, p. 206), does encourage homosexual activity for children.

(3) Academic perceptions (e.g., with respect to disorder vs learning there is no longer room in the psychological literature to consider homosexuality a disorder, whereas, some eating behaviours are still considered disordered). This functions as a mapping constraint.

(4) Social attitudes likely differ with many attaching more social disapproval to eating problems than homosexuality.

Where the analogy may have compelling parallels is with respect to: (1) depression, (2) co-morbidity, for example, eating disorders amongst male homosexuals (Russell & Keel, 2002), (3) a moral continuum progressing from non-moral to immoral (i.e., indulgence to gluttony), (4) causal infrastructure—both biological and environmental determinants, (5) categorization or taxonomy—both non-disorder and disorder categories, and (6) image distortion in the form of a *body-image distortion* (intrapersonal) and *relationship-image distortion* (interpersonal).[1]

The Plausible Suicidality Analogy

Suicidality as a state (whether internal thoughts or external acts) is less genetically determined than race (e.g., physical features like skin colour) and probably less hormonally determined than physical markers (e.g., left-handedness), it is less of a sociological ascription than ethnicity, it is somewhat less noxious than necrophilia or zoophilia, and clearly less trivial than petuality or zomnia. Suicidality, therefore, may be a better analogy for homosexuality than those comparators listed.

A suicidal orientation may parallel in several ways the more substantive analogies—an eating orientation or a smoking orientation—for a sexual orientation. Indeed, all four may fall

[1] This notion of *image distortion* in homosexuality can be tied to the male body plan functioning in part along the lines of the receptive female body plan, whether for self or other. The notion of *relationship distortion* is tied to the observation that one person in the dyad functions relationally "like" the opposite sex.

sufficiently close, comparatively to: (1) the environmental end of the determination continuum, (2) the offensive end of the social-judgmental end of the moral continuum, and (3) the compassionate end of the concern continuum. All four, therefore, potentially serve as useful analogies[1].

As with sexual orientation and the problem-eating orientation a seven-point scale is used (loosely modeled after Kinsey, et al, 1948, 1953) to categorize orientations related to suicide. It is a conceptual tool only. The categorization offered for suicidality is seen in Figure 3.

Scale	0	1	2	3	4	5	6
Normalcy	Normal		Abnormal				Severe
Level	Ideation (Cognitive)		Attempts (Cognitive & Behavioural)				Virtual Completion
Serious	Nil	Mild		Serious			Critical
Suicidality	Absence of Suicidality	Suicidal Ideation	Ideation and Plans	Plans and Attempt	Attempt (No plans)	Ideation, Plans And Attempts	Clearly No Parasuicidality

Figure 3. Illustrating a seven-point continuum of suicidality increasing in gravity from Nil to Critical.

Biological Influence.

Concordance rates for suicidality in MZ twin studies are high (30 to 55%) (Brent & Mann, 2003). The rates are somewhat comparable to the concordance rates for smoking and homosexuality but fall between these two categories. Batra, et al (2003) reviewing the issue of the genetic determinants of smoking noted: "… heritability estimates for smoking in twin studies have ranged from 46 to 84%, indicating a substantial genetic component." (p. 1730). These concordance rates are higher than the concordance rates typically reported for homosexuality (see Bailey & Pillard, 1991; Bailey, et al., 1993, 2000; Långström, et al., 2010)

[1] While alcoholism has also been advanced as a comparable analogy, smoking is less pejorative in the sense that it doesn't have an inherent medical link to illness or pathology, and suicidality is less pejorative as it captures both biological and cognitive influences.

which in more recent studies now seem to be closer to 20% with Bailey et al (2000) reporting a 20% concordance for males and a 24% concordance for females. Thus, suicidality seems to fall above homosexuality with respect to particular biological determinants, but below smoking.

Environmental Influence.

Environmental determinants, or influences, impacting suicidality are likely to be found in the area of contagion, learning, relationship failures, social isolation, family problems, economics, personality, physical illness, culture, media, and drugs, at one level, and cognitive dysfunction at another level. In essence, three broad categories are seen to be of interest here: environmental influences, thinking, and learning. Things in the environment can impact thinking, and ultimately learning, which would surely apply to suicidality as well as analogical comparators like smoking and homosexuality. They are similar.

As with smoking and sexual orientation, suicidality can be configured in terms of the *committed*, the *interested*, and the *oblivious*. The *committed* would be those who make serious attempts to kill themselves or succeed in killing themselves. The *interested* would be those who have suicidal thoughts or plans, and perhaps even manifest fragile suicide attempts (i.e., the parasuicides). The *oblivious* have no thought invested in suicidality.

While this analogy does parallel smoking and sexual orientation on some levels, it does differ in the area of incidence. Smoking might involve 20% of a population and the homosexual sexual orientation perhaps 2%-4% of a population, but suicide is much lower at .0001%. However, attempts, plans, and thoughts can be much higher and of significant concern. For example, Lewinsohn, Rohde, and Seely (1995) note that some studies reporting on suicidal ideation and action show a large percentage of adolescents (up to 60%) indicating some degree of ideation. Perhaps more realistically their own data on lifetime occurrence of suicidal ideation

(23.7% for girls and 14.8% for boys) is more comparable to orientations related to smoking, dieting and homosexuality. For attempts the rate was 10.1% for girls and 3.8% for boys. This range of prevalence rates may be in line with various aspects of smoking (e.g., the *interested* at 15.9%, see Giesler, 2005) and *sexual orientation concerns* (e.g., for girls at 10.7%, see Remafedi, et al., 1992).

At this point there seems to be a case for analogical thinking, and a very good case for using the smoking orientation as an analogical base for sexual orientations. Moreover, though the primary focus has been on the homosexual orientation at this point, it is reasonable to speculate that such analogical thinking could apply equally to a variety of orientations including the heterosexual orientation. Orientations are, in part, learned. Furthermore, the analogical base of smoking is arguably a good base for considering other targets—eating problems, suicidality, zoophilia, athletic prowess, musicianship, and so on.

The Plausible Heterosexual Orientation Analogy

Much of what has underpinned the argument for analogical thinking with respect to a smoking orientation and various target orientations, like the homosexual orientation, applies as well to a heterosexual orientation. There are biological determinants. There are environmental determinants. There are interactions. Advanced here is the claim that there is a case to be made for the learning of all orientations. There is a case to be made for choice and change. At this point the claims are made—particularly the claim that a smoking orientation is analogous to a heterosexual orientation. The arguments are developed later following a fuller discussion of Choice (Chapter 3) and Change (Chapter 4). As an end-point see the section in Chapter 4 Rationally Choosing Heterosexuality.

Chapter 3: The Issue of Choice

A Preamble on the Question of Free Will

Simply, if the mugger, the murderer, or the marauder has libertarian free will they are responsible for their acts—perhaps in vary degrees, or at times tempered by extenuating circumstances—but they are judged to be responsible in some way. Alternatively, if their will is simply compatible with the determinants of their nature (and the mere mediator of earlier determinants), it is difficult to assign responsibility in any meaningful way. Ironically as well, the assigning of responsibility, or not, is a choice, and itself presupposes libertarian free will, or so it seems. Consequently, and up front, I presuppose libertarian free will as the working hypothesis in the reflection advanced here.

When considering the place of choice in the formation of an orientation, or a belief, or a behavior, it would be assumed—if there is a real choice, or authentic choice, as opposed to apparent choice—that the choice presupposes a meaningful form of willfulness on the part of an agent. Therefore, the nature of willful choices are necessarily on the table for consideration—willful choices in the form of determinism (no real free will), compatibilism (situated, complimentary will), and libertarian free will (true agent causation as prime mover).

On a bi-polar scale one can ask if human beings have a free will and expect a simple yes or no answer. Is free will real, or is determinism the reality we face?[1] Is free will real, or is the notion of free will just an illusion? And pushing beyond the bipolar scale one can ask two relevant questions: (1) does free will co-exist with determinism as some variant of compatibilism? (2), can free will exist at one point in time only to atrophy at a later point?

[1] Ironically, as indicated above, to answer this question "yes, there is a free will" could be viewed as simply a pre-determined response by the naturalist, or determinist. For the hard determinist to even attempt an answer (which would be founded upon freedom and choices, albeit rational choices) seems counter-intuitive, perhaps self-refuting, and somewhat suspicious, at least. Free will seems to be a required presupposition for any meaningful cognitive-based dialogue.

One camp holds that free will is real (Moreland & Rae, 2002; Swinburne, 1998, 2013; Van Inwagen, 1983). The opposing camp holds that it is not possible to have free will in a deterministic world governed by natural laws. In this opposing camp, naturalism as a worldview is quite "at home" with determinism, that is, hard determinism. In the naturalism camp, for the most part, free will is an illusion (see Rosenberg, 2011; Wegner, 2002). Between these two poles a third camp (or set of camps) holds that both free will and determinism can be considered real and that they are compatible (Taylor & Dennett, 2002). However, those who fall in this camp still seem to view all causation as "event causation," which, at best is a soft determinism, if not defaulting to outright determinism in the final analysis. In fact, the critique of this compatibilist position seems sufficient to justify one being quite suspicious of the soft determinism position (Berofsky, 2002).

If determinism is true (at least hard determinism, and possibly soft determinism) all events, including, beliefs, emotions, behaviours, orientations, and choices, are determined by prior events. Agent causation, that is, agent as originator, is apparent only—it is not real, in such a view. Agent causation has no ontological reality, and no real originating power, and therefore, no authentic status as originator of an action, a belief, an orientation, and so on. At best, agents are simply mechanical mediators between outcomes and prior events.

Arguably, determinism is the only logical mechanism to explain causation in a naturalist's worldview. If determinism is true there is no case for personal responsibility. An apparent choice (to commit suicide, to choose a same-sex partner, to opt for sex with animals, to opt for sex with children, to obsessively practice the piano, to pursue creative writing, to smoke, to conduct scientific experiments, etc.) is merely the product of a string of previous events, albeit, a variegated and complex constellation of previous events. The simplest analogy (and one used by Moreland & Rae, 2002) is the analogy of dominoes falling; the fall of one domino is

due to the fall of the preceding domino in the causal chain. The original cause in the distant past is fuzzy, ignored, and ultimately reduced to an unknown—a self-organizing product of (1) something like dust in motion, and chance, it seems, or (2) the posits of the mind of a complexity-theorist, or (3) "something," since something exists, or (4) nothing. There is no agent causation, no initiating domino that is an agent manifesting an act of will.

How much credibility can be allocated to such a view of pure determinism where all causation is event causation? To play a little with this question we could suggest using *a five-point credibility scale* to weight the place for determinism (0=None, 1=Minimal, 2=Moderate, 3=Considerable, 4=Total) to face the question. Using this scale, one could say: "In a pure naturalist worldview 100% event causation reaches a credibility level of 4, that is, 'Total' (hard determinism)." Another might answer: "In a broad naturalist worldview event causation reaches a credibility level of 3, that is, 'Considerable' (soft determinism), with some room for agent causation."

In a more conservative, or religious, or commonsense, worldview the belief allocation for a hard determinism drops to the more "Moderate" or "Minimal" range, 1-2. Determinism is not ruled out; rather, it co-exists with free will, a libertarian free will. Thus, in these latter worldviews there is a place for free will, or true agent causation, alongside deterministic event causation. When, where, how, and how much agent causation is exercised is an open question. At best, agent causation, though real, seems to be minimal as it functions at certain choice-points or pivot-points. Likely, agent causation is quite fragile, and can be easily lost once a certain course of action is set in motion. The trigger is pulled; and then a series of cascading events surface, unfolding like a pinball bouncing around, to work their harm, or their help.

The compatibilist position argues that a form of free will is compatible with determinism. Of the compatibilist position Swinburne (1998) writes: "…the basic idea is that

someone has free will in this sense if they do what they want and value (and do not act in consequence of psychological or physical pressure), even if they are fully caused to want and value what they do (p. 33)." It seems to be a logically flawed claim, however, perhaps even self-refuting as the "wanting" and "valuing" are "fully caused." Indeed, there is a problem with this view with respect to accountability and responsibility. As Swinburne further notes: "If the only free will humans have is compatibilist free will, there will be no distinction to be made between God allowing some human to do a bad act, and causing him to do it. For then humans will inevitably do the acts they do because of the way they are made (1998, p. 34)."

In a sense quasi-compatibilist choices can be seen as real but constrained by one's nature, and a complex constellation of determinants. In such a scenario an agent choosing X is advancing a choice determined "partially" by influential situational determinants (peers, parents, education, experiences, biology, multiplier effects, development, developmental history, etc.) and one's cognitive/volitional architecture which itself is built from previous events.

From a theological perspective, perhaps a person has libertarian free will by design, but has fallen victim to compatibilist determinism by a corrupted nature, or corrupted environment. In a sense the will is now bound by a broken nature as Luther might phrase it (Luther, no date) following Augustine (see Greer, 1996), and Paul (Romans 7: 14-21).

Alternatively, the will might be bound by adverse situational determinants (e.g., brain damage or dysfunction, poor parenting, poverty, education, politics, indoctrination, propaganda, etc.) or bound by adverse cognitive determinants (e.g., beliefs, dogma, cognitive style, personality, etc.), or bound simply by the consequences of a free act becoming less free over time. If so, it is easy to see how one can have difficulty implying willfulness and thus personal responsibility given either compatibilism or hard determinism.

Is it possible that we are, in part, responsible for the poverty, the beliefs, and the dogmas, that now drive our acts? If so, then we might be responsible for the consequences. Is there a libertarian spark? If we have true libertarian agency we can be the source of a subsequent cascade. We can be responsible for the initial act/s that set a sequence in motion; then we are responsible, in part, for the consequences.

Are we responsible for our beliefs? The libertarian *might* answer "Yes" because of our willful choices along a continuum of choice-points. The compatibilist *could* answer "Yes" because of our nature (but probably more likely due to the compatibilist's intuitive sense of responsibility). The determinist *would* answer "Yes" given several constraints: (1) verbally, because humans (the determinist included) have been programmed to believe in responsibility by a natural selection process that values belief in responsibility, (2) behaviourally, because such pontification presupposes willful cognitive acts, and (3) pragmatically, because it's a coin toss, and just as likely "no" will be the answer tomorrow.

In a compatibilist position personal responsibility is accepted—perhaps for psychological reasons, perhaps for a purely philosophical reason—but the responsibility is clearly mitigated, if not obliterated, when probed. Moreover, the position doesn't seem logical unless one situates agent causation within a constellation of determinants that constrain an agent. However, since this position does posit a degree of free will, and agent causation, it does merit more belief allocated to it than pure determinism would merit; thus, though arbitrary, one could assign a moderate level of tentative credibility to compatibilism.

The third position is linked clearly to the concept of libertarian free will. Human beings (and perhaps some animal species) are in the position to implement true agent causation; that is, they can act contrary to pre-determinants and influences, and, in effect, originate a new direction. One position adopted in this text, and as foundational for the argument considered, is

that free will is real and therefore an important determinant of action. In terms of allocated belief a level of "Considerable" credibility is assigned to libertarian free will. This position, then, would be most consistent with responsibility assigned to the individual and subsequent accountability for their choices.

It is possible that future shifts in belief-allocation for these three positions could occur. The level of credibility for libertarian free will could decrease and the belief-allocation for compatibilism could increase as a function of additional information, or reflection. Such a shift, either way, might affect the assignment of responsibility. A shift to forms of compatibilism could be seen as negating liability given the underlying attributions to event causation; and surely a shift to a preferential allocation of belief to hard determinism would negate all responsibility.

As a consequence of opting for libertarian free will the element of personal responsibility and accountability remains prominent. However, since free will is intertwined with various reasons for acting, responsibility must be contingent upon a composite of determinants, such as, (1) ontological reasons for actions (broadly speaking the reference is to nature, nurture, and their developmental interactions), (2) cognitive reasons for actions (logical, psychological, neuropsychological, and social-psychological), and, (3) selfist reasons for action (pleasure, security, survival, self-esteem, etc.). This constellation of determinants interacts with two other broad categories of determinants which anchor acts in our moral nature[1]. The first of these is willful choices, at some point an agent generating actions expressing free will. The second category is beliefs. Since personal beliefs may underpin all of these broad domains

[1] As an aside one could ask: do animals have free will? Do they show agent causation? A knee-jerk reaction would be to say "no." But, after watching a pet dog decide to chase the bird one time and ignore it the next time in seemingly similar circumstances makes one think this looks like a choice on his part. Supposing animals do manifest agent causation where does the difference with humans reside? Likely, it resides in the fact that human choices are rooted in morality, in part. Animal choices are pure agency, and perhaps chance based.

mentioned, as well as free willed choices, beliefs are the important partner in freely willed positions.

This constellation of nature, nurture, agency, responsibility, reasons, determinants, influences, and beliefs can be considered in a particular individual in a *cross-sectional manner* (like a static snapshot). This is usually the first line of consideration. Or, more importantly, these same factors can be considered in a *longitudinal manner*, which involves a more reflective and nuanced consideration of the trajectory of a particular life, or even the trajectory leading to a particular act, a particular belief, or a particular thought.

At a primary level, then, human beings are considered to have free will and as agents initiating actions they are responsible at some level for those actions. However, responsibility can be dramatically mitigated be extenuating factors, particularly when viewed in a *cross-sectional analysis*. Yet, in a *longitudinal analysis* responsibility would be seen to play a stronger role, a key role, since later acts, though constrained and appearing determined by events, are construed to be growing from earlier free will acts.

In essence, the act of the will is key when one is arguing for the significance of choice in learning. This consideration easily extends to the significance of choice in character formation, in decision-making, in belief formations, in understanding, in personal responsibility, and so on. Furthermore, this consideration applies to simple choices, to choice-points, to the personal history and trajectory of choices, or the far ranging influences on choices. Ultimately, then, the responsibility for choices is tied to the freedom of the will and the actions of the will. Hence, it is essential to consider the nature and validity of a construct like free will, and the case for free will.

As indicated above, the position adopted in this text (at least as a working hypothesis) aligns with a libertarian view of free will as most credibility is allocated to this position of the

three positions. Mele's (2001) reference to van Inwagen resonates with a propensity to adopt libertarian free will as a working hypothesis: "Peter van Inwagen has said that the following (enthymematic) argument is 'the strongest argument for the existence of free will,' and indeed, 'the only strong argument for the existence of free will': 'moral responsibility requires free will and we are responsible for at least some of the things we have brought about' (p. 243)." Mele, himself, leans more towards agnosticism about incompatibilism, while keeping moral responsibility on the table, with a comment about "…going compatibilist. If compatibilisim is true, there is little to block our rationally believing that we are free and morally responsible on the (partial) basis of our experience of our own agency (2001, p. 247)." This would not likely be convincing to Swinburne as noted above. Nevertheless, a change to a more compatibilist position may be kept open as a possibility should future arguments warrant, but the working position at this point is the libertarian view.

Moreland and Ray (2003) put the view as follows: "In our view, the core component of intentional action is intentional endeavoring—exercising an active power as a first or originating mover in trying to bring about some effect for a reason (p. 124)." Reasons are key! Although, in one configuration the role of "reasons" functions as *final cause* but the causal weight is still with the agent. Thus, in a different configuration the role of "reasons" is a necessary condition but the causal weight is attributed to both the agent (*efficient cause*) and reasons (*final cause*) in combination.

The support for such a libertarian position emerges from common sense as well as more formal philosophical arguments (Kane, 2002; Moreland & Ray, 2003; O'Connor, 2002, 2005; Swinbourne, 1998, 2013). On the common sense side Swinbourne (1998) offers two brief points, although he develops more sophisticated arguments at other places (Swinburne, 2013). His two "brief points" are: "The first is that it does often seem that it is up to us how we are to

choose, and it is…a mark of rationality to believe that things are as they seem to be, in the absence of counter-evidence. The second, is that the mental life (of sensation, thought, desire, and purpose) is, evidently, so very different from normal physical events in the inanimate world that the brain (in sustaining a mental life) must be very different from other physical systems (which do not sustain mental life); and so there is not too much reason for supposing that any virtual determinism which operates outside the brain operates within it (p. 105)."

On a more formal level, Moreland and Rae (2003) offer four arguments for libertarian agency. First, our "fundamental awareness of and belief about ourselves…as the absolute originators of our actions (p. 132-133)," serves as an argument for libertarian agency. Second, there is an argument from weak-willed action or "akrasia." We have the sense that we sometimes act contrary to our strongest preferences, or beliefs, or desires. This sense of acting contrary to our better self, or wiser self, or wiser will (i.e., acting in line with akrasia rather than the known "better will") suggests to our psyche a bent consistent with personal agency—a bent that is seminal or generative and independent of our better selves, or best interests.

The third argument is based on "causal deviancy." A consequence might follow from an agent's act or an accident. It can be read as either caused by an event (an accident) or by an agent's intent, both of which would lead to the same effect. The example that Moreland and Ray (2003) offer is a scenario along the lines of the following: (1) a spy arranges to send a signal to confederates, (2) the signal is the removal of a light from the window, (3) the light is knocked over by accident but the confederates read it as the signal, (4) nevertheless, the spy intended to remove the light and send the signal, (5) the deviance from the intended act-plan still leads to the intended consequence. The philosophical problems behind causal deviancy do seem to offer at least a mild argument for libertarian agency. In this case, the failure of libertarian agency suggests the reality of libertarian agency.

The fourth argument is "the transitivity of causality." Basically, if *a* causes *b* and *b* causes *c*, then *a* causes *c*. Such transitivity is quite at home in determinism, and apparently in some forms of compatibilism. But, if the person has freedom at all, freedom to originate an act, a belief, or a position, it must be libertarian freedom. "The central core of agency must be the absolute origination of action within the agent, and this is precisely what libertarians affirm and compatibilists deny." These arguments serve to tilt one in the direction of libertarian agency.

Admittedly, there are serious arguments against the notion of free will, and thus significant challenges to the notion of responsibility. In a naturalist worldview, in fact, this would be the reasonable stance. Although, clearly ironic, one wonders how a case for "reasonable" can be made—a case that is itself beyond mere causal transitivity. In other words, the belief in determinism, or naturalism, has been determined for some, but only some. And if so, the belief in libertarian free will has been determined for others.

Of course such a deterministic view obliterates responsibility. That others step in and argue for compatibilism (the notion that free will and personal responsibility are compatible with determinism) is understandable. This would be an appealing route—indeed, a necessary route—if (1) one had a prior commitment to naturalism and determinism, (2) one still valued or posited personal responsibility, or (3) if one sought to attempt to explain the sense of personal responsibility.

In a religious worldview where determinism is not a basic assumption similar problems can arise that challenge libertarian agency. For example, there is a Christian notion that the will is subject to a corrupted human nature and that an agent is constrained to act in accord with this nature (see the later Augustine). Thus all acts are tainted or sinful (see Luther's response to Erasmus in The Bondage of the Will). This form of argument might assert that people do act freely, but the act is compatible with their nature; and since their nature is corrupted, their freely

initiated acts are also corrupted, so it is a qualified freedom. In effect, the libertarian free will has been lost.

One final approach is from those (determinists) who hold the idea that free will is an illusion (e.g., Wegner, 2002). As one reads through Wegner's book ones gets drawn into the strength of the argument given the empirical evidence he offered. It is a fascinating read. Vancouver and Zawidzki (2007) sense this as well with their comment that Wegner offers "compelling evidence that our introspections of willed control are largely illusory (p. 317)." They also find Dennett's compatibilistic defaulting to determinism forceful. Nevertheless, Wegner has received significant critiques from philosophers (see Mele, 2009, 2010; O'Connor, 2005) that diffuse his argument dramatically. In particular, the critique of the empirical evidence advanced by Wegner—evidence which is based in part on Libet (1985)—is satisfactorily deconstructed by Mele (2009) and Swinburne (2013).

Consequently, all things considered, it is a libertarian view of agency that is adopted in this current consideration of smoking and choice, heterosexuality and choice, homosexuality and choice, eating disorders and choice, suicidality and choice, athletic prowess and choice, and so on. Thus, it is "reasons" for an act (either teleological reasons related to *final cause*s, or sufficient reasons as part of the sufficient/*efficient* cause) that inform the actual focus. Reasons are based on beliefs; thus beliefs are an important determinant of agency. In a deterministic or a compatibilistic formulation of free will, beliefs would be a transitive element in the causal chain; in a libertarian formulation the person can act upon the beliefs with a constellation of determinants which include a choice-component (agency), and not as a product of necessity.

Is there a worldview issue here? That is, is the naturalist forced to assume there is no agent-causation since all effects are caused by something previous, some previous events? The answer is yes. The naturalist paradigm is deterministic. To posit agent causation one needs a

worldview that allows for a causal source for some acts, at some point, that is pure agent, and uncaused by any prior events. The fall of the dominoes is caused by a pure first cause—an agent.

The bottom line here posits two types of responsibility. Type I responsibility is rooted in our libertarian free will, and the choices we make as a function of our nature, and nurture, interacting with our free will decisions, albeit situated-free-will decisions. Type II responsibility is rooted in our compatibilistic free will: the choices we make reflect "the transitivity of causality," they are a function of previous events, our developmental nature and nurture, and our current situation. In Type I responsibility there is room; in Type II responsibility there is doom. In Type I responsibility there is opportunity for the suicidal, the obese, the homosexual, the bully, the musical, and so on, via prescription, and choice; in Type II responsibility there is only description.

Working With The Issue of Choice

The two provocative issues in the field of orientations (whether a suicidal orientation, an eating orientation, a sexual orientation, an athletic orientation, a musical orientation, a writing orientation, and so on) are *choice* and *change.* Parents, educators, psychologists, therapists, researchers, and politicians, are pragmatically interested in these two issues, as these are the areas where learning occurs. *Choice* and *change* are the front-lines. This is the place where change would align with hope and promise. If *choice* is possible, then therapists, parents, educators, politicians, and so on, want to know how they can influence choices. If *change* is possible, these same groups would want to know how they can influence change. Both *choice* and *change*, as issues, can be informed by the smoking analogy.

Considering the issue of *choice*, a simple question that can be asked is this: does one choose to smoke? The question is more dramatic with a change of fields: does one choose suicidality? Does one choose an eating orientation? Does one choose a sexual trajectory? Does one choose a musical trajectory, or an athletic trajectory, or a creative writing trajectory? One of the more prominent orientations where choice has been at the forefront of the discussion, and where the argument is often made that one does not choose, is a sexual orientation. So, does one choose to...?

There are influential arguments made for both the essentialist position (i.e., one does not choose) and the voluntarist position (i.e., one does choose) regarding a sexual orientation. For references and discussion see Stein (1992, p.328-329). For many, social-constructionist voluntarism, that is, a "choice-based" argument and position, is viewed as the purview of the ill-informed, the intolerant, the bigot, the religious extremists, or the phobic. Even so, it seems relatively safe to admit: (1) there is a substantive case to be made for choice, and (2) there are at least elements of choice for all of the various trajectories listed above (i.e., smoking, homosexuality, suicidality, eating problems, musical success, and athletic prowess). There are choice-points, and choices made.

With the smoking analogy as the principal focus at this point, there is something interesting about choice, and something informative about choice. It can be clearly seen that the time variable must be factored into any discussions on choice given a developmental trajectory. Thus, it is prudent to think of stages of choice, the context of choice, the intrapersonal and interpersonal dynamics of choice, and, perhaps, the broader philosophy of choice, for all stages of the developmental trajectory.

Smoking is a particularly useful analogy because it is clear that one's choice to smoke at the seminal stage is different from one's choice to smoke at subsequent later stages. One

chooses to smoke initially even though such a choice may be influenced by social pressure, environmental pressures, psychological immaturity, or biological correlates. The choice may not be of the caliber one sees when someone chooses a career in medicine, a graduate school, a spouse, a job, a car, or a friend, but there is a choice. The choice may not be of the caliber one sees when someone chooses a pet, a lottery ticket, or a speed limit to obey, but there is a choice. One chooses to smoke initially, later, and later still, but these multiple choice-points differ with respect to the caliber of the choice at each stage.

Over a period of time, the choice to smoke atrophies—one seems to lose the ability to choose, lose the ease of making simple, free choices, and even, eventually, lose the sense of choice. The caliber of choice changes over time and circumstance. Real choice atrophies over time. Choice leads to behaviour which becomes interesting, then custom, then habit, and then, addiction. The choice-deterioration leads to an identity—something dabbled in, something constructed, something crystallized.

So, is the habitual smoker choosing to smoke each time she smokes? Yes. But there is a caveat. There is a change in the nature of choice over time. The choice one makes to smoke on day one and day two is not the same caliber of choice the smoker makes at day 101 and day 1001, or day10 001. The caliber of one's choices changes; the history remains.

While a similar phenomenon is evident with the alcoholic, there is evidence of striking brain damage associated with alcohol addiction—a degree of damage that interferes with subsequent brain-based choices (Urschel, 2009). This does seem to place alcohol in a different league from nicotine, as an analogy. Yet there is something to be noted even here as well: choice caliber changes!

The notion of brain-alteration as a function of substances—external substances or internal substances—is interesting and important in multiple ways. First, brain-alteration can be

good or bad, that is, it can be evidence of good learning or evidence of maladaptive learning. Second, both internal and external substances can affect choice.

The changes in the caliber of choice associated with *external substances* like alcohol could be termed *reactive effects*. There may be similar effects related to cocaine, for example, and perhaps to a lesser degree for nicotine. It is an important area of study to profile substance effects on brain function related to choice.

The changes in the caliber of choice driven by *internal processe*s like the psychological processes of habit formation, or addiction (internal neurochemical substances, brain structures, and cognitive infrastructure), could be termed *endogenous effects*. Both sources—*reactive* and *endogenous*—are important in understanding influences on the brain, and subsequently upon choice. In essence, there are two aspects to influences upon choice, external influences (innocuous, noxious, and constructive) and internal influences (bland, destructive, and constructive).

A philosophical tangent here raises the question about determinism and free will in this context of choice. Arguing for choice, and different calibers of choice over time, a schematic that is pro-choice, in the context of time, helps (see Table 8). The schematic involves libertarian free will as a basic assumption but with a progression to greater degrees of event causation or even determinism over time. The model targets libertarian free will as seminal, or a seminal point (Stage I). Then Self and Events interact over time and choice is mitigated as one progresses (or regresses) to soft determinism/compatibilistic “free will” (Stage II) where the caliber of choice has atrophied. As the schematic presents Stage III, causation is now for all practical purposes event causation, and choice is reduced even further to a shadow state.

Table 8. Three types of choice as a function of the cause of the choice.*				
Conventional View	Choice	Caliber of Choice	Cause	Stage
Free Will	Libertarian	CHOSE	Agent (Self)	I
Soft Determinism	Compatibilism[1]	Chose	Interactive (Self & Events)	II
Determinism	Pre-determined	chose	Events	III

*Note. The caliber of choice changes over the three stages. Choice is strong at Stage I but shadowy, or negligible, at Stage III.

The schematic is rooted in three assumptions that are tied together by a time variable. First, it is assumed that human beings have libertarian free will at certain choice-points, points that have minimal or no constraints, points that are often initial causes in a subsequent causal sequence, points that are perhaps random, and points that are perhaps tangential. At such points agent causation is clearest, and choices are easy.

Second, it is assumed that as constraints build over time (e.g., cognitive or social blocks, empirical evidence, arguments, rationalizations, beliefs, desires, self-deceptions, propaganda, dogmas, media sound bites, and so on) libertarian free will diminishes and event-driven-will increases. Choices seem possible but difficult, possible but transient.

Third, it is assumed that this event-driven-will (a form of compatibilism) reaches, or can reach, a state of apparent determinism for all practical purposes. At this stage, one has the sense of entrenchment, inherent nature, and fixedness. Choice might seem possible but success seems nearly hopeless, if not entirely hopeless.

One way to characterize this schematic assigns varying degrees of determinism (or event causation) to an act, particularly as a function of learning, time, and history, in conjunction with

[1] "Compatibilism offers a solution to *the free will problem*. This philosophical problem concerns a disputed incompatibility between free will and determinism. *Compatibilism* is the thesis that free will is compatible with determinism. Because free will is taken to be a necessary condition of moral responsibility, compatibilism is sometimes expressed in terms of a compatibility between moral responsibility and determinism." (Stanford Encyclopedia of Philosophy, downloaded from http://plato.stanford.edu/entries/compatibilism/#1.4)

various degrees of free will (ranging from zero to 100%). As pictured in Figure 4 at Time 1 a great deal of agent causation can be manifested (showing, primarily, libertarian free will). The oval in the Time 1 column would reflect the acknowledgement that there could indeed be some event causation influence but it would not be seen as primary, relevant, or overpowering. Over time the degree of agent causation diminishes and the degree of event causation increases. However, even at Time 4 when event causation seems overwhelming there is still room for that small oval of agent causation, a change of mind, desire, an acknowledgement that could function as a seed, a causal seed for change. It is libertarian free-will in flux.

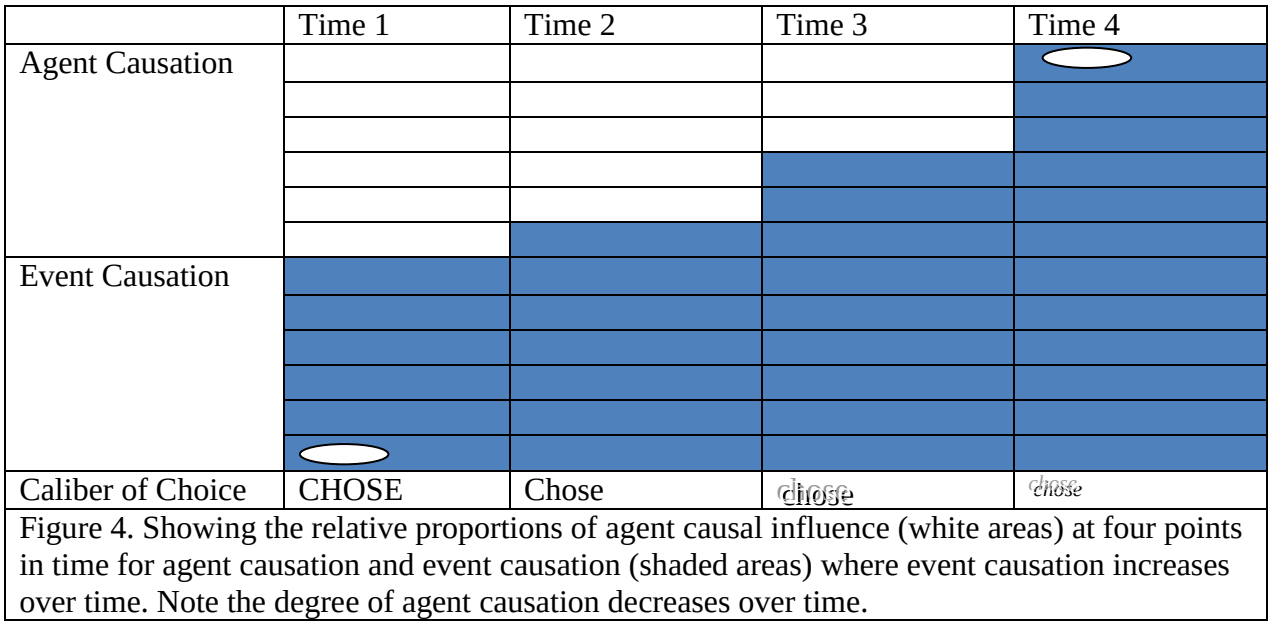


Figure 4. Showing the relative proportions of agent causal influence (white areas) at four points in time for agent causation and event causation (shaded areas) where event causation increases over time. Note the degree of agent causation decreases over time.

Smoking illustrates this change. It seems to be a commonplace notion that many habitual smokers feel they are not in control—not choosing. Yet, they know full well that there was a point in time (Time 1) when they clearly made an unconstrained choice to pick up a cigarette, and smoke it. Yes, there may have been some external determinants (e.g., peer pressure) and internal determinants (e.g., I'm a rebel, curiosity) but the agent causation was strong, free, and driving the choice made.

Subsequently, say two weeks or two months after the initial choice, agent causation is still strong (Time 2), but constraints are starting to build and event causation is growing in strength. At Time 3 there might be a rough equivalence in power between agent causation and event causation.

Later, for example at Time 4, do smokers feel they have lost the choice to smoke, or rather "to not smoke?" Yes! Do smokers often regret ever having started down that road? Yes! At Time 4 smokers feel they are not in control, they are for all practical purposes powerless. Habitual smokers can choose to not smoke and then fifteen minutes later collapse into a smoking behavior, again …by choice. This latter choice, or choice-set, is clearly different from the choices made 15 minutes earlier, and the initial choices made 15 years earlier. Event causation is overpowering agent causation at Time 4. The initial choices were free, broad, retractable, and apparently "timeless." The latter choices are constrained by time, vice-like, at the level of hours or minutes or seconds.

At one paradoxical level, smokers are choosing to not smoke at the same time that they choose to smoke. The choices seem to be drawing from different resource pools. The choice to not-smoke at the initial stage of the smoking-orientation trajectory was as strong as the choice to smoke, drawing from relatively equivalent resource pools. Later, the choice to not-smoke wanes, with respect to power, as that resource pool dries up. One loses resources in this particular pool over time. Over time, the resources that support choosing to smoke increase.

Analogically, is it not possibly the same scenario for eating disorders, for suicidality, for homosexuality, for thieving, for running, for lying, for practicing the piano, and for writing poetry? Choosing to start certain practices seems to draw from a rich resource pool. One breaks inertia and starts the train rolling with seemingly easy choices—agent causation. Choosing to stop certain practices, certain thoughts, and certain loves, can be easy, initially. The

effortlessness experienced initially can be mitigated over time, eventually to the point of nullification.

A brief digression on two approaches to choice might help here. The first approach deals with causality from a formal structural perspective. The second approach is developmental and temporal.

Contextualizing Choice

A Philosophical Context (Aristotelian *Material, Formal, Final*, and *Efficient* Causes)

In a classical Aristotelian sense, causality is segmented into *material* cause, *formal* cause, *efficient* cause, and *final* cause. When the now-habitual-smoker first chose to smoke his initial choosing is arguably viewed as an example of a prepotent *efficient* cause—a personal choice—something effected primarily by his own personal agency. The other elements of cause which are minimal at this initial point of inception are: (1) *final* cause (i.e., rebellion, curiosity, image enhancement, status, etc.), (2) *material* cause (the cigarette, the packaging, the lighter, the book of matches, etc.), and (3) the *formal* cause (i.e., the blueprint, whether it be the media images, the Marlborough man, the smoke-swirling artist in a favourite film noir or existential novel, peer pressure, the admired peer, etc.).

When some young person begins smoking, the *final* cause and the *formal* cause, though motivating and important, are minimal in setting the process in motion. It is the *efficient* cause (personal agency, or choice) that is bearing the foremost portion of the causal load. When the habit is formed (or the addiction surfaces) the *efficient* cause (personal choice or agency) is minimized and the *final* cause and the *formal* cause are bearing the load. The original *final* cause (curiosity, play the rebel, be the artist, etc.) broadens to include the nicotine fix and the cognitive construction of an identity or orientation: “I am a smoker.” The smoking experience is paired (as

in classical conditioning) with other elements of the personal psyche, identity, and behaviour. The original *formal* cause (qualities of the rebel, qualities of the artist) continues but there is a shift in that the *final* cause takes on, in part, the role of the *formal* cause. Smoking becomes paired with multiple personal items of one's psyche. Thus, *my cup of coffee* becomes "my cup of coffee and cigarette;" my *reading a book* becomes "my reading a book and having a few cigarettes." Sex, music, TV, cars, boats, and so on, all become paired with the smoking—as image and as reality. Formerly neutral stimuli like a cup of coffee are now conditioned stimuli generating physiological and psychological reactions—conditioned responses—linked with smoking. At this point the *efficient* cause is often too weak to overcome the pull of the *final* cause and the *formal* cause. Does one then choose to smoke? Not at this point! In fact, many, if not most, express a desire to choose to "not smoke," but as the saying goes: "the spirit is willing but the flesh is weak."

"Why would anyone choose such a habit?" Good question? The answer to the question is obfuscated when one takes a narrow, punctiliar point of view limited to one point in time; but the answer is relatively clear when a panoramic, temporally linear view is adopted. One chooses initially with relatively innocuous motivators in play; one chooses later because choice (*efficient* cause) has atrophied as a function of habit, addiction (physical and psychological), entrenchment, and more powerful *formal* and *final* causes in play.

Does this analogy in any way seem similar to the homosexual experience? Were initial choices made (*efficient* cause) that were subsequently nullified as initial *formal* causes (i.e., peer play, cross-age peer seduction, risk-attraction, novelty, "exotica," abuse, rejection, curiosity, opportunity, paternal absence, clubs, etc.) strengthened and *final* causes (endorphins, rush, pleasure, acceptance, image, identity, etc.) solidified? In the smoking habit, the answer would seem to be yes. If the analogy does not hold for homosexuality, where does it break down? If the

analogy does not hold for eating problems, where does it break down? If the analogy does not hold for suicidality, where does it break down?

Indeed, what about an application to eating/dieting behaviours? The *final cause* is the ideal body image; the *formal cause* is found in the blueprints offered by media, peer practices, diet books, models, and so on. The *material cause* is the availability of foods, pills, and perhaps privacy; the *efficient cause* is the person making the choice. Eating problems and dieting practices are quite innocuous initially. But, like smoking, over time the initial apparently innocuous *efficient cause* is overpowered by the entrenchment associated with the empowerment of the burgeoning *formal causation* and *final causation* in play.

Similarly, what about an application to suicidality? The *final cause* might be the cessation of pain, or cessation of self, or the punishment of others; the *formal cause* is found in the blueprints offered by media, peer practices, models, and so on. The *material cause* is the availability of pills, weapons, automobiles, and so on; the *efficient cause* is the person making the choice. Ideation would be quite innocuous initially. Over time entrenchment occurs and *final causes* and *formal causes* grow in power.

What about applications to athletic behavior? What about musical prowess? What about the gifted writer? Is it reasonable to suggest that *final causes* and *formal causes* grow to the point of overpowering the innocuous initial *efficient causes*, initial *formal causes*, and initial *final causes*? Yes. In fact, the phenomenon can be tied to a multiplier effect (Ceci, Barnett, & Kanaya, 2003) and social multiplier effects (Dickens & Flynn, 2001). A slight push, or tweak, early in one's developmental trajectory can bend the twig to bridge a cavern; can set a snowball cascading to push an avalanche; and can turn a rivulet into a river. Small causes, nudges, can have large effects.

A Temporal Context (LOOK, LOOKS, BOOKS, BOOKED)

The temporal context is characterized by a seminal point (a LOOK), a broadening curiosity (continued LOOKS), a deeper and longitudinal exploration (BOOKS, reading and writing them), and finally a locked-in entrenchment (BOOKED as in the legal setting). This second approach to frame the issue of choice as developed here is based, in part, on an observation made by Epstein (1992). The following chart is structured after Epstein (1992, p. 262) who illustrates change-over-time and the merits of a closer look. In his closer look at homosexuality over time, he makes the point that dualisms are more informative when integrated conceptually. Thus the dualism Same-Different (regarding homosexual fundamental ontology) when merged with the dualism Choice-Constraint (regarding the role of the will) actually facilitates thinking. It can be illustrated as in the chart below. The information in the chart-cells is, for the most part, from Epstein. It presents historical conceptualizations of homosexuality as a function of the two variables, along with the various issues addressed in particular decades. Thus, in the 1950's and 1960's homosexuals were viewed as the *same* as heterosexuals but lacking choice, whereas, in the 1970's the attribution of *choice* had shifted and *choice* was acknowledged. In the 1980's and 1990's the attribution of *choice* is still acknowledged in the political and radical wings. Later decades seemed to shift back to constraint. We see the changes over time on more than one dimension. Moving, with some overlapping, from Integration (the 50's and 60's) to Transformation (the 70's) to Radicalism (the 80's and following) and now to Rights (the 90's and following) we see conceptual shifts over time.

	CHOICE	CONSTRAINT
SAMENESS	**Transformative** Post Stonewall Gay Liberation Civil Libertarianism 1970s	**Integrationism** (for example, homophile movements) 1950s-60s
DIFFERENCE	**Radicalism** Political Lesbians Cultural Radicalism 1980s-90s	**Civil Rights** Minority/Ethnicity Cultural Radicalism 1990s-2000s

Using the same charting cells for an individual-smoker-trajectory rather than a historical analysis is informative. It is possible to map smoking onto the four cells to capture similar dualisms—Same-Different (regarding smoker-ontology) and Choice-Constraint (regarding the role of the will). What is more easily seen from the chart below is that choice can be viewed as evident at Time 1 and Time 2 (earlier in the smoking trajectory), but lost, or diminished at Times 3 and 4. In addition, differences between smokers and non-smokers are more evident politically and psychologically at Time 1 and Time 4.

	CHOICE	CONSTRAINT
SAMENESS	**Transformative (Time 2)** ---------- SMOKING (largely experimenting, attracted to novelty, elements of seduction ...) *-in need of freedom, opportunity...*	**Integrationism (Time 3)** ---------- SMOKING (conditioned- classical and operant... thus learning and solidification are prominent) *-in need of information, education, reformation ...*
DIFFERENCE	**Radicalism (Time 1)** ---------- SMOKING (Rebels...) *-in need of "nothing" ...*	**Rights (Time 4)** ---------- SMOKING (identity and addictions...) *-in need of medical rights, equal rights ...*

Of equal interest, the developmental sequence for the ontogeny of smoking (personal ontology related to smoking), progresses in a clockwise fashion from Time 1 through to Time 4. That is, at Time 1 the early adolescent rebel, fearing nothing, and perhaps thinking little, smokes. Conceivably, he smokes simply because the cigarette is there. At Time 2 the practice expands driven by novelty, experimentation, exploration, euphoria, peers, and so on. At Time 3 learning theory (classical and operant conditioning) drives a consolidation of the behaviour, the

image of self (orientation), attitudes, beliefs, norms, etc. At Time 4 we see entrenchment in the form of psychological and physical variables.

Homosexuality would map onto this sequence in a similar fashion, as could Zoophilia, pedophilia, addictions to pornography, video gaming, and perhaps even paraphilias like necrophilia and coprophilia. Moreover, the same sequence could apply for chess, reading fiction, playing a guitar, computer programming, TV viewing, and behavioural patterns like lying and stealing. Hence a learning model can be seen to apply to such scenarios and trajectories without much difficulty.

The nature of LOOKING—Intensity and Quality—is highlighted for various aspects of Temporality by the terms—LOOK, LOOKS, BOOKS, AND BOOKED). This sequence captures the steps and elements of the learning process generally. At Time 1 there is a LOOK at something—a singular act—and that LOOK grabs one's interest, or attention, initially. At Time 2 a person LOOKS (the present tense signifying continuous action); that is, the person spends time looking into the experience driven by novelty, curiosity, experimentation, trial and error, on the one hand, and peers, media, and parents, on the other hand. In effect, persons at this Time 2 phase can be characterized as looking into the phenomenon more broadly and experientially. The psychology of curiosity pushes one to interesting discoveries and growth, but as Kashdan (2009) notes: curiosity can push one to the sinister side as well. Indeed, there are dark sides to curiosity (Ariely, 2008; Kashdan, 2009) and creativity (Cropley, Cropley, Kaufman, & Runco, 2010). Likely, at Times 1 and 2 one would be influenced by: (1) curiosity in all its manifestations (Kashdan, 2009), (2) multiplier effects associated with the look, with nature, and with the environment (Ceci, Barnett, & Kanaya, 2003), and (3) chance.

At Time 3, multiple aspects of books emerge: one explores more deeply by drawing upon books, the BOOKS that contain the existing, systematized formulations and arguments. At

the same time one is like a book that is being formed, developed, and written. Here the deeper learning is ascribed and transcribed onto neurons (e.g., pages) for memory consolidation and organization (i.e., binding).

The looking now comes from three broad, and technically "outside," sources. First, this looking comes from the *looking-at-us-of-others*, the others who are reading "the BOOK" (i.e., the self that we are developing) and reporting—scholars, researchers, biographers, teachers, psychologists, sociologists, novelists, etc. These "looks" can be in the form of texts (specific, like report cards or biographies; or general like theories or labels) written about aspects of humans that are personally relevant to us, to our individual self. We are looking at their systematized *looking-at-us*. We read their BOOKS (including their reports, their studies, their theories, and their articles). Secondly, the looking can be sensed via *Theory-of-Mind* where one infers what others are thinking about one's self—"the BOOK," the self, that one is creating. Thirdly, the looking comes from the *self-looking-at-self*. We are utilizing self-reflection which is viewing ones' self where the self looked-at is an object, thus, self-as-object—like a BOOK. At Time 3, then, one is acquiring systematized information about ones' self via study (reading the BOOKS, literal and figurative), Theory of Mind (reading others), self reflection (reading ones' self), and then self construction (i.e., writing the book that one is becoming).

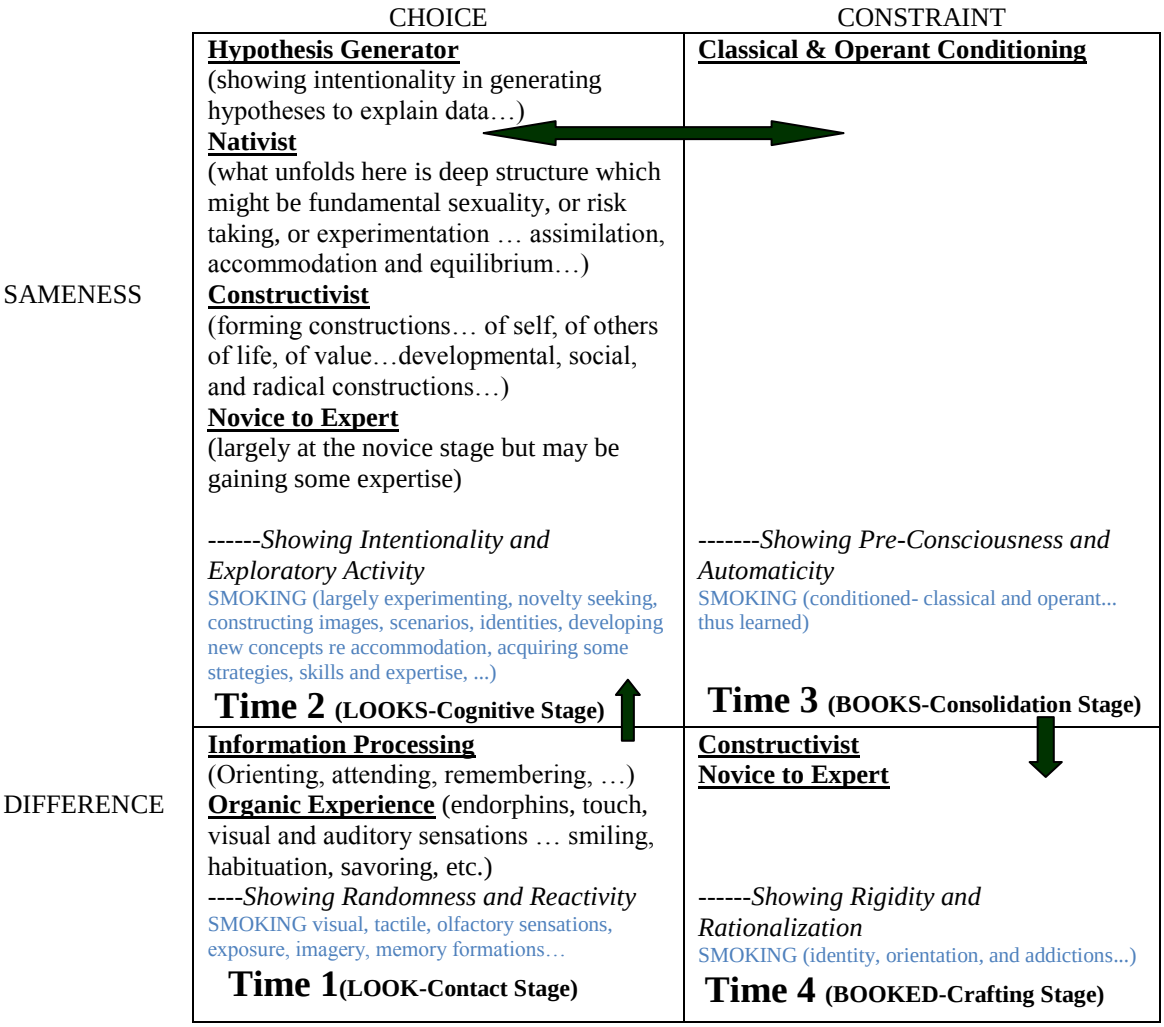
At Time 4 the person is arrested and BOOKED using the legal analogy of: identified, charged, and constrained by the weight of the law. A key feature of this last stage is constraint, locked-in and locked-up.[1] With respect to looking, the object—the self—is available in a quasi-fixed state for all to see (self, peers, scholars, community, etc.) even if a little hazily.

[1] It doesn't appear to be a desirable state. Agreed! Today, once again, I heard the claim: "Why would anyone choose homosexuality given what follows: the oppression, hostility, ridicule, and so on?" In line with the smoking analogy one could ask, "Why would anyone choose to smoke given what follows: the costs, chronic coughing, loss of stamina, lung atrophy, ridicule, and harassment?" They wouldn't; but they did. Eventually, at Time 4, locked-in and locked-up.

The model serves to illustrate how choice and the absence of choice can coexist, albeit diachronically. Choice is strongest at Time 1, still relatively strong at Time 2, diminished by Time 3, and largely absent at Time 4. The Temporal model (a LOOKING Model) serves to point to possible varying roles of nature and society. Society is the teacher at Time 3 and the custodian at Time 4, whereas nature (biological and psychological) and environmental influences are driving the explorations at Time 1 and Time 2. The model serves to explain a transition from cognitive constructionism (Time 1 and Time 2) to social constructionism (Time 3) to quasi-essentialism at Time 4. The term quasi-essentialism is used here to flag the issue of an appearance-reality distinction. The Time 4 alcoholic, pedophile, racist, thief, chess master, musician, and so on, all present the appearance of having an "essential nature," when in reality it is more accurate to assume we are dealing with an "entrenched construction."

In terms of the various models of the learner we could map those onto the chart at conceivably logical points, and in something like a heuristic fashion (as can be seen in the following chart). The arrows show a general linear progression, though not a fixed progression, and the reciprocating arrow between Time 2 and Time 3 is indicative of substantial back and forth activity. Time 1 (Contact Stage) is an exposure stage where external stimuli impact the person physically and psychologically. One's behaviours are showing *Randomness and Reactivity*. It is followed by Time 2 (Cognitive Stage) where experiences are sought, explored, explained, evaluated, and so on. Here hypotheses are generated, tested, rejected, used, and revised. This activity results in constructions being formed. One's behaviours are showing *Intentionality and Exploratory Activity*. At Time 3 (Consolidation Stage) some of the hypotheses generated, the constructions formed, and the accommodations developed in Stage Time 2 are rewarded, firmed-up, used instrumentally, and grafted in to the sinew and sap of the self. Others are extinguished lacking reward or merit. Still others are suppressed or repressed,

hidden—hidden from others, hidden from self, or hidden from both self and others. In traditional learning theory, those constructions that are punished would be merely suppressed. One's behaviours are showing *Pre-consciousness and Automaticity*. In Time 4 (Crafting Stage) the constructions formed and consolidated in earlier stages (Time 2 and Time 3) are now crafted or refined along their logical trajectory. One's behaviours are here showing *Rigidity and Rationalization.*



Considering this mapping with respect to smoking, as noted in the cells, we see there is a rudimentary logic and consistency in the mapping. Similarly, mapping a sexual identity onto

these cells is relatively straightforward. In stage Time 1 we have individuals exposed to random sensory experiences and cognitive experiences. In Time 2 we could hypothesize a struggle between competing identities given the naïve constructions being formed, the competing hypotheses being generated and tested, and the social scaffolding available, or unavailable. The smoker identity competes with the non-smoker identity; the homosexual identity competes with the heterosexual identity; the athletic identity competes with the non-athletic identity; the writer identity competes with the non-writer identity. Since we are facing competing identities we are back to the question, why do some (not the majority) become smokers (psychologically and/or physically dependent), and some (not the majority) become homosexuals, and some (not the majority) become writers?

The answers are found in various venues: experience, learning, multiplier effects, predispositions (e.g., to risk, to novelty, to impulsivity, to addiction, etc.), choices, an absence of barricades, rewards, apathy (paths of least resistance), and so on. Nature, nurture, constraints, luck, chance and choice, all act interactively but are contextualized in time and by time, much like all learning. And choice is a key point.

Applying the model to eating/dieting behaviours might look something like the following chart.

	CHOICE	CONSTRAINT
SAMENESS	**Hypothesis Generator** (showing intentionality in generating hypotheses to explain data…) **Nativist** (what unfolds here is deep structure which might be fundamental sexuality or risk taking, or experimentation … assimilation, accommodation and equilibrium…) **Constructivist** (forming constructions… of self, of others of life, of value…developmental, social, and radical constructions…) **Novice to Expert** (largely at the novice stage but may be gaining some expertise) ------*Showing Intentionality and Exploratory Activity* EATING/DIETING (largely experimenting, novelty seeking, constructing images, scenarios, identities, developing new concepts re accommodation, acquiring some strategies, skills and expertise, …)	**Classical & Operant Conditioning** -------*Showing Pre-Consciousness and Automaticity* EATING/DIETING (conditioned- classical and operant... thus learned)
	Time 2 (LOOKS-Cognitive Stage)	**Time 3 (BOOKS-Consolidation Stage)**
DIFFERENCE	**Information Processing** (Orienting, attending, remembering, …) **Organic Experience** (endorphins, touch, visual and auditory sensations … smiling, habituation, savoring, etc.) ----*Showing Randomness and Reactivity* EATING/DIETING visual, tactile, olfactory sensations, exposure, imagery, memory formations…To foods, or diets	**Constructivist** **Novice to Expert** ------*Showing Rigidity and Rationalization* EATING/DIETING (identity as voracious eater or militant dieter, … and addictions…)
	Time 1 (LOOK-Contact Stage)	**Time 4 (BOOKED-Crafting Stage)**

Could this approach apply to suicidality as well? Would such an analogy offer any better understanding of suicidality? The LOOK is the simple event that grabs one's attention. It might be a family member, a song, a rock group, a musical hero, a literary hero. It could be an egregious media story, magazine article, or in-school history topic (e.g., suicide bombers of 9/11, Japanese Kamikaze pilots in World War 2, Jonestown and Jim Jones, the Halle-Bopp comet suicides, suicidal school-shootings, ancient Roman suicidal practices, Masada, euthanasia, and so on).

The LOOKS stage is the reflection on the initial thought—the ideation, and the investigation. One reads about the various suicide stories, the psychological literature, the historical literature, and so on. One listens to the lyrics of popular music addressing suicide. One tracks the Internet for stories of suicide. One generates questions like: "What if I died? Would my parents be wounded?" "Would people regret having treated me this way?" "Would there be status or glory in suicide?" One generates hypotheses from the questions. One generates constructions of various scenarios.

At the BOOK stage there are rewards being distributed for certain acts (real or imagined) and learning is taking place. An identity is being learned and behaviours are becoming automatized. One is looking at the *looking-at-us-of-others*, drawing on *Theory-of-Mind*, and ruminating as *self-looking-at-self*.

At the BOOKED stage the person is locked into an identity, an orientation, or a trajectory. The entrenchment is precarious with respect to suicidal plans.

Does this approach apply to musical prowess, athletic ability, academic achievement, lying, cheating, stealing, charity, and so on? It seems that many psychological and behavioural trajectories do follow such a course. There are good addictions and bad addictions. Good addictions align with warranted beliefs based on proper brain function. Bad addictions are more likely in line with faulty beliefs, whether the outcome of bad thinking or at a more fundamental level, bad brain function.

What type of behaviour does not appear to follow such a course? Explosive, emotionally-driven behaviours (e.g., road-rage, manslaughter, post-partum infanticides) are not identities; whereas, psychopathic acts (e.g., serial murder) and sociopathic acts (e.g., genocide) are identities because of the large cognitive component of the act. Nevertheless, the law assumes there is an element of choice (and thus responsibility) in both of the above scenarios. However,

the choice would be diminished in the emotionally-overpowering situations. The law does recognize that the caliber of choice is relevant.

Choice-points

One way to help situate the notion of choice is through the use of the idea of temporal choice-points. There are various points in time when choices are made and directions are changed, formalized, or crystallized, across a developmental span. The caliber of the choice at different choice-points differs as a function of the diverse variables in play at each point. A choice-point at the seminal stage in time (i.e., the initial point) is of a different quality than a choice made at a later point when habitual influences may be important. The illustrative example used earlier was smoking: the choice-point regarding the first cigarette is different from the choice-point for 100th cigarette which in turn is different from the choice-point for the 10,000th cigarette. The difference is with respect to the nature and caliber of the choice.

In view of such differences, both the motivation, and the motivation spectrum, for particular choices are fundamental considerations. Competing causes (material, formal, and final) are important conceptual considerations. Competing choices are important considerations given the complexity of human motivation. It is much too simple to lock into one level of synchronic analysis and say that people wouldn't choose what in fact they did choose. Such a simplistic analysis is like a communal or corporate rationalization. A fleshed-out philosophy, and psychology, of choice does point to the importance of choice in the temporal context of choice-points.

Furthermore, the phenomena of the multiplier effect (Ceci, et al., 2003) and the social facilitator effect (Dickens & Flynn, 2001; Wagstaff, Wheatcroft, Cole, Brunas-Wagstaff, Blackmore, & Pilkington, 2008) help clarify how a trivial choice at an early choice-point can branch to a major effect at a future point along the developmental path. In a similar fashion, the

notion of the “nudge” (proposed by Thaler & Sustein, 2009) readily branches into something more substantive at a later time.

Chapter 4: The Issue of Change

Change and Possibility

A major issue to consider in these analogies is the question of *change*. Beginning with the base analogy we can ask the question: can the habitual smoker *change*? No one is likely to offer the definitive answer: "No." Unpacking the question a little introduces such questions as: Do you mean change temporarily, or permanently? Do you mean change in terms of behaviour, or in terms of orientation? Do you mean change as an act of will, or in response to medication, therapy, or education? Do you mean change by simple choice, or by a complex constellation involving biology, environment, chance, and choice?

The obvious answer to the question *"Can the habitual smoker change?"* regardless of the qualifying questions, the answer is: "Yes." Why such an answer? Such an answer is based on one's own personal experience of change (whether ideological, behavioural, or commonsensical), or perhaps knowing change stories of some who have changed (personal acquaintances or autobiographies), or perhaps just familiarity with change literature (empirical research and theory). Then, there is the reasonable claim that such an affirmative answer would be based on our fundamental philosophical assumption of personal responsibility and accountability. Change might be judged to be very, very difficult for most habitual smokers, but nevertheless possible.

Here's 'the rub' for consideration: the potential to change, changes. At one level the potential to change is a function of choice-points and the caliber of choice at those choice-points. This would hold whether one is addressing a behavioural change, a belief change, or an identity change. Choice comes in different calibers for the *inception* of an identity trajectory and over the course of the *development* of an identity. As well, the caliber of choice differs for the *cessation*, or *replacement*, of an identity.

Moreover, *cessation* of the behaviour (and later the identity) is just a first step—cessation, itself, likely occurs in stages, is perhaps spasmodic and periodic, and surely is contingent on multiple influential correlates of internal and external resources, as well as time and luck. For example, one might quit smoking for 15 minutes the first time, 20 minutes the second time, and 5 minutes the third time. Another might actually break the nicotine addiction within a matter of days or weeks. But the psycho-social construction "smoker" (the identity, the associated entrapments, the orientation) can take months or even years to dissipate as a new psychic self image is slowly constructed, an image that is no longer plagued with psychic items attached to the cigarette. One needs a new competing *material* cause (e.g., the patch, gum, etc.), a new *formal* cause (i.e., the various therapeutic algorithms, strategies, or life-style models) and a new *final* cause (i.e., health, energy, athletics, cleanliness, freedom, your child's image of you, or just a monetary benefit).

In a sense, these competing causes are in conflict as now two competing identities contend for primacy. The victor, with respect to an identity change, is likely determined by the combined strength of the *formal* cause and the *final* cause—empowering the efficient cause—as a new self image is slowly constructed. Habitual smokers more often than not fail to change, even when they want to change, and plan to change. It would seem to be similar for video game addicts, internet pornography addiction, homosexuality, those with eating disorders, or multiple other identities that one categorizes personally as problematic.

In terms of change in the Temporal-Context-Model (LOOK-LOOKS-BOOKS-BOOKED) there is a projected change sequence. For a change in a smoking orientation one LOOKs at Time 1 (T1) at one or more change triggers (being pregnant, or having a child, ostracism to the cold outdoors, perhaps a cancer scare, even a miserly attitude to money, etc.). These various reasons to quit can move one to T2. In this second stage one is exploring quitting

novelties and possibilities (hypnosis, acupuncture, gum-chewing, patches, "cold-turkey," etc.). Also, one might be generating statements that serve as hypotheses providing motivational intentionality (e.g., smoking is killing me, the pretty blonde likes non-smokers, etc.) or statements that serve as defeaters (e.g., smoking relaxes me, smoking keeps my weight down, smoking gives me status, etc.). These building blocks facilitate the making of constructions, that is, identity constructs (e.g., I'm a smoker, I'm a rebel, I'm an artist, I'm not my parents, I'm a reformed smoker, I'm a health nut, etc.). With the new intentionality (i.e., I'm an ex-smoker) at T3 one is learning a new set of behaviours (reading a series of BOOKS, theoretical BOOKS, self-help BOOKS, and writing a new "personal BOOK") through: (1) behaviourist engagement with reinforcement (e.g., imaginary rewards, peer approval, physical rewards) and extinguishing an old set of reinforcers amidst the travails associated with extinction, (2) Cognitive self-regulation strategy acquisition, self-efficacy beliefs development, reflective processing, memory formation, and (3) Time investment in strategic habit formation and the development of automaticity. Later, rather than sooner, the person is BOOKed, at T4, and incarcerated (constrained) by the new learning. Unfortunately for many, it can take discipline, focus, work and time, even years, to write a new personal book, a new orientation for self.[1]

Does this smoking analogy seem, in any way, like the issue of homosexuality and change? If the analogy does not hold for homosexuality, where does it break down? Are there parallels to issues related to identities like suicidality, eating disorders, paraphilias, drug addictions, adultery, pornography, gambling, shopping, video-game addictions, and so on? If so,

[1] On a personal note, I smoked from the time I was 11 until I turned 25. I tried to quit many times and failed usually after a few hours, or day or two—knowing the damage I was doing to my body, knowing that I was allergic to cigarette smoke, knowing the monetary cost, knowing the moral cost. Even when I finally, successfully quit at age 25, I still considered myself a smoker. I carried a half empty package of cigarettes around with me in my shirt pocket for about two months, doubting that I would be a successful non-smoker. I dreamed about smoking. I longed for a smoke—a longing based initially on physical cravings, then on psychological cravings, then on something other than craving. Months after quitting I would be surprised by occasional overwhelming, out-of-the-blue, urges to start smoking again. It was as if I had to relearn every event in my life as an event-minus-cigarettes. It was two years before I finally felt free, new.

then analogizing, model-building, and multiple-perspective-taking are potentially valuable tools for thinking about identities where change might be sought. Clearly, an important consequence of such models and analogizing is the *change* issue.

Of the analogies, with respect to change, perhaps homosexuality is most prominent for several reasons. On the one hand, the notion of change, from homosexuality to heterosexuality, is highly politicized, and interlaced with political correctness, speech codes, professional resistance, tolerance, and hate speech. Thus, by implication, it is also more obviously linked to academic freedoms (Somerville, 2009). Such academic freedoms underpin social freedoms, educational freedoms, personal freedoms, and therapeutic freedoms. On the other hand, one could study the change from heterosexuality to homosexuality which might be possible in the segment of the lesbian community, for example, where the adoption of homosexuality is seen by some as a logical political outcome of feminism (cf Greenberg, 1988, p. 481).

The change issue is one that counselors and educators, not just academics, need to consider, and reconsider, on a regular basis. For some time the popular side of the debate held that homosexuals are "born that way" and any attempts at changes—therapeutic attempts, or conversion attempts—were often viewed as unethical or harmful. Jones and Yarhouse (2011) note that in 2005 the American Psychological Association held the absolutist view. Their direct quote (p. 404) from the APA is: "Can therapy change sexual orientation? No... .[H]omosexuality is not an illness. It does not require treatment and is not changeable." Regarding harm associated with therapy they quote from the American Psychiatric Association (1998): "...potential risks of 'reparative therapy' are great, including depression, anxiety, and self-destructive behavior."

More recently, some prominent figures in the research community, such as, Spitzer, are revisiting this issue and admitting that change may be possible for some homosexuals (http://www.newdirection.ca/research/spitzer.htm). One reason Spitzer's (2003) research claim

was getting such attention, independent of any methodological issues, was likely due to the fact that he was instrumental in the delisting of homosexuality from DSM-III in the 1970's. More recently, Spitzer has apparently retracted his 2003 inferences (Thornhill, 2012). Of interest, his 2003 data apparently were not retracted.

Reasons for questioning the creed contending that change is not possible are tied to at least three epistemological sources: *stories*, *research*, and *authorities*. Beyond the vascillating *authority* of Spitzer, as mentioned above, see the recent revised text by Maxmen, et al. (2009) on treating psychopathologies where an openness to change is considered. With respect to *stories* consider the existence of "stories of change" like that recently reported of Michael Glatze, the founding editor of the magazine Young Gay America, going straight (Glatze, 2007; Moore, 2007). Whether the change lasts, in such change-stories, has about the same degree of relevance as to whether the smoker succeeds in quitting after his first attempt, or second attempt, or third attempt. The question is whether one wants to change, and the methodology and efficaciousness of learning to change. In fact, discouraging those who wish to attempt to change from seeking counseling to facilitate this change is arguably unethical if not clearly unethical (Yarhouse & Throckmorton, 2001).

With respect to *research* on change, a recent and methodologically thorough examination of change has been advanced by Jones and Yarhouse (2007). They have attempted to be honest in their claims, thorough in their documentation, rigorous in their methodology, and bold in their venture. In fact, they seem almost too obsessive regarding their methodological thoroughness. Yet they have done an arguably admirable job, and with respect to a bottom line they do document change, although the change rates admittedly are low.

Nevertheless, their more recent report (Jones and Yarhouse, 2011) on longitudinal data over a six-to-seven year period provides information challenging both the "harm" criticism and

the "immutability" criticism. In their Phase I configuration of the study—the true prospective study, where participants were tracked over six time periods from the initiation of the study to its time 6 completion point—the change rate was 9% for the "Success: Conversion Status" and 11% for the "Success: Chastity Status." It looks like the conservative number of a 9% change-rate is a significant challenge to immutability. And the 20% (9 + 11) behavioural success rate is encouraging for those considering a different lifestyle option[1].

Other research may be less rigorous but does advance a research base for considering change. One web site (http://www.peoplecanchange.com/Is_Change_Possible.htm) reports on a review of 28 studies. In this review, using Kinsey scale criteria (shifts from K6/5 to K0/1), change was evident for 18.56% of the cases (418/2,252). They also note the NARTH studies which show even more dramatic change and the Spitzer study which reports "complete change" (for 19%) and "good heterosexual functioning" (for 60%) of a homosexual sample. The highest change rate reported was from Masters and Johnson (1979), and that was around 70%. In Throckmorton's (1998) review, all interventions (Psychoanalytic, Behavioural, Cognitive, Group Therapy, and Religiously Oriented) noted positive aspects and outcomes; however, the only statistics offered were for Psychoanalytic reports (ranging from 19-44% for rates of change). As with smoking, change in a homosexual orientation might be difficult, even seem impossible, but in view of change stories, and empirical reports, change ought not to be philosophically precluded.

In any move towards change there is a force of one sort or another pushing one towards change. One component of that force could very well be a simple desire to change, the "want" to change. One wants to stop eating so much food; one wants to stop dwelling on suicidal

[1] These quit rates are comparable to quit rates for smoking. See the note earlier Quit Rate note in the section addressing "Biological Influence For A Homosexual Orientation."

thoughts; one wants to stop smoking. The notion of "want" when dealing with changing orientations is central. Does the person with a problematic eating orientation, or suicidal ideation, or smoking orientation, or sexual orientation want to change? Does the person want to change and not want to change at the same time? Are there competing wants? Yes, often.

Does the smoker, for example, both want to smoke and want to quit smoking? It is readily conceivable that this is the case with competing wants: (1) running parallel to each other, or (2) in a serial pattern waxing and waning, or (3) perhaps with both parallel and serial configurations.

Consider the issue of sexual orientation. In the adult literature it is recognized that some homosexuals "want" to change to a heterosexual orientation, and some "want" to maintain a homosexual orientation. Then there are some who find competing wants occupy their psyche. On the one hand they want to change, but on the other hand they recognized they want to maintain the orientation. Continuous vacillation between wants can be characteristic for humans, as can the simultaneous wanting of two mutually exclusive outcomes.

Wanting to change (whether a smoking orientation, a homosexual orientation, an eating orientation, or a suicidal orientation) can be motivated by "*final causes*" such as personal religious values, worldview, parental pressures, health, money, or simply the belief that life would be better, or easier. At the same time wanting to maintain the orientation can be motivated by "*final causes*" related to pleasure, immediate stress reduction, personal relationships, emotional bonds, constricted thinking, or simply a path of least resistance as a failure of self-regulation. Which want wins?

Consideration of competing wants and parallel wants, and determining the stronger of the two, can be facilitated by drawing on another analogy—second language learning. There are parallels between the motivations towards various orientations and the motivations to learn a

second language, for example. Second language learners can have an integrative orientation (wanting to integrate with a community), an instrumental orientation (wanting to master a second language because it can serve a valuable purpose as a tool), or a combination of the two (see Gardner & Tremblay, 1994a, 1994b, Tremblay & Gardner, 1995). This conceptualization could readily apply to smokers, to homosexuals, to musicians, to readers, to writers, and perhaps even to suicidality in view of the contagion phenomenon. The motivation to do something can serve an integrative function (e.g., a parasuicidal person pursuing social support, help, understanding, in a social network), or an instrumental function (e.g., a suicidal person getting relief, getting help, getting attention, getting their way, or reducing pain).

Does the musician see the guitar-playing as an instrument for gain (i.e., girls, money, fame, creative composition, or outlets)—an instrumental orientation? Does the musician see the guitar-playing as a root to an integrative orientation (integration with a band, an orchestra, a musical community, a musical tradition)? Are there elements of both an instrumental orientation and an integrative orientation, for some? Yes. Yes. And yes, it could be reasonably argued.

When these simple categorical complexities of motivation are not recognized, or when some motivational ends are not acknowledged as legitimate, a mismatch between a counselor (e.g., one who does not support change as possible) and a counselee (one who wants therapeutic assistance to help change) can be a major problem. Such a situation is best addressed by a broadened perspective. It is the multiple-perspective-taker who would be in a position to be tolerant of people's "wants"—tolerant, but not necessarily affirming. What is needed is either (1) an educator or counselor who adopts multiple perspectives, or (2) a willingness, and plan, to refer given the philosophical mismatch.

Does a smoker smoke to integrate with a community—*an integrative purpose*? Yes, at times. It is relatively easy to see a desire to be part of a group as supporting an integrative

orientation—as a young adolescent seeking peer approval, an adult smoking at socially edgy parties, or a family member in a family of smokers.. Does a smoker smoke because the cigarette serves some physiological purpose—an *instrumental purpose*? Yes, at times. Weight control and relaxation are often advanced as reasons.

Does a person pursue homosexual activity for an integrative purpose, or as a proxy for integration—an *integrative orientation*? Again, it is relatively easy to see a desire to be part of a group as consistent with an *integrative orientation*. Does the homosexual behaviour serve some physiological purpose—an *instrumental function*? The human touch, the physical rush, and the orgasm, would be instrumental gains. Could the purposes—*integrative* and *instrumental*—be conjoined? Answering "yes" to these questions, as with smoking, is not impossible, nor unreasonable.

Change and Tolerance

There is a difference between showing tolerance and showering affirmation. Confusion here points to potential problems with the notion of tolerance. One problem is the issue of distinguishing what is tolerable from what is intolerable at the level of "ought." What "ought" one tolerate, and conversely, not tolerate? This problem exists at the philosophical level and involves ideology, worldviews, religious views, ethical systems, emotions, political views, and so on. For some, uttering the simple epithet "bigot" is a means to accuse one of intolerance, but ironically, more often than not, it manifests intolerance, usually their own. People will differ on whether something "ought" to be tolerated, or not, and their arguments can be well reasoned.

Eating dogs, eating pigs, eating feces, and eating children ought not be tolerated. Given these four scenarios, what should be tolerated? One is making a claim that one of more of these, at the moral level of "ought not," should not be tolerated in our society. However, these four

contentions are different and can be categorized, informatively, at four different levels. Upon reflection, the first "ought not," that is, *eating dogs*, is rooted in emotions, culture, and personal history (Category 1). It may be embedded in a vegetarian ideology (Category 1a) or a North American cultural history (Category 1b). The second "ought not," that is, *eating pigs*, can transcend Category 1, in that, this second category can be rooted in religion and contextualized interpretation (regarding when, where, and why eating pigs is wrong) (Category 2). Eating pigs can be wrong again given a vegetarian ideology (Category 2a), or as a religious absolute, for certain Jewish groups and Muslims (Category 2b), or wrong as part of a ceremonial law—a law acknowledged in a particular context (a covenantal law in Judaism), but not an obligatory moral law (as for Christians acknowledging Jewish roots)—(Category 2c). The third "ought not," that is, *eating feces*, is rooted in psychology, biology, common sense, and reason (Category 3). The fourth "ought not," that is, *eating children*, is rooted in an ethical and religious framework with universal, or near-universal, application (Category 4).

The first two categories might easily reduce to a preference-claim with good arguments for alternate preferences. Tolerance in these cases is relatively easy to imagine although there would be certain groups less likely to show tolerance (e.g., animal rights activists). The third category, *eating feces*, does not easily reduce to a preference claim. Nevertheless, one could show tolerance for those who argue for coprophilia looking to such arguments as: (1) a live-and-let-live philosophy, (2) a victimless-activity rationale, (3) arguments from existing parallels in nature where certain species eat feces, and (4) arguments from normal correlates, like absence of pathology in practitioners, appropriate social functioning and health in practitioners, and so on.

The fourth category, *eating children*, however, is rooted in ethical and religious systems that are relatively clear. Yes, there may have been cultures that were cannibalistic. Yes, there may have been small groups of people who found themselves in situations of such distress that

such cannibalistic practices were manifested. Yes, there is the satirical logic of Swift's Modest Proposal. Yes, there may be naturalists pointing to species in nature that eat their young. Yes, there may be legal arguments making the case for cannibalism (Hutchinson, 2011). But the argument stands—the argument that this fourth category does not reduce to a differential preference, or a practice to be tolerated.

Eating children is wrong and not to be tolerated. Likely this intolerance would hold true (1) even for naturalists who point to natural selection and ethological principles which select for such traits and value them as having survival value for the/a species, (2) even if naturalists point to the existence of such practices in nature, (3) even if post-moderns point to cultural relativism as value-neutral, and (4) even if legal scholars titrate the lesser of two evils to justify eating people (Hutchinson, 2011). Whether the intolerance is rooted in deep conscience or the long historical exposure to Judeo-Christian ethics, it likely has a future.

Given these four categories, where do the analogies considered in the document fall? There is a case to be made that certain behaviours like smoking, parasexualities, drug addictions could be Category 1 or 2. Others might move them, along with suicidality, gluttony, zoophilia, and so on, to the Category 3 level. In a Judeo-Christian worldview, suicidality, homosexuality and zoophilia would easily move to Category 4, as proscriptive. In a naturalist worldview, or a humanist worldview, it is likely they would remain at a Category 3 level, that is, descriptive only.

Also on the table is the elated tangent of *affirmation*. With respect to tolerance, two important questions that arise here are:

> (1) Do we want people (e.g., educators, therapists, politicians, and so on) to be *tolerant* (i.e., bear with what they don't accept as preferable, reasonable, or right)?

(2) Do we want people to go beyond tolerance—to be *affirming* (i.e., agree with particular truth claims and moral claims)?

If the answer to the latter question is "*affirming* rather than *tolerant"* then there will be sobering problems—cognitive problems and therapeutic problems.

How would the notion of *affirming* play out in the four categories described above? I suspect there are many who would not affirm those who practice eating dogs, eating pigs, eating feces, or eating children; yet, they would be, or could be, relative tolerant of the first three, at least. Tolerant yes, but we have no right to expect others to affirm such practices. The tolerant likely would not affirm such practices, but the true mark of tolerance is that the tolerant likely would not legislate sanctions. Sanctions are in the mix when one argues successfully that certain things should not be tolerated, for example, Category 4 behaviours like eating children.

Furthermore, cognitively, one needs to be able to distinguish between affirming people but not their practices, or to distinguish between affirming people but not their beliefs. Does this not seem quite similar to the Christian notion of loving the sinner but hating the sin? Attacking this principle under the guise of tolerance, by requiring practical affirmation of that which one does not believe is thought-control, behavioural control, and awfully Orwellian.

Therapeutically, requiring affirmation could lead to discord, and disconnection, between therapist and client, between teacher and student, and between parent and child. Practically, there would be a failure of diversity in the therapeutic community and the academic community. Likely, it would be a small step towards "viewpoint discrimination," "politically correct" speech codes, and the arrival of the "thought police," at one level, and indoctrination and brainwashing at another level. It is tolerance that is needed, not affirmation. The community needs good arguments, not an absence of arguments; we need multiple perspectives, not just politically-correct perspectives.

In homosexuality, for example, if affirmation is the goal then there is a problem. As Goldberg (1991) expressess it:

> "My suspicion is that the homosexual does not want merely the rights that should always have been his. Nor does he want merely the empathy and openness we offer (or should offer) anyone with or without physical or psychological problems. The homosexual wants social affirmation of the normality of his behavior. For the reasons we have discussed, we cannot give this affirmation unless he can give a causal factor for homosexuality that can be considered normal. If he cannot do this, he asks us to affirm as normal that which fails to meet the criteria for normality we invoke in all other cases. To do this we would have to deny truth and live a lie (p. 59)."

In effect, we tolerate people and ideas we disagree with. We accept people at the table and ideas on the table. We affirm the person we disagree with, but we do not affirm ideas we disagree with, or at least we should not. We affirm the smoker, not the smoking. We affirm the dog-eater and the pig-eater, though not necessarily the behaviour. One might even affirm the feces-eater, and not intervene via admonitions or advocacy for laws (assuming we are given the right arguments). With respect to child-eating there would be intervention—no overt affirmation, no covert affirmation based on human dignity regardless of religious worldviews which might attempt to controvert criticism.

As stated earlier, there is a need to protect positions of diversity; there is a need for balance; and there is a need to consider "harm," "good," and "moral regret" (Somerville, 2009). "It requires that when, for reasons of ethics, something we do or stand for offends or hurts others—for instance, my opposition to same sex marriage—we should deeply regret that our doing so causes others pain (Somerville, 2009, p. 4)." And we should be cognizant of the

potentially greater harm we might do to "…freedom of speech, freedom of association, freedom of conscience, and academic freedom… (p. 4)."

Respecting the "wants" of individuals is important, even those we disagree with as a rule. Given sufficient maturity, these youngsters we are concerned about as parents and educators, whether wrestling with smoking, sexuality, or eating problems, are to be respected in terms of their "wants." But they need to be informed, as does the adult manifesting the tolerance. Schools naturally find it incumbent to implement programs to teach children and adolescents to critically evaluate problems and issues they will encounter. And they find it incumbent to implement programs to teach children and adolescents (1) to avoid problems they could encounter, and (2) to disentangle from problems they have encountered.

Problematic activity selection and preferences are a given. Assuming that biology and environment drives activity selection and preference under the further interactive influence of effectors like the Matthew Effect, the Multiplier Effect, thinking, and choices, the question still remains: where does "knowing better" fit in this scenario? Why do people choose things they know they ought not to choose (smoking for example)? One answer may be found in the notion that they fail at self-regulation.

People fail at self-regulation, regularly. Diets are notoriously ineffective. Change is viewed as quite difficult with respect to an eating orientation. What about change with respect to suicidality? What about change with respect to racism, sexism, ageism, defeatism, alcoholism, gambling, depression, the lusts, the paraphilias, and so on? Change is viewed as quite difficult, and in some cases "impossible."

Do people have a moral responsibility to change, for the better? Can we call people to standards that would ensure their behaviour aligns with "the good" whether the good be defined as conventional, consensual, legislated, cultural, and so on? In other words, can we expect

people to change their suspect behaviour to moral behaviour, or even better behaviour? Regardless of the moral behaviour hierarchy or continuum, and where the threshold for sanctions begins, the real point (or the psychological point) here is that we do expect people to change in many areas, and when they do not change sanctions are imposed in the form of penalties, punishments, and restraints.

Change and Morality

An interesting issue with respect to change is the relationship between the theological, or moral, paradigm related to *sin*, and the more conventional causal paradigms (medical, psychological, ethological, educational, etc.). In a moral, or theological, paradigm behaviour can be viewed as emblematic of sin; if so, attributions of responsibility, culpability, and personal choice, are assigned. Given the religious, psychological, and philosophical associations attached to the term "moral," it might be better to label this paradigm the deontological paradigm. In a deontological view rules, codes, and laws are in focus; breaking from such rules is tied to personal responsibility, accountability, and penalty.

In more conventional paradigms, causality (event causation) is in large part independent of the will and thus personal responsibility is mitigated. For examples, consider:

(1) In the *medical paradigm* causality is related to *disease* or *deficit*, and personal responsibility is negligible.

(2) In the *psychological paradigm* causality could be related to *dysfunctions* of psychological or cognitive systems and once again personal responsibility is mitigated.

(3) In the *educational paradigm*, or *behavioural paradigm*, the cause can be due to *deprivation* (environmentally: either deprivation of proper learning, or deprivation in

the sense of being exposed to faulty learning) and again personal responsibility is irrelevant as the responsibility is attributed to educators or environments.

(4) In a *developmental paradigm* the causality is attributed to *delays*, or immaturity, and personal responsibility is at least diminished.

(5) In the *naturalistic paradigm*, or *ethological paradigm*, the behaviours are viewed as just natural *differences*, event-determined, and thus personal responsibility is irrelevant.

(6) In a *political paradigm* the behaviours are attributed to lack of funding, hence to *dollars*, expressed as the absence of dollars necessary to fund the programs one values as critically important.

It is in the deontological paradigm (the moral paradigm) that responsibility is at the forefront. The conventional paradigms have different focal points.

So, applying these paradigms to over-eating: is over-eating to the point of obesity a result of sin (sloth, avarice, and gluttony)? That is, is over-eating a moral issue; is it a paradigmatic, deontological choice to evade sound rules, codes, and regulations? Or, is it a medical condition driven by genes, disease, physiological deficit or damage? Or, is over-eating driven by psychological factors related to dysfunctions (e.g., in personality, in motivation, in self-regulation, in self-esteem, in self-image, in self-identity, etc.)? Or, have over-eaters been deprived of proper learning (taught inappropriate eating patterns, or deprived of proper tutoring on appropriate eating patterns) as educators might frame the question? Or, are over-eaters simply those with different eating patterns and behaviours, as naturalists or ethologists might argue. Or, are over-eaters impelled by an impoverishment that aligns with access to poor food choices, as the political paradigm might suggest? Again, it is in the deontological paradigm that the issue of personal responsibility is brought to the forefront.

The deontological paradigm is one that is often contrasted with the more conventional paradigms as here one assumes personal responsibility. There may be an intuitive push to attribute the problems others face to their own choices, their own will. If someone you care about eats too much—to the point of obesity—what do you say to them? If one drinks too much what do you advise? What is your knee-jerk response? Do you make an appeal to the will of the person, an appeal to push them to implement social constraints, an appeal to medications, an appeal to turn to God, or an appeal to educational self-help books? Or does your appeal keep doors open to all possible influences?

In a deontological paradigm (with constraints tied to sin, akrasia, greed, pride and so on) one assumes choice and personal responsibility as first-order considerations. If one adopts this paradigm, is it fair to ask: is there room for simultaneous consideration of, and subscription to, alternate paradigms? Yes, there is room. As argued previously, one should keep all paradigms on the table—all hypotheses, theories, and models.

A multiple-paradigmatic approach can be illustrated with respect to alcoholism. The knee-jerk response may be to attribute drinking to personal choice (i.e., sinful behaviour). Equally likely, there may be a knee-jerk response to attribute alcoholism to a disease process. These are dichotomous approaches (i.e., either sin or not, or disease or not), and not the wise approach to problems (Gould, 2003). But, with a little more reflection, we note nuances. Within Urschel (2009), for example, there is shift in opinion, historically, regarding the causality of alcoholism, from a view attributing the behaviour to sin to a view of attributing the behaviour to disease. But it is too limited! It is clear from therapeutic programs (e.g., Alcoholics Anonymous) that we are not really dealing with an either/or categorization, but rather a both/and categorization. This both/and view is clear in Urschel's own protocols for intervention. He places emphasis on choice, cognitive strategies, thinking, faith, planning, and so on. Such

diversity shows he is not solely adopting a disease model for alcoholism though he clearly adopts a disease model preferentially. Yes, there is brain damage related to alcohol abuse; yes, there are medications that assist control and restoration; but, there are also interventions tied to choice and will—responsibility, repentance, talk-therapies, planning, strategies, and more.

In any worldview with at least a pragmatic vein, there is likely to be an acknowledgement of personal choices consistent with failings and successes. To deny or mitigate personal choices and personal responsibility is an epistemological failing for worldviews that assume, consciously or unconsciously, libertarian freedom. Just like the smoker chose to smoke the first few cigarettes and then over time experienced an increasing atrophy of choice, so the alcoholic chose the first few drinks and then over time saw a clear atrophy of choice. Choice is of different calibers at different choice-points—and some calibers of choice are more linked to lethality than others. But there are choices, and then there are *choices*.

Again, multiple perspectives should be on the table since a causal constellation is complex. The moral component is important when considering the constellation of causal determinants, if not in all worldviews, at least in any those operating with a system of laws, codes, manners, and conventions, that citizens are expected to mind. Personal responsibility is a basic assumption in such a society.

Deviating from the codes, laws, and proscriptions of a society are problems that can be the products of *bad choices of a moral nature* (hedonism, selfishness, self-aggrandizement, covetousness, pride, and so on), or *bad choices of the moral variant* known as stupidity and foolishness (deficient beliefs), as well as *bad learning* (deprivations), deficient or *bad physiology* (disease, damage, and deficits), *bad psychology* (dysfunctions, abnormality, or divergence), *belated maturity* (immaturity, developmental delays, or decalage), or *bent philosophy* (cultural diversity, ethological differences). What drives a behavioural change to the

good or the bad? An array of determinants would, or could, push people to behavioural change, and personal choices would be a key feature at several pivotal points in any particular change continuum.

Change, Rational Choice and the "Cold Turkey"

As has been implied all along, there seems to be a case for *rational addiction*, a case that is often overlooked or bypassed. This case for *rational addiction* is most clearly presented in the economic model of Becker and Murphy (1988), but best framed in West's (2006) case for a comprehensive theory of addiction. Both approaches are considered here.

Rationality, "Addiction," and Choosing—An Economic Model

Becker and Murphy (1988) have presented a model of *rational addiction*; they postulate addiction to beneficial goods (e.g., jogging and religion) and harmful goods (e.g., alcohol and drugs), as rational. Given: (1) a timeline (past-oriented, present-oriented, and future-oriented), (2) a system of rewards and penalties (and *reward-penalties* where a present reward can entail a future penalty, and a present penalty can entail a future reward), and (3) perspective (attending to time-based payoffs), people make rational decisions, although not necessarily good decisions. They write: "Our analysis implies the common view that present-oriented individuals are potentially more addicted to harmful goods than future-oriented individuals (Becker & Murphy, 1988, p. 682)." Further: "Therefore an increase in rate of preference for the present and in the depreciation rate on consumption capital raises the demand for harmful goods but lowers the demand for beneficial goods. As a result, drug addicts and alcoholics tend to be present-oriented, while religious individuals and joggers tend to be future-oriented (p. 684-685)." In effect, the drug addicts opt for the present rewards though they entail future penalties; the religious and joggers opt for the future rewards though they entail present penalties.

Becker and Murphy acknowledge myopia—a type of blindness that ranges from a partial myopia to being fully myopic. Even this myopia, however, does not preclude rationality. As they see it: “The consumers in our model become more and more myopic as time preference for the present gets larger.” Given their model, and formulae, they infer: “It is then rational to ignore the future effects of a change in current consumption (1988, p. 683).”

Whether the addicted person is subject to full myopia, partial myopia, or insight, the notion of a rational attachment holds. The more rational addicts appear to be more sensitive to time factors (future payoffs and costs) than the less rational addicts (the myopic addicts), but the addiction is still rational.

Breaking the addiction is also rational. They address a few approaches with a weighting in the direction of quitting cold turkey, “...quitting by cold turkey is not inconsistent with our theory of rational addiction. Indeed, our theory even requires strong addictions to terminate with cold turkey (Becker & Murphy, 1988, p. 692).” To explain why addiction is viewed as rational they use cost-benefit analysis: “The short-run loss in utility from stopping consumption gets bigger as an addiction gets stronger. Yes we have shown that rational persons use cold turkey to end a strong addiction even though the short-run ‘pain’ is considerable. Their behaviour is rational because they exchange a large short-term loss in utility for an even larger long-term gain. Weak will and limited self-control are not needed to understand why addictions to smoking, heroin, and liquor can end only when the consumption stops abruptly (p. 693).”

Becker and Murphy (1988) do not preclude other exit mechanisms. “A rational addict might postpone terminating his addiction as he looks for ways to reduce the sizable short-run loss in utility from stopping abruptly. He may first try to stop smoking by attending a clinic but may conclude that this is not a good way for him. He may try to substitute gum chewing and jogging for smoking. These too may fail. Eventually, he may hit on a successful method that

reduces the short-term loss from stopping. Nothing about rationality rules out such experiments and failures. Indeed, rationality implies that such failures will be common with uncertainty about the method best suited to each person and with a substantial short-term loss in utility from stopping (p. 693)." Their point that addiction and change should be considered as rational makes sense.

Smoking too has an addictive component, so the possibility of using a smoking model analogously (applied to sexual orientation and/or eating problems) does not seem unreasonable, at least initially. Moreover, such addictions—given the time factor (immediate rewards vs delayed gratification), the cost-benefit analyses, the hooks to get one started, the varying perspectives over time, and the model proposed by Becker and Murphy (1988)—may be quite rational in spite of the myopia that creeps in.

Furthermore, recent work on delayed gratification includes attention to a rational system. Essentially, there are at least three issues that point in this direction: (1) there are two clear "types" that deal with delayed gratification, *hot* vs *cold* types, (2) there are brain-bases, or *differential neurological substrates,* consistent with rationality, and (3) there is the possibility of change, or at least openness to change, via *strategic influences,* again a rational approach.

Hot vs *Cold* types. With respect to types, Metcalfe and Mischel (1999) identified two types in their proposal of a two-system framework (a hot system versus a cool system) for self-regulation, the dynamics of willpower, and the delay of gratification. As offered in Mischel and Ayduk (2004) the cool system, "... is an emotionally neutral, know system: it is cognitive, complex, slow, and contemplative. ...the cool system consists of a network of informational, *cool nodes* that are elaborately interconnected to each other, and generate rational, reflective, and strategic behavior (p. 109). " The hot system "...enables quick, emotional processing: simple and fast, and thus useful for survival... (p. 109)." The hot system is automatic, developmentally

early, and typically precludes effortful control. The notion of rationality would align with the operation of the *cool* system.

Differential neurological substrates. With respect to brain bases, somewhat tentatively, Mischel and Ayduk (2004) link the cool system to hippocampal and frontal lobe processing. They link the hot system to the amygdala. More recently, Casey, Somerville, Gotlib, et al (2011) relate the two systems to neurological substrates as follows:

> "Two neurocognitive systems that rely on distinct neural systems have been proposed to enable self-control. Whereas the 'cool' system involves cortical control regions, including the prefrontal cortex, the 'hot' system involves deep brain structures such as the ventral striatum that are implicated in the processing of desires and rewards. Resisting temptation, as measured by the 'hot' go/nogo task in the present study, supports this view, with the prefrontal cortex and the ventral striatum differentiating low and high-delay participants. The difference in inferior frontal gyrus recruitment for 'nogo' relative to 'go' trials was reduced in low delaying participants, potentially reflecting reduced ability in these individuals to invoke cognitive control in the context of emotional or 'hot' cues. The ventral striatum has been implicated in reward and in immediate, as opposed to delayed, choice behavior. Thus, sensitivity to environmental cues influences an individual's ability to suppress thoughts and actions, such that control systems may be 'hijacked' by a primitive limbic system, rendering control systems unable to appropriately modulate behavior. Similar analogies of imbalances between these neural systems in the literature suggest that addiction and adolescence may be contexts when cognitive control may be particularly vulnerable to alluring environmental cues (p. 4)."

The cool system is more controlled by neuro-cognitive systems, particularly prefrontal cortex, and thus more amenable to delayed gratification. Individuals predisposed to the *cool* system are more likely to respond to arguments that favour delaying gratification, or opting for the bigger rewards at a later time. Rational behaviour seems evident here.

Strategic Influences. Mischel and Ayduk (2004) note: "As the cool system develops it becomes increasingly possible for the child spontaneously to generate diverse cognitive and attention deployment cooling strategies (e.g., self-distraction, inventing mental games to make the delay less aversive), and thus to be less controlled by whatever is salient ... (p. 110)." Other strategies to regulate affect, strategies that are logically, or reasonably, amenable to learning have been offered by Larsen and Prizmic (2004, pp. 44-51). For example they suggest: distraction, avoidance of rumination, expressing negative affect as in venting, suppression, cognitive reappraisal, social comparison with those worse off, planning to avoid future problems, socializing, getting advice, looking for one's positive blessings, helping those less fortunate, laughter as medicine, and so on. These strategies align with both rational behaviour and learning—and even support "cold turkey" in a cool system.

Rationality-Plus, "Addiction," and Choosing—A Comprehensive Model

West (2006) builds a comprehensive framework for addiction that begins with the common-sense fundamental principle of simple rational choice. This first consideration of rational choice is the default position for most people when it comes to explaining behaviour; we assume Rational Informed Stable Choice (RISC) as a model for human behaviour. We do things because of the benefits and often in spite of the known, or possible, adverse consequences. And one could add: we do things for the benefits, knowing there is a possible, or even likely, future loss of control. There is a risk!

Adding to this base of rational common-sense choice, West (2006) introduces a number of additional models that readily (or tangentially) mesh with the Rational Choice framework. First, there is the Becker and Murphy (1988) economic model addressed above. People make rational decisions—though not necessarily good decisions—using cost-benefits analyses in the context of a temporal axis involving past, present and future considerations regarding costs and benefits.

Also, there is a Self-medication Model where people use drugs with the intention of treating distressing symptoms. Particular drug effects are sought by individuals to alleviate specific problems like stress, anxiety, depression, and so on. Thus, the notion of "drug-of-choice" makes some sense in this context. It is a rational approach where people are making decisions in choosing certain behaviours (and "medicines") that are based on arguably rational reasons for them.

West (2006) continues adding models to the Rational Choice framework where elements of choice are present. He adds the Opponent-Process Theory (discussed more fully in the Appendix here) as compatible with choice, or at least choice in certain areas. He adds the Expectancy Theories here as well. True, individuals may make an "irrational, ill-informed choice" and show "unstable preferences" but these do not disqualify a Rational Choice Model. As West (2006) notes: "...many addicts choose to exercise restraint and in many cases go to great lengths and expend time, effort and money to achieve this, and yet still fail. Many addicts also regret having started down the road that has led them to this state. Yet, a Rational Choice Model can still be entertained if one assumes that the addicts' preferences change over time, and particularly between the time when a decision is made to restrain use and when that restraint has been exercised for a while (p. 46)." What should be added here is that it is not just "preferences"

that change. There are also changes over time in the *caliber of choice*, the quality of choice, the power of choice, and the scope of one's choice. Choice-caliber atrophies over time as a function of learning, habit, entrenchment, restraints, orientation-formation, self-identity, neurochemical changes, and so on.

Furthermore, expectancy theories are tied to simple beliefs, beliefs about self-efficacy, and beliefs about the costs and benefits of certain behaviours. At this level too there is alignment with Rational Choice. Expectancies can be seemingly unconscious, or based in cognitively automatic processes and structures. While this latter framing seems to remove the expectancy theories from the Rational Choice Model, such a conclusion would be premature. As Kahneman (2003, 2011), amongst others, has noted: such System 1 level processing which is unconscious, automatic and seemingly intuitive, may have once been located in System 2 level processing (reflective, rational, linear processing). Such System 2 level processing can be subsequently transferred to System 1 level processes after learning, practice, and habit have entrenched the behaviour or automatized the behaviour. This logically serves the interests of efficiency. In effect, initially choice—rational choice—was highly instrumental in decision making in System 2 processing, but such choice atrophied over time, or automatized, and apparently is absent, or nearly so, by the time of the transfer to System 1 level processes.

"Unstable preferences" exist, but these should not be construed as an argument against the Rational Choice Model. The smoker can choose to quit smoking at 2:00 p.m., and at 2:15 choose to change his mind, and light up. He can be seen as choosing to postpone the quitting to a later date—choice fluctuations, albeit radical choice fluctuations, are common.

Neither should the notion of "loss of control" automatically preclude a Rational Choice Model. Skog (2000) makes the reasonable claim, with respect to concepts such as "loss of control" and "inability to abstain," that things are not what they seem. He writes: "However, I

shall argue that these phenomena have been given improper names (see also Bergmark & Oscarsson, 1987), and that what we observe is not an inability to choose, but choices governed by strong appetites and conflicting motives. To claim that an individual is unable to choose is a very radical view—it reduces this individual to something less than a full person. It implies that his or her behaviour is governed by causal mechanisms beyond volitional control, and reduces the individual to a consumption robot—a helpless spectator to his own body's movements (p. 1309)." Further Skog (2000) writes: "From the point of view of choice theory, the core of the addiction phenomenon is a strong motivational conflict (p. 1310)." West (2006) as well sees the real issue as a motivational conflict; indeed, he develops a synthetic theory of motivation to explain a comprehensive theory of addiction.

The Cognitive Bias Theories that West addresses do not preclude choice. In fact, that the biases are rooted in beliefs seems to presuppose choice—choices based on beliefs. Neither do the Behavioural Economic Theories preclude choice, nor the Gateway Theory, nor the Identity Shift Theory, nor the Self-efficacy Theory, nor the Self-Regulation Theory.

While learning theory (operant and classical conditioning) seems to remove choice from the causal loop, in effect, choices have underpinned the learning in operant conditioning. There are choices in the direction of positive reinforcement and choices moving one away from negative reinforcers. Moreover, choices have preceded the learning in classical conditioning, as well as superseded the influence of classical conditioning via awareness and critical analyses of the propaganda, influence, advertising, and encroaching manipulation. Subsequent to learning, the entrenchment shows original choices might be solidified, and some choice options have now atrophied, or are mitigated, but the choice option is not obliterated. Choice is still possible.

The theories that West keeps adding to the basic Rational Choice Model might build a comprehensive model of addiction but the composite does not preclude choice, especially when

choice is conceived as possessing different calibers as a function of history, constraints, experience, learning, habit, personality change, developmental level, biochemical change, and so on. Choice, in varying calibers, is a thread winding through all components of a comprehensive model as presented by West (2006).

Two final quotes from Skog (2000) help underscore the prepotency of choice in a context of (1) rationality/irrationality and (2) a disease model of addiction. First: "Therefore, conceiving addiction as choice does not necessarily imply the idea that these choices are always rational. Rationality is a separate issue. Some cases of addiction may be the result of irrationalities of one sort or another, while in other cases the individual may be fully rational—or at least no less rational than are people in general (p. 1313)." Choice coexists with rational motivations and irrational motivations. Second, with respect to the particular addiction of alcoholism: "Whether alcoholism is considered a disease or not will depend on how the concept of disease itself is construed. Clearly, it is not irrelevant where one situates the object of the disease label. From the point of view of agency, and given the premise that the actor is in fact choosing voluntarily to do what he does, the obvious solution would be to say that it is the excessive appetite that gives the phenomenon a disease-like character. Nothing would prevent us from saying that an excessive (as judged by the agent, society, or both) appetite that causes severe motivational conflict, is a disease. Construed in this way, the diagnosis would make it possible to understand the agent's actions, to offer him help and assistance to curtail his appetite, but without taking away his moral responsibility for his own actions (p. 1313)." Excessive appetite is not convincing as a disease-model, but it offers a conceptual thrust that has merit. Moreover, an appetite model extends the "addiction" framework (excessive appetite) beyond drugs, relatively easily, to include: eating, pornography, homosexuality, fetishes,

pedophilia, zoophilia, gambling, shopping, music, writing, sports, jogging, stalking, love, and so on.

Rationality, Appetite, and Choosing—An Excessive Appetite Model

If an appetite model extends the "addiction" framework (excessive appetite) beyond drugs, to include a variety of problematic behaviours, it warrants close consideration. In fact, Orford's (2001) approach seems readily applicable to this very point. For Orford, excessive appetite applies to drugs, yes, but also to smoking, disordered eating, gambling, sexual activity, and so on. With respect to sex, Orford indicates that he is addressing "Straight Sex" as an addiction, yet there doesn't seem to be a compelling reason for precluding such variants as homosexuality, pedophilia, zoosexuality, pornography, and so on. After all, these can be seen as appetites as well. Moreover, these "appetites" align with the methods of acquisition, or rather, the processes of acquisition, that Orford (2001) offers: (1) restraint mitigation, (2) the law of proportionate effect, and (3) learning theory.

First, at what might be called *Phase 1* (restraint mitigation), there are normally restraints on behaviour, or appetites. Such restraints can be physiological, psychological makeup, embarrassment, culture, religion, laws, peers, parents, worldviews, and so on. However, if the restraints atrophy or fail due to curiosity, peer pressures, hedonism, developmental immaturity, risk-taking, novelty-seeking, thoughtlessness, a media agenda, or propaganda, then the door is ajar. At this point two other processes can be engaged. These "other processes" are two methods for escalating, and entrenching, appetite that are offered by Orford.

The first is the "law of proportionate effect," and we could situate this as *Phase 2*. This law involves proportionality and accumulation "...whereby the effect of any one influence upon behaviour is proportional to the cumulative effect of preceding influences. To produce a skewed

curve according to the law of proportionate effect we require a *developmental* theory, one that supposes that the chances of proceeding to the next stage, or of responding to the next positive influence inclining towards further 'consumption', are greater the more previous 'stages' have been passed through or the greater the number of previous influences that have been effective. Any theory which relies on an accumulation of influence would qualify (p.20)." This "accumulation of influence" is not simply increases in payoffs. It involves diverse restraints as well as influential when weak. West (2006), drawing upon Orford, merges restraints, appetites, and strong attachments as aspects of this "accumulation of influence" as follows: "First, there is the 'law of proportionate effect,' which suggests that appetitive consumption will escalate when the individual perceives the incentives of the appetitive activity to be relatively great and the restraints to be relatively weak. This is intended to capture the elements of choice and self-control (p. 114)." In the cost/benefit analyses, the benefits are seen to outweigh the costs, or overpower the costs. At *Phase 2* there is no strong attachment, just appealing incentives, and restraint alleviation. The "strong attachment" is a product of learning theory, which is the third feature that Orford points to—particularly operant conditioning—and we could situate this as *Phase 3*.

Now, at *Phase 3*, broad cognitive entrenchment takes place in line with learning theory. The appetite is excessive. "A core postulate of the excessive appetite model of how an addiction is generated is, therefore, that a combination of operant reward, usually in the form of some powerful emotional change, plus wide cue elicitation of conditioned responses that assist consumption in one way or another, operating within diverse social contexts, between them constitute a powerful set of processes responsible for the amplification of a small and unremarkable liking into a strong and potentially troublesome attachment. An additional step has been taken by a number of theorists who have posited a combining of learning and memory

elements into ‘cognitive schemata’ (Orford, 2001, p. 22).” Operative cognitive schema which involve emotions, memory, automaticity, influences regarding the costs of conflict, dissonance, the intentional changing of social groups, and so on, now factor into this psychology of excessive appetites.

Yet, change for the better happens. “There is ... abundant evidence that people can give up excessive appetites without the aid of expert treatment. The idea that tobacco smokers might make their own decisions to give up or moderate on the basis of the evidence available to them, perhaps with the aid of advice from their doctors or exhortations from their family, comes as no surprise. Despite the fact that tobacco smoking is by many criteria one of the most addictive of all activities, we have no difficulty conceiving of change as a perfectly ordinary, natural occurrence (Orford, 2001, p 26).” A new cycle of restraint mitigation (that is, the mitigation of restraints that have locked one into an appetite, for example, successful challenges to self-defeating messages and media, philosophical rejection of a lifestyle, basic insight, and simple maturity), a new set of benefits that outweigh costs (e.g., health, wealth, or respect), and new cognitive structures following reflective, rational, learning-based entrenchment.

As an aside here: an intriguing observation in Orford’s (2001) paper is his reflection on the number 20-30% as a quit-rate. Consider that (1) “... relapse curves following attempts to modify heroin, alcohol and tobacco habits were remarkably similar, with high proportions of people relapsing in the first few weeks, ... leaving perhaps as many as 20–30% having made at least medium-term changes....,” (2) “This figure of 20–30% recurs in a number of unexpected places. That is the proportion, for example, found to give up opiate use after detoxification with herbal medicines and Buddhist rites...,” (3) “It was also one informed estimate of the proportion of pledge-takers who continued to honour their pledges after committing themselves to abstinence at meetings of the Washingtonian Temperance Society in the 1830s and 40s ...

(Orford, 2001, 28).” With respect to homosexual change, the 20% success rate for behavioural chastity (a composite of “Success: Conversion Status” and “Success: Chastity Status.”) reported by Jones and Yarhouse (2011) resonates.

Through the three phases postulated to align with Orford’s (2001) approach to acquisition of excessive appetite there is a cognitive infrastructure of beliefs. At *Phase 1*, facing restraints, one has beliefs about the restraints, and beliefs that contextualize the restraints. One’s choices then are belief-based, at least in part. At *Phase 2*, dealing with cost/benefit analyses, one has beliefs about the benefits, and the costs. One’s choices here then are belief-based. At *Phase 3*, one’s entrenched learning is congruent with entrenched believing. Appetites, mild and excessive, are intertwined with beliefs. One’s choices then are belief-based, in large part.

Rationally Choosing Heterosexuality?

It is not unusual to hear the following claim from the mainstream: “I didn’t choose my heterosexual orientation!” It’s a reasonable claim, and weighty when presented as a challenge to choice with respect to the development of orientations. Still, is there a case to be made that one does choose a heterosexual orientation? Three areas are forefronted here to contribute to such a case: (1) the nature and place of choice, (2) a model of acquisition, in this case, an appetitive model (whether manifested as focused, selective, constrained, obsessive, or excessive, still, housed in wanting), and (3) the mechanisms of acquisition for competing orientations, or alternate orientations.

First, then, there is the nature of choice as discussed in Chapter 3, and here through Chapter 4. When choice is considered in the context of choice-points, changes in the caliber of choice over time, and variables (developmental and environmental) that influence choices, it is reasonable to postulate that choice is an important cognitive factor in learning. Choice should be

highlighted! Yet, choice is often coloured, greyed-out, or even masked, by influential developmental variables, biological variables, environmental factors, changes in the caliber of choice over time, and differential evaluations of choice at diverse choice-points. Choice is diminished by narrow, constricted thinking, cross-sectional analyses, dichotomous thinking, confirmation bias, heuristic strategies, logical fallacies, or a faulty information-processing paradigm or worldview.

Secondly, the excessive appetite model factors into the issue. In this formulation there are three phases for acquisition or development of an appetite that channels choices: restraint mitigation, cost/benefit analyses, and learning theory. Restraint mitigation would serve to channel an individual in the direction of heterosexuality. Why? Culture, parents, peers, media, religious institutions, bullies, and so on, would generally facilitate choices aimed at a heterosexual orientation—the conventional orientation. Restraints channel one's choices, and thus, one's path. Such restrained choices, understandably, would not form a conscious memory, or reflective understanding, of one's developmental choice-points history. Furthering the trajectory are the cost/benefit analyses one experiences. Here the benefits accrue thus facilitating, advancing, and supporting, a heterosexual appetite, and choice. Finally, operant conditioning firms up the choices for a heterosexual orientation. There is room on the table for such a hypothesis.

The third area of focus supporting the acquisition of a heterosexual orientation is the plethora of competing, albeit peripheral, orientations that exist: pedophilia, pederasty, ephebophilia, zoophilia, at one extreme, and alcoholic, smoker, musician, athlete, artist, criminal at the other end of an axis. If there is a case that these orientations are acquired, it would be a small step to postulating that a heterosexual orientation is acquired also. That an orientation doesn't seem to be acquired to the person considering the possibility is not a defeater. Such a

sense could be due to cognitive, formative mechanisms operating at earlier immature levels. In effect, the System 2 level processing operative in the distant past (at various points of orientation formation) could have been transferred to System 1 (Kahneman, 2011) level thinking with experience and maturity. If so, the acquisition now appears as automatized, intuitive, and unconscious.

For an analogy consider reading acquisition. Reading acquisition requires a lot of System 2 level processing (i.e., work in the form of paired-associate learning, sound/symbol memory formations, drill, sight-word recognition, vocabulary development, pattern recognition, and so on) in its early stages, before it is transferred to System 1 level processing at the more mature level (where automaticity is the norm). Surely it is reasonable, or worth considering, that other propensities can be similarly acquired. Furthermore, just as one, at best, has only fragmented knowledge, or piecemeal recollections, of early reading experiences, early choices, early failures, and early emotions, so one has similar shards of stages of an orientation formation—whether heterosexual, homosexual, zoosexual, pedophilia, hebephilia, and so on.

A Rational Conjecture—An Omni-Appetite Hypothesis

As a form of play, drawing upon Popper's (1965) notion of conjecture and refutation, consider the following conjecture: *each human being has an appetite for everything and every experience.* This would include: every taste, every sexual experience, every sight, every sound, every food, every relationship, every power, every good, every shock, and every horror. Clearly, there would be some quite horrendous appetites in such a mix—for example, pedophilia, rape, murder, torture, enslavement, necrophilia, zoosexuality, deicide, matricide, incest, candy, and "darkness." Such appetites for knowing, for such knowledge, would be god-like! Or a god-like aspiration! Or perhaps it is rather an aspiration to god-likeness! Such appetites may even be tied

to the danger resident in the Edenic "tree of knowledge of good and evil" as an intimate knowledge of every good, but also of every evil.

Of course one will ask: If there is an appetite for every good, and every evil, why don't such appetites flourish in every human being? To start with, such appetites do flourish across the race when the unit of analysis is the human group. Every good, and every horror, can be found; although humanocide has not been actualized, yet. However, when the unit of analysis is the individual there may be several masking phenomena that come into play. Consider the following three limits:

(1) *Competition.* Immediately, one can see that such a competition between good appetites and bad appetites would automatically exclude some appetites. One can't adopt, and practice, an appetite for solitude, and an appetite for socializing, at the same time. One appetite will take precedence at a specific time. Logically, then, that some appetites are attended to, automatically precludes others from surfacing at the same moment. Attention is a limiting factor.

(2) *The Unconscious*. Conscious appetites are the tip of the iceberg. A great deal of our knowledge is unconscious, implicit, memory contingent, or operative at System 1 level functioning (i.e., characterized by intuition, automaticity, and parallel processing). System I level appetites, *unconscious appetites*, can exist concurrent with the more rational and reflective System II level appetites. And one can be surprised when they surface. Systems of thinking can be limiting.

As an illustration of an unconscious influence, Ariely (2008) reported on the difference in responses to specific questions in an aroused state verses a non-aroused state. The changes in male responses to such questions as: (1) "Can you imagine being sexually attracted to a 12-year-old girl? and (2) "Can you imagine having sex

with a 60-year-old woman?" were striking. There were increases for both in the aroused state; he notes a "Difference percent" of 100 in the case of the former and 229 in the case of the latter (Ariely, 2008, p. p. 106). There are some things about our appetites that would surprise us.

(3) *Psychological Mechanisms*. There are psychological mechanisms of rationalization, denial, self-deception, and so on, that factor into awareness of appetites. These are common masking tools.

As it turns out, a more systematic exclusionary method can be seen in Orford's (2001) approach. In the context of Orford's model: at *Phase 1,* restraints (e.g., familial, social, cultural, religious, personal ideals, synderesis, etc.) would block many of the more problematic appetites—the bad, evil, or socially unacceptable appetites, in perhaps most individuals. In effect then, that which is actually ours as a function of such restraints we might come to believe is ours as a function of character, or nature.

At *Phase 2*, where cost/benefit analyses come into play, philosophical paradigms and worldviews—in intra-individual competitive economies—would influence motivations and pursuit of various benefits. Suppression of less common appetites (e.g., same-sex pleasure) could follow, possibly buried given the culturally prominent worldview, or a preferred theological worldview. Or such appetites could flourish given a different worldview[1]. It follows that one thereby could easily *release an appetite* and layer on the language that one has *"acquired"* either a heterosexual orientation, a homosexual orientation, a bisexual orientation, and so on.

[1] There are cultures where same-sex practice, for example, is systematically encouraged, and thus follows as a "normal" appetite acquisition; that is, normal in the statistical sense. For example, Berman (2003) reports that the Sambia of New Guinea require boys to be homosexually engaged for about fifteen years: first, from middle childhood to puberty by performing fellatio on older boys; then, post-puberty, as the recipient of fellatio from younger males. At marrying age there is a transition to heterosexuality.

Thus, appetites for the culturally good—say, heterosexuality in our contemporary Western society—could be suppressed given an appetite for an alternate yet instrumentally good objective, albeit, a good which happens to be conducive to a particular perspective, paradigm, heuristic, cognitive slippage, or idiosyncratic worldview. This is really not too different from saying: "Thus, appetites for the culturally good—say, homosexual practice in the Sambia of New Guinea—could be suppressed given an appetite for something else, say a holy quest inspired by, for example, missionaries."

At *Phase 3* one learns—via learning theory principles—to adopt the more noble appetites of one's conscience, one's milieu, one's social group, or one's worldview. Or, perhaps one learns to develop the nasty appetites, and at times, simply re-label them as "noble"—spreading greed (Gordon Gecko on Wall Street), spreading seed (Dawkins and the ethologists), spreading need (socialists on the capitalists), spreading screed (Prager on the liberals), spreading beads (the left on the colonialists) spreading weed (the right on the libertarians), spreading tweed (the Yanks on the Brits), ...

More seriously, the conjecture at play here is that we all have all of these appetites, the good ones and the bad ones. It is an *omni-appetite hypothesis*, or a *pluripotent-appetite hypothesis*. Can this conjecture be refuted? How would one test it? Look for natural experiments to see if certain conditions release certain appetites. Do the homosexual practices of males of the Sambia of New Guinea support an appetite model? Closer to home, as homosexuality is normalized (restraint reduction) does the incidence of homosexuality increase? Does the age of expressing a homosexual orientation decrease? As inter-generational sex restraints decrease—via respected authorities like the APA, or empirical research reports in respectable journals **(**Rind, Tromovitch & Bauserman, 1998), or stories, or arguments—is there a rise in the incidence of pedophilia? Can one detect the broad spectrum of sexual appetites in animal

models, that is, in nature? According to Bagemihl (1999) it seems so. Can one induce appetites in animal models? Prenatal hormonal experiments would suggest this is the case. Can one induce appetites in humans—via media, propaganda, literature, educators, peers...? Arguably, yes! Look for empirical evidence. Look for explanatory power. Look for logical coherence. And there seems to be a case for the pluripotent appetite—the *omni-appetite hypothesis* being at the table.

Change and Betterment

"Getting better" can be characterized by development, that is, a natural process involving growth, learning, cognitive-unfolding, emerging rational behaviour, or good-habit-formation. Both "sanctification" a religious term, and "education" a more secular term, posit a place for development, change, and intervention. This broad notion of "enhancement" in a person's natural development, or progress, draws upon agency and influences (external and internal influences). Both "sanctification" and "education" are construed as a quest for improvement in people (whether immature people, bad people, neutral people, or good people)—upgrading "baseline" people to better people, or to the best people. In this framing "best" can be viewed in terms of one's individual potential, one's ideal self, or even a societal ideal. The objective is turning people into people who are involved in doing "the good," doing better, doing their best, fulfilling their potential, or attaining the heroic. This is an objective that clearly fits into parenting systems, societal systems, educational systems, legal systems, health systems, and religious systems.

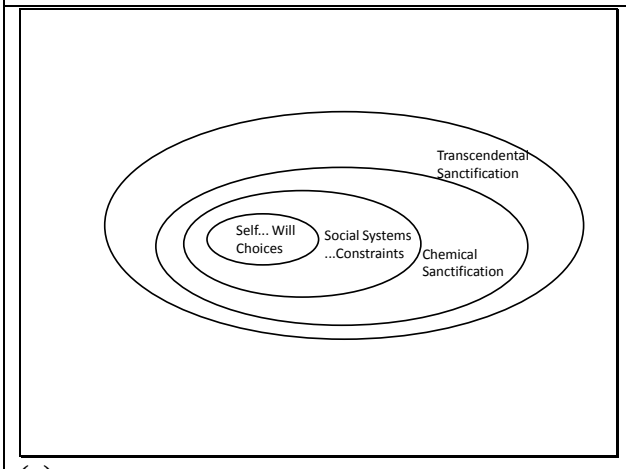
Attaining "improved people"—changing people to do the good, or to do better—has multiple mechanisms. Four are considered here. This four-category system uses the religious term *sanctification,* for effect, although it can be either a religious or secular concept. It is

elaborated as follows: (1) *willful-sanctification,* or simply improving by choosing, choosing to do the right thing; (2) *systems-sanctification,* or being channeled into doing the right thing by constraints, rewards, or models (e.g., parents, peers, praise, media, manners, money, laws, society, biology, etc.), and subsequent habits formed; (3) *chemical-sanctification,* or being channeled to do the right thing by medications (e.g., Ritalin for ADHD, Lithium Carbonate for improving specific mood behaviours, Depo-Provera for eliminating behaviours like pedophilia, and Antabuse, Naltrexone, Vivitrol and Campral supporting the alcoholic's "better behaviour," etc.); and finally, (4) *transcendental-sanctification.* This transcendental-sanctification could be seen as religious or secular. In a religious sense one has the Christian notion of the beginning of better behaviour in this life (motivated by internal nudges like love, gratitude, the sensus divinitatis, the Holy Spirit, and wisdom), and the fullness of right behaviour as an eternal teleological outcome eventually, with God as the cause or source. In a secular sense, perhaps, ethereal principles like "the golden rule," or empathy (de Waal, 2009), or "human flourishing" (Harris, 2010), or "ultimate concern"—"a meaning which gives meaning to all meanings" (Tillich, 1952)—or self actualization (Maslow, 1970), fit the bill for the transcendent. A broader secular sense is captured by Haidt's (2012) Social Conservative Moral Matrix that weights equally—at least for conservatives—the following moral roots: *Care* vs harm, *Liberty* vs oppression, *Fairness* vs cheating, *Loyalty* vs betrayal, *Authority* vs subversion, and *Sanctity* vs degradation (p. 306). This six-fold focus, as opposed to a singular focus, is itself transcendent.

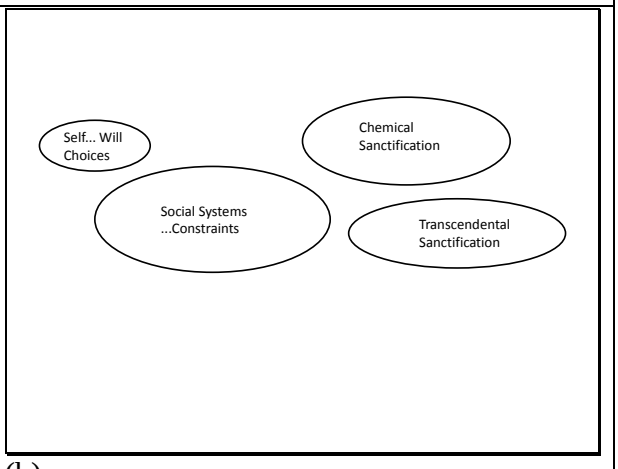
All four determinants of "doing good" could have an honourable place at the table and could be considered as independent, interdependent, subsets, or peripherals of each other (as in the various configurations seen in Figure 5). The first figure (5a) shows *willful-sanctification* (and therefore choice) as a subset of all other determinants. The second figure (5b) shows a scenario where all four elements are separate—a dichotomous view would be typical here. Such

a view would be characteristic of those who are likely to default to an either/or perspective when attributing blame, or praise, to an individual for a particular success, or failure. The third figure (5c) shows *willful-sanctification* interfacing, in part, with all other determinants which may or may not be overlapping with each other. In the fourth figure (5d) we see *willful-sanctification* as a subset of the social-systems but peripherally, and possibly, linked to *chemical-sanctification* and *transcendental-sanctification* systems. Other configurations are possible but the important point is the involvement of multiple potential determinants.

A further important aspect in the following figures, then, is the significance of breadth in perspective. There are four different influence-categories on behaviour that might be considered, that is, there are at least four. Secondly, the place allocated to choice, or *willful-sanctification*, can actually hold a central role in considering the genesis of a state, and the change in a state, whether one is focusing on psychological change, moral change, cognitive change, metacognitive change, behavioural change, changes in beliefs, changes in knowledge, changes in strategy, changes in paradigms, or changes in worldviews. Choice is important. Preferentially important!



(a)



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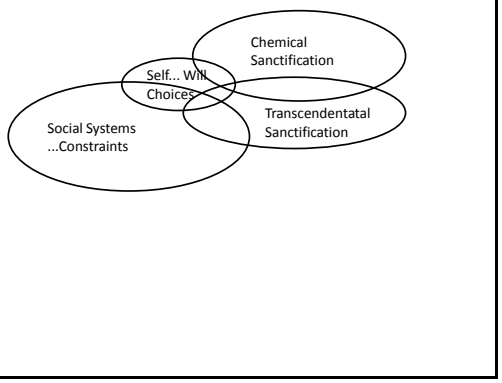
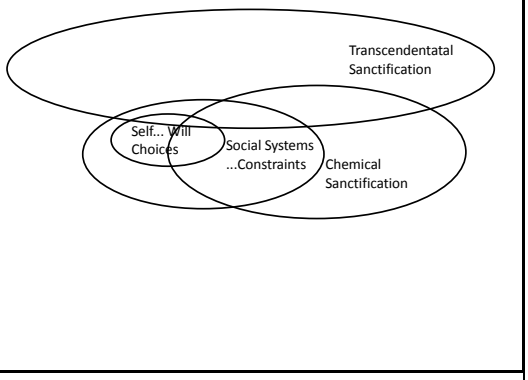


(c)



(d)

Figure 5

A major point in these scenarios, since choice is important, is that self-sanctification, or *willful-sanctification*, ought not to be overlooked. In fact, it can be the central point for the entire issue of doing good, or doing the right thing, or doing the better thing, or doing the best thing. As such, self-regulation offers an important conceptual construct for furthering this discussion of change.

Change, Appetites and Bad Beliefs

In an appetitive framing of the issue of change the intersection with "beliefs" emerges. Given problematic beliefs we ask here: "what is the relationship between appetites and beliefs?" The two are dramatically intertwined. Take gambling. The person with an increasing appetite for gambling likely believes: (1) the restraints against gambling are weak, or weak enough, (2) the potential benefits from gambling (the emotional hit, or rush, the monetary gain, the play, the fun, etc.) are worthy of curiosity, exploration, and effort, (3) one has personal agency and choice, at least, at some early phases of the gambling behaviour, (4) one can win or lose, (5) one is in a danger zone, albeit such a belief can be suppressed, and (6) a slew of rationalizations.

Beliefs can serve as restraints, motivators, channels, or blinders. Beliefs can restrain an appetite, or unleash an appetite. Beliefs, it seems, are the key focal points for addressing appetites. Beliefs necessitate the broadest consideration in the understanding of appetites, the reflection on appetites, the monitoring of appetites, the control of appetites, and the undoing of appetites—excessive appetites. A critical focus on beliefs is necessary. Chapter 5 addresses the issue of the sources of bad beliefs. A full discourse on bad beliefs (i.e., psychological thinking—models and mechanisms—philosophical thinking, theological thinking, and biological thinking) is presented in Appendix 1.

Chapter 5: Sources of Bad Beliefs

While much of this material is addressed also in "Entrenched Learnings (Vol 3) -- Determinants of Disbelief," the topic is sufficiently importantly to justify revisiting here. Given the importance of beliefs for driving choices, the focus on the mechanics of beliefs underpinning choices is critical. Understanding how, where, and why, beliefs go awry, in the formation of orientations is to realize how belief-based choice leads to entrenched learnings, even disordered learnings.

While there are bad beliefs and good beliefs, one major, important point here is the following: beliefs are forceful. They can impel thinking, they can impel choice of actions, and they add force to the importance of choice-points in the development of an orientation. Beliefs underpin causation whether the cause be an intentional choice (agent causation) or a cluster of determinants, including beliefs in various stages of formation, beliefs pushing one in multiple competing directions with the strongest determinants winning the competition (event causation). Belief-based thinking, orienting, and choosing are congruent with the pursuit of coherence and consonance in the form of ideation, personal constructs, image, explanation, justification, and rationalization. Rooted in beliefs, personal psychological constructs (i.e., concepts, hypotheses, and theories) serve to facilitate the building of rational orientations and subsequent, or logically consequent, budding behaviour patterns. In this process beliefs are seminal, beliefs are dynamic, beliefs are forceful, beliefs offer constraints, beliefs are directive, and beliefs are routing switches.

Though influential, beliefs are often limited, or detrimental, in that they are fragmentary. They can be in a process of development themselves. Beliefs, like trees, follow a course of development from seed, to sprout, to sapling, to tree—all the while oscillating with circadian,

diurnal, and circannual, rhythms of their own. Beliefs can be mature or immature, proper or improper, true or false, and ultimately, in line with the tree metaphor, fruitful or fruitless.

Immature beliefs are in states of acquisition—they are acquired over time: (1) under the influence of biology and environment, directly and interactively, at one level, (2) under the influence of cognition (thinking and choosing) at another level, and (3) all under the general umbrella of education. Hence, education is critical!

Yet, education has been the "poor country cousin" in discussions of causality for such topics as IQ, sexual orientation, smoking, drug addiction, obesity, suicidality, musicality, athletic prowess, and more. Nevertheless, education/learning is prominent and, perhaps, the most important player in the mix when one acknowledges the primacy of the person and the pre-eminence of choice.

Since the acquisition of beliefs—at least reflective beliefs (Barrett, 2004, 2009, 2011)—occurs via learning, then clearly education is formative with respect to beliefs being learned. Education advances information, formation, and reformation. In the Aristotelian context the beliefs serve as a *material* cause, a *formal* cause, and a *final* cause—causes that the person draws upon. The person functions as the *efficient* cause (i.e., choosing and then doing) in the formation of the "person"—their identity, their orientation, and in large part, the self.

The person is a conglomeration of personality attributes, preferences, identities, orientations, skills, aptitudes, strategies, likes, and habits. The person is formed under the influence of biology and environment, as well as the influence of beliefs and choices. When it comes to the person making wise choices, or smart choices, it is the beliefs (as *material* cause, *formal* cause, and *final* cause) that impel the behaviour, channel the behaviour, and thus craft the behaviour in positive or negative directions. Beliefs are formative of the emerging person. In this framing people could make foolish choices because of belief algorithms or belief heuristics

characterized as foolish beliefs, fragmented beliefs, blocked beliefs, suspended beliefs, immature beliefs, biased beliefs, or faulty beliefs.

Consider the problem of smoking! When the problem is configured in terms of belief-based self-regulation (for example, as developed by Baumeister and his associates, 1997, 2004a, 2004b, 2005, 2011), how might the problem be characterized? What drives belief-based self-regulation? On the one hand, beliefs influence self regulation. On the other hand, power or strength, in the form of cognitive resource pools, would be important foundationally.

Why do people fail at resolving problems of self-regulation? Why would intelligent people make foolish choices, frail choices, or familiar or unfamiliar choices with respect to smoking? Why do some fail to regulate their thinking and then behaviour in wise ways? The answer to the problem is framed in terms of: (1) having problematic beliefs (e.g., rationalizations, denial, ill-formed beliefs, belief constraints, competitive beliefs, immature beliefs, and so on) and (2) having resource limitations (*weakness*, as in akrasia, loss of power, energy depletion; and *constraints*, as in fatigue, time-of-day, and competing tasks) for acting upon beliefs.

Failures to self-regulate with respect to smoking can be rooted in lack of knowledge, lack of strategies, failure to activate appropriate strategies, lack of cognitive resources, resource depletion, past experiences, personality, social constraints, simple preferences, motivation, immaturity, or just simple hedonism. Do these factors link to problems with belief—actual beliefs, conflicted beliefs, fragmented beliefs, or messy beliefs—that exist in a general belief substrate? It seems that such a case can be made. If so, then belief is a key construct in problematic life-trajectories. A broad and deep focus on belief is clearly warranted.

The Commonplace Notions about Bad Beliefs

That people do stupid things finds a place in all worldviews. An exception might be made for the worldview of the ethologists, and their fellow philosophical naturalists, who are likely to view what some call "stupid" behavior as simply "different" behaviour and potentially valuable behaviours at that. In effect, they see differences as desirable, and this applies even to problematic differences[1]. Natural diversity is potentially valuable in terms of the survival of the species. Consider that over-eaters are just "different" eaters. Ethologists might wonder: could these over-eaters survive a catastrophic famine given the fat reserves they have accumulated? If so, could that benefit the species? The logic is clear and the answer is, reasonably, "Yes."

Another example for ethological reframing regarding benefit to the species can be related to an *aversion to heterosexuality* (and subsequent marital responsibilities). Such an aversion leaves a segment of the population isolated and independent with no bonds (or weaker bonds) functioning to keep these individuals tied directly to familial responsibilities. In catastrophic times and locales—say a tsunami—such unencumbered members of the species would not be as strongly bound to the more dangerous lower ground, or familiar ground, when the floods came. They flee more easily. This could have survival value in that some in the species survive for another day.

Regardless of the philosophical naturalists' positive outlook, people function with a worldview that defaults to the commonplace notion: human beings often show bad beliefs—bad thinking, stupidity, and foolishness at all levels of society, including the academy. It is a commonplace notion that certain behavioural manifestations are wrong, or "stupid." Moreover,

[1] (1) *Suicidality* could free-up scarce material resources in a particular impoverished community. This "difference" could be seen as socially valuable in a particular context, as it would contribute to the survival of other community members.

(2) *Drug addictions* might generate genetic change, neurological change, or biochemical change (broadening the selection pool), possibly leading to future survival value—like the malaria resistance related to sickle cells, in some locales. Perhaps there could be survival value in "stupid behavior." What would be evident in such a naturalist worldview, though, would be either an absence of traditional moral judgment, or the presence of mitigated moral judgment.

this “stupidity” is seen as fundamentally emerging from “bad thinking” or its precursor, bad beliefs.

Bad beliefs are pervasive. Comedians, psychologists, politicians, researchers, lawyers, and educators flourish on such failings. The entertainment industry depends on illustrating bad thinking with film, TV sitcoms, magazines, and books. Media depends on bad thinking and bad beliefs to fill columns and nightly news programs?

Since bad beliefs, or bad thinking, are omnipresent it is reasonable to explore the nature and nurture of bad beliefs—the mechanics of such deception. Deception by self, by situation, by saints, and by sinners, would be a primary source of bad beliefs, and bad thinking.

Of particular interest here is the self-deception that leads to bad thinking, bad choices, and bad behavior. When people fail to regulate their behaviour in intelligent or wise ways some type of self-deception, or epistemic failure, is operative. Such failure pushes an individual off course, or permits them to veer off a more prudent course? Yet self-deception, denial, projection, rationalization, and epistemic failures, are only part of the story.

Self-regulation, first of thinking, then behavior, underpins our learning, our doing, and eventually our identity. But our learning and our identity also underpins our self-regulation. They operate in a reciprocal relationship. Learning and education influences self-regulation; at the same time self-regulation influences learning and education.

Why are there failures in self-regulation? Why do we at times regulate our thinking, and behaviours, in a manner that leads to good ends, and at other times in a manner that leads to suspect ends? Various approaches to this question have been advanced—philosophical, theological, and psychological. Particular approaches are of relevance here. Such approaches are tied to beliefs, good beliefs and bad beliefs, and therefore, learning and education. Hence, the big question concerns the nature, sources, and mechanics of “bad beliefs?” To examine the

nature and underpinnings of bad beliefs various framings are considered in the remainder of this chapter.

Broad Determinants of Bad Beliefs

The categories and theories of determinants of bad beliefs are far ranging. Developed in Appendix 1 are details related to various views of psychological causation, biological causation and philosophical causation of bad beliefs. On the psychological side there are multiple models and theories explaining bad beliefs: Attribution theory (Dweck, 2002), an Activity-Switching, Self-Regulation model (Perkins, 2002), an Imbalance model (Sternberg, 2002), the inevitability of illusions (Piatelli-Palmarini, 1994), a Strategic Self-Regulation model (Ayduk & Mischel, 2002), a Doing-Good model (Baumeister, 1997; Sowell, 1999), Opponent-Process theory (Solomon & Corbit, 1973, 1974), Action-Identification theory (Vallacher & Wegner, 1985, 1987), Ironic Effects theory (Wegner, 1994, 1997), a Darkened-Mind theory (Zimbardo, 2004), Dissonant Thinking theory (Baron, 2008; Festinger, 1957; Tavris & Aronson, 1997; Twerski, 1997), and Ideomotor Action theory (originated with Carpenter, 1888/2010; addressed and extended by James, 1891/1952, and then Wegner, 2002).

On the biological side there are models and theories showing sources of bad beliefs: categorized as "biology plus environment" (e.g., Bailey, 1995, 2003; Plomin, 1989; Rowe, 1983; Shermer, 2011, and others) and "biology plus evolutionary psychology" (e.g., Barrett 2004, 2009; Murray, 2009; Shermer, 2004, 2011).

On the philosophical side there are perspectives offering arguments for the genesis of bad beliefs: (1) philosophy per se (Plantinga, 1993a, 1993b), (2) naturalism (Shermer, 2004, 2011), and (3) theological contributions of Biblical positions.

Creedal/Cognitive-Science Thinking about Bad Beliefs

The term Creedal/Cognitive-Science is a variant on the field, the Cognitive Science of Religion (CSR) as used by researchers like Barrett (2004, 2009, 2011). The shift to a focus on creeds here, as opposed to religion, is related to: (1) the fact that creeds are in some cases non-religious, and (2) the fact that creeds are considered here as paradigms paralleling what is often the default creed of naturalism (see the discussion in the Conclusions section).

Furthermore, the formation of beliefs, and belief systems (i.e., creeds), is a topic that aligns with both cognitive science and religion, and, thus, the fields overlap. It is reasonable, then, when considering beliefs, to attempt to address both a naturalist paradigm, the default paradigm at times, along with creedal paradigms, the competing paradigms at times.

From The Cognitive Science Side

On the cognitive science side of the framing there is a case for two cognitive systems involved in human information processing (see Kahneman, 2003, 2011; Sloman, 2002). In fact, there are numerous two-system models (see Sloman, 2002) including such configurations as deductive versus inductive systems, or analytic versus non-analytic cognition systems, or even the Freudian formulation of primary processes (seeking gratification) versus the secondary processes (dealing with limits, constraints, obstacles, and boundaries via the "reality principle"), as Sloman (2002) notes. The two cognitive systems considered here, however, are: (1) the Intuitive versus the Reasoning systems—that is, System 1 and System 2—(see Kahneman, 2003, 2011), and (2) the Associative versus the Rule-Based systems (see Sloman, 2002).

Kahneman & Tversky

As Kahneman presented the two-processing systems approach in 2003, there is an Intuitive system—System 1—which displays processing characterized by: fast speed, parallel processing, automaticity, effortlessness, associativeness, slow-learning, and emotionality. The other system—System 2—is a Reasoning system and is characterized as: working at a slow speed, using serial processing, under executive control, requiring substantial effort, rule-governed, flexible, and showing emotional neutrality.

In the Intuitive system, arguably bad beliefs could be linked to: (1) associativeness, if the associations are defective or limited, (2) emotions or affect, which could overpower cognition, and (3) automaticity, where that which is automatic is a learned dysfunction or bad habit, or the automatic response is premature. Further, sources of faulty beliefs can be linked to biases, and the use of "a limited number of heuristics, such as representativeness and availability" (Tversky & Kahneman, 2002, loc 419).

People make "natural assessments" routinely. "Such natural assessments include computations of similarity and representativeness, attributions of causality, and evaluations of the availability of associations and exemplars (Tversky & Kahneman, 2002, loc 421)." These assessments impact judgments. We rely on these natural assessments to produce an estimate or a prediction. This judgmental heuristic can lead to "the relative neglect of other considerations (loc 428)" and possibly error or bad beliefs. Judgmental heuristics can also lead to "predictable biases," misinterpretation of the task, and inappropriate anchoring. Faulty beliefs surfacing, then, are quite believable!

A judgment from the Intuitive system "will be modified or overridden if System 2 identifies it as biased (Kahneman, 2002, p. 711)." These corrective operations by the Reasoning

system can be somewhat desolate, however, if certain constraints are in play. Blockages identified by Kahneman from existing literature (p. 711) are:

- *Time*-"time pressure,"
- *Load*- "concurrent involvement in a different cognitive task,"
- *Time-of-day*-"performing the task in the evening for morning people and in the morning for evening people"
- *Mood*-"surprisingly, by being in a good mood" can impair corrective operations. One wonders if this is being too relaxed.

Facilitators identified by Kahneman from existing literature (p. 711) are:

- *Intelligence* –more intelligent processors can use System 2 overrides
- *Cognitive Drive*-"need for cognition" Some individuals have a need to engage cognitively. They enjoy it, they seek it out. Intricate thought is fulfilling for some (see Shafir & LeBoeuf, 2002).
- *Expertise*-"exposure to statistical thinking"

With respect to beliefs, then—which are the underpinnings of judgments and behaviour—it is clearer how beliefs can go awry via System I or System II processes. Heuristics and biases can interfere with beliefs—distorting beliefs—as can a host of constraints such as time, load, mood, intelligence, expertise, cognitive style (drive or need), and even time-of-day. Motivations and emotions can be constraints as Kahneman notes under the label "The Affect Heuristic" (2003, p.710). Even that great recent boon to human knowledge, the Internet, can be a heuristic with serious constraints for using the Reasoning system (see Carr, 2010 for discussion of what might be called "the shallowing of thinking" as a result of the Internet).

Sloman

Sloman's (2002) two systems of reasoning are similar. He terms them as an Associative system and a Rule-Based system. The Associative system shows automaticity and has certain illustrative cognitive functions (e.g., intuition, fantasy, creativity, imagination, and associative memory). The Rule-Based system draws upon language, culture, logic, concrete and abstract concepts, and strategy, etc. Illustrative cognitive functions are drawn from Table 22:1 in Sloman's chapter (Chapter 22) (e.g., deliberation, explanation, formal analysis, verification, ascription of purpose, and strategic memory).

In Sloman's model the systems are interactive. They work together to solve problems, but utilize their own unique cognitive resources. In the Rule-Based system there are three sources of rules: culture, self-made rules, and discovered rules in nature and logic.

Sloman (2002) contends: "The associative system encodes and processes statistical regularities of its environment, frequencies and correlations amongst the various features of the world (loc 5895)." Further, "...associative thought uses temporal and similarity relations to draw inferences and make predictions that approximate those of a sophisticated statistician. Rather than trying to reason on the basis of an underlying causal or mechanical structure, it constructs estimates based on underlying statistical structure (loc 5899)."

One piece of evidence that Sloman (2002) finds quite compelling for two forms of reasoning is the fact that a person can hold two simultaneous contradictory beliefs. He uses the whale as one example. "A whale is simultaneously both a mammal (technically) and a fish (informally) (loc 5951)." Obviously the label "fish" comes from the Associative system, while the label "mammal" comes from the Rule-Based system. There are situations where "...people first solve a problem in a manner consistent with one form of reasoning and then, either with or

without external prompting, realize and admit that a different form of reasoning provides an alternative and more justifiable answer. Judges are often forced to ignore their sense of justice in order to mete out punishment according to the law (loc 5955)." Again, the Rule-Based system is seen to exist with the Associative system, albeit, the rule is that the Rule-Based system trumps the Associative beliefs. Two systems of reasoning are in competition!

Developmentally, on the one hand, it seems the rule-based system precedes the associative system; over time rational inferences become intuitive. Sloman (2002) writes: "The claim is that people first figure the world out deliberately and sequentially and only with time and practice does the knowledge become integrated into our associative network (loc 6101)." At the same time: "Evidence also suggests that people rely on associative processes when they do not have knowledge of or access to rule-based ones (Quine, 1977, said that we fall back on our 'animal sense of similarity' when a lay theory is not available) (loc 6104)." In this scenario the Associative is primary. In actuality, there are two systems of reasoning in interaction, developmental interaction!

Sloman (2002) contends that associative responses are automatic and persist even when the person tries to ignore them. They remain compelling even when faced with rule-based arguments. Nevertheless, "The rule-based system can suppress the response of the associative system in the sense that it can overrule it (loc 6055)." The associative system might be primary, temporally, but the rule-based system is primary, authoritatively. Problems obviously would arise if one engages in shallow processing, that is, one reacts to the intuitive associative system, almost impulsively, and proceeds no further. Interestingly, as noted earlier, Carr (2010) makes the case that the computer (particularly the Internet with hyperlinks and linguistically terse text like e-mail) is propagating a generation characterized by impulsive, shallow, and surface-level processing. Failure to get to rule-based thinking could clearly be a source of bad beliefs. Thus,

preferential positioning of the associative system, if intruding on the rule-based system, could be a source of bad beliefs. The fact that people are pulled in two directions at once is a potential source of bad beliefs.

Both of the two-processing frameworks (i.e., Kahneman and Sloman) clearly point to mechanics for generating bad beliefs which then underpin bad judgments. And clearly it is a complicated field. The bottom line is the need for thinking at higher levels: reasoning, rule-based thinking, slow thinking, methodical thinking, linear thinking, and ferreting out potential constraints, bad beliefs, and biases related to heuristics, culture, bad-belief generators (as in Appendix 1) and personal psychological characteristics.

From the Creedal Side

One important notion that can be drawn from the cognitive science of religion as developed by Barrett (2004, 2009, 2011), with respect to beliefs, is that there are two, or perhaps three, key categories of beliefs. Barrett has termed two of the categories: non-reflective beliefs and reflective beliefs. Non-reflective beliefs would align with Kahneman's (2003) Intuitional (System 1) thinking, and Sloman's (2002) Associative system. Reflective beliefs, on the other hand, would align with Kahneman's (2003) Reasoning (System 2) thinking, and Sloman's (2002) Rule-Based system.

A possible third belief category would be properly basic beliefs, and perhaps even common sense. Appraising current thinking on evolutionary psychology, albeit outside of the biological box (e.g., Barrett, 2004, 2009, 2011; Murray, 2009, Murray & Goldberg, 2009; Plantinga, 2009), challenges some of the more naturalistic accounts of belief formation, or even naturalism itself (Haught, 2009; Plantinga, 2009). The challenges offer insights regarding beliefs

and belief-formation relevant for many arguments regarding beliefs of interest in this essay (i.e., beliefs which underpin a smoking orientation, a homosexual orientation, addictive thinking, a heterosexual orientation, suicidality, disordered eating, and so on).

Using Barrett's (2009) distinction between non-reflective and reflective beliefs, as well as the category of properly basic beliefs, provides a three-category system of beliefs: properly-basic beliefs, non-reflective beliefs, and reflective beliefs. There are times when the categories overlap; for example, a reflective belief that has gained automaticity, or habit-status, will function as a non-reflective belief. A properly basic belief (e.g., "I think therefore I am," or my senses are generally trustworthy, or my memory is generally trustworthy, ...) can also function as a belief in the non-reflective beliefs category. At this point, though, the emphasis is on Barrett's two category system (reflective beliefs and non-reflective beliefs) as these neatly map onto both Kahneman and Sloman.

Barrett includes the following list as examples of non-reflective beliefs:

- People act in ways to satisfy desires.
- Rainbows exhibit six bands of color.
- Raccoons and Opossums are very similar animals.
- People from outside my group are more similar to each other than people inside my group.
- Animals have parents of the same species as themselves.
- Unsupported objects fall (Barrett, 2009, p.78).

There are mental tools, or cognitive tools, that lead to such non-reflective beliefs. Foremost would be a belief along the lines of properly basic beliefs:

- belief in one's existence
- trust in one's senses generally

- trust in one's memories generally
- trust in the rules of logic generally
- trust in one's intuitions generally, and
- trust in reason generally
- perhaps even a trust in common sense

The first four mental tools that Barrett advances from various sources are: (1) Naïve Biology ("Naïve Biology generates the non-reflective beliefs that animals bear young similar to themselves, and living things act to acquire nourishment..."), (2) Naïve Physics ("Naïve Physics generates the non-reflective belief that objects tend to move on inertial paths, cannot pass through other solid objects, must move through the intermediate space to get from one point to another, and must be supported or they will fall..."), (3) an Agency Detection Device ("The Agency Detection Device automatically tells us that self-propelled, goal-directed objects are intentional agents..."), and (4) Theory of Mind ("Theory of Mind gives us non-reflective beliefs concerning the internal states of these intentional agents and their behaviors: agents act to satisfy desires, actions are guided by beliefs, beliefs are influenced by percepts, and satisfied desires prompt positive emotions...") (Barrett, 2009, p.79). These mental tools lead to non-reflective beliefs.

There are more mental or cognitive tools that generate non-reflective beliefs. For example, "Intuitive Morality," "Intuitive Dualism," and "Intuitive Teleology" or "promiscuous teleology," have been posited (see Barrett, 2009) as drivers of non-reflective beliefs. As well, there is the intuitive "Contagion Avoidance" (Murray, 2009) that strikes one as consistent with non-reflective belief.

Before moving on to Barrett's reflective beliefs it is worth noting that McCauley (2011) divides System 1 thought (Kahneman's Intuitive system, Sloman's Associative system, and

Barrett's Non-Reflective system) into two systems, two types of naturalness: (1) practiced naturalness (e.g., writing, riding a bike, playing chess, and more), and (2) maturational naturalness (e.g., chewing, walking, and the deep structure of language). As he notes: "The distinction between practiced naturalness and maturational naturalness applies no less readily to intuition, thoughts and beliefs. Cognition too can seem natural simply because it is well-practiced and because it is culturally well-supported or, on the other hand, because it emerges, independently of any cultural distinctive influences, in the course of human development (p. 26-27)." Some intuitions align with practiced naturalness and result from schooling, from exercise with routine problems, and from domain-specific experience—expertise. Some intuitions align with maturational naturalness and are typified by descriptors like innateness, hard-wired, modularity, unlearned, non-cultural—species-specific, nativistic, knowledge.

Barrett posits reflective beliefs as distinct from non-reflective beliefs. Reflective beliefs are beliefs we acquire through reflection: deliberate reflection, or reading, or authorities, or induction, or deduction, or abduction, or confabulations, or gossip, or mere opinion. Quoting Barrett: "... when people say they believe that insects are more plentiful than mammals; $E = mc^2$; bananas are yellow; Lance Armstrong is the reigning Tour de France champion; or Tom Cruise is six feet five inches tall; they are expressing reflective beliefs. Whether a belief is reflective does not bear on its truth-value or whether it is justified (2009, p. 78)." . . . Reflective beliefs are beliefs that emerge from the interplay of bottom-up information from cognitive tools and top-down applications of executive cognitive processors. The products are reflective beliefs.

Reflective beliefs are not necessarily true beliefs. False beliefs, and bad beliefs, are constructions, or reflective beliefs, that might be adaptive. By the same token, false beliefs, and bad beliefs, are reflective beliefs, that might be maladaptive. At the extremes, theft might be adaptive or maladaptive. Rape might be adaptive or maladaptive. In a naturalist worldview there

is such a case to be made for various adaptive and maladaptive scenarios. In a creedal worldview there is the likelihood of challenging adaptive and maladaptive formulations. In creedal worldviews there is a call to change one's belief, to adopt a better belief.

With respect to reflective beliefs, thinking can go awry as a result of: (1) logical fallacies, (2) heuristics and biases (see Gilovich, Griffin, & Kahneman, 2002; Kahneman, 2003), (3) perceptual, conceptual, and memory limits on processing, and (4) context-specific biases. Barrett illustrates context specific biases by flagging what can go awry in the face of testimony. We trust others generally, which aligns with a credulity principle. The trust is undergirded by a *conformity bias* (we conform to the beliefs of those around us), a *prestige bias* (we trust those with status, power and celebrity), and a *similarity bias* (we trust people like us).

There are other cognitive constraints that serve as interferences. In fact, the list seems endless, and one wonders how clear reflective thinking is at all possible. In this chapter (and Appendix 1) a number of cognitive traps and dangers have been considered (e.g., Kahneman, 2003; Piattelli-Palmarini, 1994; Sternberg, 2002; Twerski, 1997). Reflective thinking is hard work. As McCauley expresses it: "Natural cognition is what comes to all of us easily (2011, p. 13)." But the reflective, higher order, scientific thinking is hard; it is unnatural.

With respect to non-reflective and reflective beliefs, thinking can go awry as a result of (1) limitations on perception, memory, and attention, (2) responses to limitations like change-blindness, illusions, confabulations (Gazzaniga, 1985), (3) intrusions from long term memory systems, (4) content-specific biases, and heuristics (Kahneman, 2003), and (5) personal factors like fatigue, time-of-day, and mood (Kahneman, 2003). Barrett (2011) presents three content-specific biases as samples of the "tip-of-the-iceberg" of biases that impact non-reflective beliefs: face detection, fear of snakes, and categorical colour perception. This "hard-wiring" aligns with

innate biases which have the potential to impact our beliefs. He writes: "...our minds preferentially attend to and differentially process some types of information over others, handling different domains of information in different ways (p. 38.)" Back to McCauley's (2011) claim: it's going to be hard work. It takes effort to get good reflective beliefs, theories, science, verisimilitude, and truth.

Choice and Responsibility for Beliefs

Bad beliefs in this Creedal/Cognitive Science framing are rooted at one level in reflective beliefs (System 2 thinking). At this level "deliberate choice heuristics" are used to help deal with conceptual and cognitive load limitations, or "computational and memory limitations" (Frederick, 2002, loc 8460). Here the person's responsibility is obvious, although mitigating factors are not out of the question. People can make choices, rule-based choices, reasoned choices at time-one (T1), and then, given practice, unconsciously transfer that particular belief to the more automatic systems—the Intuitive system (Kahneman), or the Associative System (Sloman), or the level of non-reflective beliefs (Barrett). Habits transfer from System 2 to System 1, apparently routinely.

Here the assignment of responsibility gets murky. The person would not appear to be responsible for the automatic belief, the associative, intuitive belief, at time-two (T2). However, upon reflection, their responsibility cannot be abrogated entirely as their reasoning, effort, and choices were involved at the earlier stage of acquisition—the Reasoning stage. In a cross-sectional examination (synchronic) at T2 they appear to lack responsibility; in a longitudinal examination (diachronic), the responsibility moves from the penumbra to the spotlight.

Other scenarios that point to personal choices, albeit unripe choices, in belief formation might be: opting to succumb to the affect heuristic, choosing the shallow processing prompted by the Internet (i.e., laziness, or impulsive response style), or choosing the default position, or following the familiar. This likely occurs at the non-reflective level, but it interferes with System II level thinking—the formation of sound reflective beliefs.

Bad beliefs can be rooted in non-reflective beliefs as well as reflective beliefs. Such heuristics as the affect heuristic, choosing by liking, choosing via familiarity, or choosing by default are more automatic and therefore clearly System 1 (Intuitive, Associative and non-reflective) choices. As Frederick writes: "Defaults may be established via historical precedent, perceptual salience, conspicuousness, or some other feature that qualitatively distinguishes one option from the rest (2002, loc 8554)." That said, there is a case for an epistemic, even moral, override on System 1 level beliefs via System 2 level belief processes (Reasoning, Rule-Based thinking, and Reflection). This is science; this is knowledge; this is generating good beliefs, and culling bad beliefs.

Asking the question: What is the place for choice, and culpability, in the acquisition of bad beliefs?" leads one to preferential weighting for System 2 thinking. System 2 thinking is an epistemic obligation. In a court of law, one suspects System 1 thinking would be no excuse for "sins of omission or commission," although such thinking could be entertained as mitigating. In "higher courts" a greater focus on excuses is warranted, a greater focus on choice is incumbent.

Applications

Smoking, for example. Applying the Creedal/Cognitive-Science framing (regarding non-reflective beliefs, and reflective beliefs) to smoking is relatively easy. Smoking aligns with

various reflective beliefs in the initial stages—the smoker believes, upon reflection, that he can experiment with smoking, that he can value smoking, and that he can quit smoking. He believes his smoking is a choice. His curiosity, amongst other drivers (see Appendix 1) pushes him to choose an experience. As the smoking habit becomes entrenched, however, the belief shifts to the more non-reflective category—the smoker, with a smoking orientation, after successive and painful attempts to quit, now believes he cannot quit smoking and he believes this with a degree of automaticity.

The smoker's beliefs have fragmented somewhat: at the beliefs-in-use level the smoker believes, habitually now, that he cannot quit smoking. This component of the belief is largely non-reflective. At the espoused-belief level, he might say he can quit, it's just that he doesn't want to quit (a rationalization?). So this latter component of his belief is still at the reflective level. Another type of smoker may be functioning with the complete belief (non-reflective and reflective) that he can't quit—a belief that is fully non-reflective.

Homosexuality, for example. Similar to the smoking example, applying the Creedal/Cognitive Science framing to homosexuality is relatively easy. Homosexual ideation and practice aligns with various reflective beliefs in the initial stages—the homosexual believes, upon reflection, that he can explore, experience, make choices, and entertain homosexual ideation and behaviour. He might believe his homosexuality is an inner drive, a curiosity, or even a choice at times. As the homosexuality becomes entrenched the belief shifts to the more non-reflective category—the homosexual now believes he cannot influence his homosexual beliefs (his orientation) and he believes this with a degree of automaticity. The beliefs have fragmented somewhat: at the beliefs-in-use level the homosexual might believe, habitually, that he is innately homosexual. This component of the belief is now non-reflective—habitual. At the espoused-belief level, he might be wrestling with an identity; so this component of his belief is

still at the reflective level. Another type of homosexual, the "out-of-the-closet" type—may be functioning with the original reflective belief now transformed into a belief that is fully non-reflective.

Heterosexuality, for example. Again, similar to the smoking example, applying the Creedal/Cognitive Science framing to heterosexuality is relatively easy. Heterosexual ideation and practice aligns with various reflective beliefs in the initial stages—the heterosexual believes, upon reflection, that he can explore, experience, make choices, and entertain heterosexual ideation and behaviour. In line with his culture he believes his heterosexuality is an inner drive. He is curious. He even makes choices at times that involve heterosexual ideation, heterosexual play, and eventually a confirmation bias (Nickerson, 1998) set in motion. As the heterosexuality becomes entrenched the belief shifts to the more non-reflective category—the heterosexual now believes at one level that he cannot influence his heterosexual beliefs (his orientation) and he believes this with a degree of automaticity.

The beliefs have fragmented somewhat: at the beliefs-in-use level the heterosexual might believe, habitually, that he is innately heterosexual. This component of the belief is now non-reflective—habitual. At the espoused-belief level, he might still be entertaining reflective activity considering arguments for alternate sexual outlets. This component of his belief is operating at the reflective level. This subsequent reflection could lead to further transformations of a basic heterosexual identity as the belief-in-use. Reflective beliefs can transform apparently fixed non-reflective beliefs.

Decision Theory and Bad Beliefs

Since people are viewed as truly making choices, decision theory is an important consideration. Decision theory, quite likely influences bad beliefs via: (1) mechanism, (2) belief infrastructure (beliefs, creedal system, and worldview), and (3) appetites (wishes, wants, and curiosities). The literature on decision theory mechanisms, psychological and economic, is broad, empirical, and complex. Baron (2008) presents decision theory—and the empirical studies underpinning choices—clearly, but nevertheless, he loads the process in such a way that one hopes for an easier route, or an elegant explanation, to decide what is the key consideration—or considerations—when one comes to terms with what is happening when one chooses.

To capture the complexity consider what Baron (2008) considers. There is a *normative theory of choice* and a *descriptive theory of choice*. Under the *normative theory of choice* there is *utility theory* (with utility viewed as usefulness or goodness) considered in four parts: (1) *expected-utility theory* (focusing on the trade-offs between the usefulness of an outcome and its probability), (2) *multi-attribute utility theory* (focusing on trade-offs regarding different goals), (3) *utilitarianism* (focusing on trade-offs between the goals of different people), and (4) *temporality* (focusing on goals and outcomes at different times, as the future can carry less weight, or framed another way: the future likely aligns with a different caliber of choice). Broadly the *utility theory* approach draws upon inference, not a search for more evidence.

Expected-utility theory addresses *states*, *options*, and *outcomes*. It addresses: desirability. It addresses probability effects related to time: benefits in the short run, and benefits as in *"the long-run argument"* scenarios. For example, in the Casino the house always wins *in the long run*. Also, *expected-utility theory* addresses principles like the *"weak-ordering principle,"*

(which "simply asserts that we can do this, that it makes sense"), the *"sure-thing principle,"* (we like the sure-thing), and a *trade-off consistency principle*.

The *descriptive theory of choice* flags the fact that our decisions are not always decisions that best achieve our goals. A descriptive theory is an applied approach with a focus on attending to an individual's actual choices rooted in experiences, memories, and learning. Here, choices can be influenced by *"framing effects,"* that is, influenced by how the situation is presented, reference points, gains vs losses, risk aversion vs risk propensity, maximizers vs satisficers, emotions (regret vs rejoicing, disappointment vs elation), ambiguity and missing information. Baron's (2008) summary comment on how to deal with such problems offers three routes: "I have suggested that actively open-minded thinking and the judicious use of formal decision analysis ...are parts of the answer to this question, but we may also need to learn new heuristics specifically for making decision (p. 287)." Open-mindedness is a given. Judicious use of formal decision analysis is certainly desirable, and an admirable undertaking, but complex. Learning new heuristics, or even appropriate heuristics, holds much promise, and may be the best, or frontline, approach. This would be especially true for heuristics that are part of a design plan, cognitively-based, showing proper function, or adjusted as a function of known compromising influences. Such an approach to heuristics impacting choice would be somewhat analogous with Plantinga's (1993a, 1993b, 2000) approach to warranted belief.

Thus, the "elegant" approach one looks for could involve a focus on heuristics, but along the lines of Plantinga's approach to warrant and proper function. Plantinga (1993b) presents his basic claim for warrant and proper function quite simply: "As I see it, a belief has warrant if it is produced by cognitive faculties functioning properly (subject to no malfunctioning) in a cognitive environment congenial for those faculties, according to a design plan successfully aimed at truth (p. ix)." To paraphrase Plantinga, then, with respect to a decision-heuristic: *As I*

see it, a belief-based, heuristically-driven choice has merit if it is produced by cognitive faculties functioning properly (subject to no malfunctioning) in a cognitive environment congenial for those strategies, according to a design plan successfully aimed at the good.

Plantinga presupposes reliability. One could presuppose reliability for heuristics as well, even though they at times lead the chooser astray. Analogically, proper function of cognitive faculties can lead one astray in Plantinga's view as well. For this reason, and as with Plantinga's view on warrant, there are qualifiers, or caveats, such that there is a need to acknowledge: (1) co-existing plans (what he terms the design plan versus the max plan), (2) by-products, (3) functional multiplicity (4) purpose versus design, and (5) "trade-offs and compromises" (See Plantinga, 1993b, p. 21-40) as relevant constructs impacting belief-based decisions. Heuristics could suffer dysfunction from glitches, by-products, functional multiplicity, trade-offs, misalignment with a design-plan, and co-existing plans.

Assume next that there are various creedal influences on choice, or creedal theories of choice (Christianity, Judaism, Buddhism, Humanism, Naturalism, and so on), that should be factored into consideration of decision processes. At this stage the significance of one's goals are to be considered, as well as the mechanics of one's choices. Here a question to ask is: What are proper functioning heuristics in a particular creedal view? Or conversely: What are improper functioning heuristics, in that creedal view?

What heuristics are fundamental in a Christian creedal view? For the Christian what surfaces immediately would be: the broad Christian community, the Christian tradition and history, the Bible, the Church, doctrine, dogma, catechisms, creeds, elders, Fathers, theologians, and so on. These would represent multiple heuristics to draw upon.

What heuristics are fundamental in a Naturalist creedal view? For the Naturalist what surfaces immediately as heuristics would be: Darwin, natural selection, diversity, survival of the

fit, fossil record of transition, the tree of common descent, determinism, event causation, and so on.

A Synthesis

A synthesis of the theories with respect to smoking, heterosexuality, homosexuality, eating-problems, suicidality, creative writing, musical genius, and so on, is presented along the lines of four key concepts: *inception*, *learning*, *entrenchment*, and *change*. First, *inception* points to the motivating power of an idea regardless of how it is attained. The motivating influence could be pre-conscious as in: (1) an *omni-appetite hypothesis* as presented earlier, (2) the System 1 formulations for beliefs (intuition, automaticity, associativeness, and non-reflective processes), or (3) the ideomotor formulation for action (see Appendix 1). In effect, associative influences push commencement—*inception*. If the seminal idea is socially or psychologically suspect, then certain suspicions arise: possibly the idea has arisen associatively, from the dark side of curiosity (Ariely, 2008), or the dark side of creativity (Cropley, Cropley, Kaufman, & Runco, 2010), or simply, from natural exposure and just plain intrigue. That small first step, though, that "first step" that Zimbardo (2004) pointed to and weighted heavily, is seen to have power. Little ideas can impel mightily.

Secondly, comes *learning* (see Appendix 1 for theories and models of learning generating bad beliefs) which draws upon the opponent-process theory (Solomon & Corbit, 1973, 1974) as one mechanism for learning that incorporates the formative influence of both the aversive and the hedonic aspects of the targets under implementation. The ideomotor action, if not blocked, can be rewarded. The darkened mind proposal with Zimbardo's (2004) ten ingredients for implementing suspect behaviour portrays *triggering* protocols and *maintenance* protocols that can lead to behaviours that appear contrary to nature. Learning! As well, System 2

processes would be active at this phase with Reasoning (Kahneman), Rule-based thinking (Sloman) and Reflection (Barrett) engaged. Learning!

The third concept is *entrenchment*. All theories offer mechanisms, or principles, or illustrations of entrenchment—the solidification of the target behaviour. Learning theory laws seen in the opponent-process theory (Solomon & Corbit, 1973, 1974) lead to entrenchment of behaviour. This holds with respect to both aversive and hedonic aspects of the behaviour. The contribution from ironic effects theory (Wegner, 1994, 1997) illustrates how intentions to change can actually lead to deeper entrenchment of the behaviour. One intends to implement certain behaviours, and ends up doing the opposite, ironically. The darkening mind proposal, drawing upon Zimbardo's (2004) ten ingredients, illustrates how the entrenchment unfolds. The action-identification theory of Vallacher and Wegner (1985, 1987) points to the characteristic defaulting to lower level thinking that can occur in the presence of constraints. System 1/System 2 thinking (Barrett, 2009, 2011; Kahneman, 2003; Sloman 2002) clarifies how beliefs can become entrenched and characterized by use of heuristics and biases, along with transfers of learning (System II learning) to the level of automaticity (System 1 level thinking) via habit. Addictive Thinking theory (Twerski, 1997) demonstrates the place of self-deception in adopting certain behaviours and orientations. The *entrenchment* is evident in the resistance to change because of the prominent influence of denial, rationalization, projection, and lying. The thinking is delusional.

The fourth concept is *change*. The theories capture the potential difficulty of change. In the opponent-process theory, one can be dealing with loneliness, craving and grief (see Table 9) which would serve to push for the maintaining of entrenchment. In action-identification theory, constraints encountered (social, psychological, situational, or imagined) push one to lower levels of thinking not to wholesome change. Lower levels of thinking would not likely be conducive to

the quality of thinking needed to actually plan and implement a change-protocol of sophisticated self-regulation. In ironic effects theory, change efforts are notoriously problematic; in effect, planned change typically backfires. System 1/System 2 thinking clarifies the power of heuristics and biases to nullify reason, to inhibit higher order processing, and to block change. The darkened mind postulate illustrates the power of a cover story, the power of semantics, the dangers of a gradual shift of image, and finally the rising problem of exit costs. The exit costs can be too high to actually work out a change program. If there is to be change, the addictive thinking framework points to the rigour required, the therapy required, the insight required, the supports required, the shifts in beliefs or worldview required, in order that one might move in the direction of even small changes. Belief shifts!

Chapter 6: Education For Belief-Based Change

In recent years there has been a shift, in some quarters, away from the unilateral biological determinism that has dominated thinking about a range of topics, topics like intelligence, personality, and sexual orientation. In human beings causality is complex. Simply attributing everything to biology lacks complexity. The shift has stressed the importance of multiple factors in addition to the biological, and its close friends luck and chance. Indeed, there are broad psychological factors, social factors, social and personal constructionist claims, learning and education influences, and the complex interactions of multiple variables, including human agency, which warrant consideration.

In view of this shift beyond the biological, it is once again fitting for change-agents like educators, therapists, and parents to be more widely informed on topics like eating problems, substance use, sexual action identifications[1], suicidality, musicianship, athletic prowess, creative writing, and so on. Informed educators and parents are aware of information related to language issues (e.g., definitions of "normal"), etiological roots (e.g., biological, psychosocial, social constructionist determinants, luck, and personal agency), correlates of specific behaviours (e.g., depression, suicide, sex-type behaviours, gender, and so on), the immediate environment influences (e.g., community, school, family, peers, teams, and one's personal idiosyncratic psyche), trajectories (developmental paths, change options, and interventions), and worldviews

[1] Even current thinking about homosexuality is showing a shift away from genetic and biological determination. A recent APA Brochure notes: "There is no consensus among scientists about the exact reasons that an individual develops a heterosexual, bisexual, gay, or lesbian orientation. Although much research has examined the possible genetic, hormonal, developmental, social, and cultural influences on sexual orientation, no findings have emerged that permit scientists to conclude that sexual orientation is determined by any particular factor or factors. Many think that nature and nurture both play complex roles; most people experience little or no sense of choice about their sexual orientation" (*American Psychological Association, 2008).As* Jones and Yarhouse (2011) note this is a change from the 2005 American Psychological Association absolutist view. Their direct quote (p. 404) from the APA is: "Can therapy change sexual orientation? No... .[H]omosexuality is not an illness. It does not require treatment and is not changeable." The door to possible change seems to have opened a little in 2008.

(naturalism, humanism, and religious or creedal ideologies). Such information is, or should be, instrumental in communication, curriculum, policies, and pedagogy.

The informed educator ideally realizes that there is, in part, a *biological basis* for (1) states like eating ills, suicidality, homosexuality, substance abuse, zoophilia, pedophilia, ADHD, and (2) proficiencies like athletic skill, temperament, and musicianship. At the same time, this wise educator acknowledges that research literature advanced to support *biological bases* (for homosexuality or for suicidality, for example) is critically incomplete, does not preclude environmental factors as more important, and often points to a minor role for biology, at best. Educators need to turn to, and draw upon, broad perspectives, without abandoning available, applicable biological information.

At least one camp of educator (the cognitive camp) ought to strive for honesty and comprehensiveness first, then compassion, not the other way around.[1] The cognitive trumps the emotive, or ought to, for this cognitive camp. Perhaps this should be rephrased as the cognitive should trump the emotive, just like truth should trump political correctness.

Informational Frameworks for Educators

In terms of frameworks for educators to facilitate dealing with problems like sexual concerns, Irvine (2001) offers an informative discussion of both a *multicultural* framework and an *in-school public health* framework. Both have strengths and weaknesses. As she presents the frameworks, the *multicultural* framework is seen to have pedagogical strengths. With respect to a topic like sexual orientation, particularly homosexuality, the *multicultural* framework contextualizes the information, firstly. Secondly, this framework presents the topic with a

[1] There is a danger that an agenda privileging affect can impel advocates on both sides of the issue to (1) intentionally misrepresent the empirical data to the point of blatant and acknowledged lying (see Irvine, 2001) or (2) intentionally advance "therapeutic" misrepresentation (see Spence, 1982).

normalizing intent. Finally, it operates with a stress on empathizing. Nevertheless, with respect to a homosexual orientation, it does contain political weaknesses with some interest groups raising issues of morality and other groups claiming there is usurpation of inappropriate parallels with ethnicity, culture, and race.

The *public health* framework is informative. It offers resources for both educators and students; it offers supports for students; it addresses risk factors which help to inform both educators and students. And finally, it serves to provide protection for students. On the other hand, there is a down side noted by Irvine: this framework can lead to problems, or unintended consequences, like ghettoizing student groups or pathologizing students.

Drawing on the time-based LOOKING-*Model* (LOOK-LOOKS-BOOKS-BOOKED) utilized earlier, we could contend that Irvine's two approaches fit in the T2 stage (the LOOKS stage) for the many who are curious (i.e., for "the questioning"). They are gathering information. Both the *multicultural framework* and the *in-school public health framework* do provide information. Such information would appeal to the curiosity in human nature (Kashdan, 2009) and the incipient learning that human beings experience.

Also, Irvine's approaches could function in the T3 stage (the BOOKS stage) for a minority (i.e., for "the concerned"). This group would be more actively engaged in acquiring informed cognitive concepts. At this stage learners would be more actively engaged in constructivism—constructing models, constructing possibilities, constructing identities, and perhaps even constructing experiments.

Finally, Irvine's approaches could function in the T4 stage (the BOOKED stage) for the few (i.e., "the self-identified"). This group would likely be building their constructs in terms of political knowledge, philosophical justifications, and apologetics. On the darker side they could be constructing rationalizations, self defences, self-deceptions, and confabulations.

One potential problem with these approaches (i.e., the *multicultural framework* and the *in-school public health framework*) is the moral neutrality—the frameworks are not helpful for those looking for moral guidance. The conflict would be evident when considering the analogy of homosexuality and smoking in terms of these stages. The moral sentiments of the teacher arise and colour the content regardless of which framework is adopted. For example, some teachers are more likely to structure their curriculum to criticize or discourage smoking rather than homosexuality. Why? Is it social constraints? Is it sensitivity to political constraints? Does one feel pressured by a push to political correctness for homosexuality? Are there compassionate constraints operative? The moral overlay on curriculum is potentially important, and potentially blocked.

A *critical thinking* framework which invites all information and arguments to the table, including the moral arguments, would be ideal and would ideally let the best arguments win. But, with respect to homosexuality, "teaching the controversy" (1) might not be appropriate for pre-adolescent students, or some adolescent students, (2) might not be viewed as politically correct in most jurisdictions, (3) might not be fairly presented by educators with an agenda, and (4) might encounter legal road blocks given the opposing worldviews that would be at the table.

As an analogy with smoking, inviting a representative of a tobacco company into the classroom to present her case, then "teaching the controversy" (1) might not be appropriate for pre-adolescent and adolescent students, (2) might not be viewed as politically correct in most jurisdictions, (3) might not be fairly presented, and (4) might encounter legal road blocks given the opposing worldviews that would be at the table. There are problems potentially resident with the biases of the presenter.

Imagine how the public would react to an educational forum on a variant of smoking—that is, the ill effects of second hand smoke. A classroom exercise considering the possibility

that the focus on the dangers of second hand smoke is overblown, could draw fire, or would draw fire. And this conflagration would exist even if there was significant empirical research challenging the validity of the second-hand-smoke political agenda (for an intriguing examination of the research see Snowdon, 2009). It isn't typically easy when dealing with sensitive topics, even when the research is compelling, or at least at a level that warrants serious consideration.

A multiple-perspective-taking process—whether for smoking, eating problems, suicidality, or sexual practice—could cover all the bases fairly inviting learners at the LOOKS stage (T2) to harness all frameworks of the learner, integrate the frameworks like those that Irvine (2001) discusses, compete at the level of theoretical differences, and bear fruit. The major problem is in ensuring adequate critique, balance, and fair presentation.

Self-Regulation Frameworks for Learners

These self-regulation frameworks address self-regulation as (1) a *resource*, (2) as a set of affect regulation *strategies*, and (3) as *skills* with cognitive regulators. First then, there is the construct of *resources* or self-regulatory strength which Schmeichel and Baumeister (2004) compare to muscles, "…because self-regulation operates like strength: High at first, strength diminishes as the muscles are exerted, and only after some rest is strength restored to its initial power. Other implications of the analogy to strength are that people seek to conserve self-regulation once it begins to be depleted, and it can be gradually increased by exercise (p. 87)." One draws upon limited resources to regulate behaviour; when those resources are depleted in one area, say schoolwork, there may be a shortage for dealing with demands related to resisting the call to smoke, resisting the penchant for bullying, or implementing the call to practice basketball shots.

One relevant educational practice would be to reduce demands on individuals when self-regulation load is high. A related approach would be a program to encourage habits which could help one get around self-regulation load demands. Ideally, this could push for automaticity in key areas which would allow for limited resources to be applied in other high-demand areas. This focus helps free up *resources*.

Secondly, there is the focus on *strategies* for self-regulation. Larsen and Prizmic (2004) offer a number of strategies for self-regulation of affect. Such strategies might work in the early stages of acquisition for smoking, homosexuality, suicidal ideation, "obsessions" with playing video games, or playing soccer. Their list includes strategies like the following:

- Distraction (reorient the mind, shift attention)
- Avoiding rumination (again, shift attention)
- Venting
- Suppression (another form of shifting attention)
- Cognitive reappraisal …to find meaning in the events
- Downward social comparison (looking at others in more serious stages of the behaviour)
- Implementing Plans …to avoid the problems (e.g., no cigarettes in the house)
- Self reward protocols (i.e., rewarding positive avoidance behaviours)
- Physicality (e.g., exercise, relaxation)
- Community as resource (e.g., socializing, seeking advice, seeking support)
- Religiosity (e.g., seclusion, isolation, meditation, reflective time)
- Reframing: "counting one's blessing," showing gratitude
- Service (e.g., helping others, showing kindness, pay it forward…)
- Smiling: humour, laughter, jokes...

Thirdly, the *skills* reside cognitively in acquiring the *strategies*, building *strength*, and *using* these assets. However, one must approach such resources wisely and under the management umbrella of cognitive executive processing resources. For an executive function model, though developed with the ADHD individual in view, see Barkley (2004).

The educational focus here is on *skills*, *strategies* and *strengths* for the learner. The educator uses goals, curriculum, and pedagogy to support the development of students into mature, self-

regulated learners. Applied to smoking, or homosexuality, or eating problems, the thrust is maturity, or expertise, leading to good judgment, common sense, better beliefs, and best practices.

Innovative Frameworks For Educators

Three innovative frameworks for educators are considered here—a *systems framework*, a *worldview framework*, and a *learner-as-scientist framework*. These three approaches are considered as possible vehicles for dealing with the constraints and problems identified (see also Appendix 1), problems related to the opponent-process theory of learning, problems related to action-identification theory, problems related to ironic effects theory, and problems related to the darkened mind theorizing. Strategies and opportunities to circumvent these problems or mitigate these problems are evident in these novel frameworks. Where these innovative frameworks differ, in part, from the conventional frameworks is with respect to the focus. Conventional frameworks focus on addressing the particular problem of change as a *direct effect*; the innovative frameworks consider change related to the particular problem as a *collateral effect*.

A Systems Framework

The first way to conceptualize this educational intervention, or course of action, is to view it as a systems process. This could be formulated at two levels: the level of the school-as-system (as a school is clearly a system), or at the level of the individual-as-system (as individuals have the elements of a system, or even a set of systems). It is the latter which is considered here, that is, the individual-as-system.

Consider the smoker in the context of a person-as-system. Viewing a person as a system, rather than as a smoker, offers one a much broader framework, and foundation, for conceptualizing, for education, and for intervention. Smoking is not a simple linear act; there are various system components (e.g., biology, addictions, habits, peer relations, self-regulation resources, history, and so on) sustaining or restraining the act of smoking. Similarly, for eating problems, for homosexuality, for suicidal ideation, there are functional systems operative, sustaining or restraining.

One conducts a systems analysis. One plans on systems-changes. One implements systems protocols. To illustrate various ways to approach systems-changes, consider an aspect of systems thinking which is normally applied to macro systems. The focus here is more on systems thinking and complexity (Stacey, Griffin & Shaw, 2000) rather than its postmodern cousin, namely, just "simple" complexity-thinking (Davis & Sumara, 2006; Davies, 2004). The quality of systems-thinking is substantially better, broader, and anchored in traditional philosophers like Kant and Hegel (see Stacey, et al., 2000), whereas, complexity-thinking shows ties to postmoderns like Derrida, Foucault, and Rorty (see Davis & Sumara, 2006). Thinking in terms of systems has more to offer than a focus on complexity theory. Indeed the complexity thinking (in education) of Davis and Sumara (2006) is dramatically suspect[1]. And the thinking

[1] In Davis and Sumara, deference to authorities like Derrida, Foucault, and Rorty is problematic. The jargonistic text (e.g., *"ignorances" and "abdications," "complexity researchers," "intertwining questions," "simultaneities,"*) is problematic. The tentativeness of the text *("We organize the chapter around several vital simultaneities offered by complexity thinking, which we* ***believe*** *render it...."* ***"tend"*** *"****seem to****" "****not often been undertaken****" "we* ***have attempted to portray*** *some aspects of the dynamic" "****often****" "****in a sense****" "****has often been conflated****"*) is problematic. They offer no real direction other than the injunction to remain open. "*Complexity thinking addresses each of these questions—and importantly, does not settle on conclusive answers. The point, then, is not that everyone should agree, but that there must be an attitude of openness toward new possibilities (p. 167)."* They foolishly place hopes in jargon, neologisms, abandonment of propositions, and description. Witness their quote from Rorty: *"The ironist...takes the unit of persuasion to be vocabulary rather than a proposition. Her method is redescription rather than inference. Ironists specialize in redescribing ranges of objects or events in partially neologistic jargon, in the hopes that by the time she is finished using old words in new senses, not to mention introducing brand new words, people will no longer ask questions phrased in old words (p. 167)."* Their claim challenging more classical thinking is not convincing: *"One of the grand errors of classical inquiry has been the mistaking of the theoretical, the descriptive, and/or the experimental result with stable and secure knowledge.*

(in education) of Davies (2004), though better in many places, puts the mind on alert mode[1]. Thus, while many might push for a more fashionable focus on complexity thinking, a wiser approach is to consider complexity thinking with, or parallel to, a more reasonable "systems thinking" focus.

Consider stability and change, with a mindset acknowledging both systems and complexity. Stacey, et al (2000) have the broader systems view when they address five types of teleology: natural law teleology, rationalist teleology, formative teleology, transformative teleology, and adaptionist teleology. This can be quite helpful when considering the human as a system even though the authors are dealing primarily with organizations. The first three strands (natural law, rationalist, and formative) aim at a *knowable future* (i.e., change in a linear and predictable direction). While treated separately by Stacey et al (2000) one can overlay our targets of interest here (i.e., smoking, homosexuality, eating-disorders, suicidality, musical prowess, etc.) on all three strands and draw educational suggestions and direction. The following Table (Table 16) is drawn from and modeled on a fuller chart presented by Stacey et

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Complexity thinking does not permit this error—and not only because phenomena that learn cannot be pinned down with certainty (p. 169)." Surely this is not an accurate assessment of the scientific epistemologist's views of the theoretical, the descriptive and the experimental.

[1] From Davies consider the following quotes. First (from p. 208): *"Both war and authoritarianism are linear; but peace and democracy are complex."* Assume that the parallelism implied here indicates that the opposite of complex is "linear." Is there no case for a claim that war is complex, or that authoritarianism is complex? Second (from p. 207-208): *"Non-exclusion means that no options or alternatives (however improbable) should be excluded from consideration. Non-isolation means that no one single option is privileged as 'optimal' or the 'most efficient.' Uncertainty must continue."* The first sentence I buy, as it aligns with an earlier position of placing "all ideas on the table." The second and third sentences are problematic. And if the third sentence is true then, in fact, am I advised to be uncertain about her claims in sentence 1 and sentence 2? Yes. Is it self-refuting? Third (from p. 209): *"Complexity theory shows us how non-linear political systems such as democracy can have unpredictable outcomes."* I suppose it may show that for some types of learners this is the case. But academics learn that—and probably more credibly—from traditional academic disciplines like history, psychology, sociology, political science, statistics, psychometrics, biography, and so on. One doesn't need "complexity theory" to learn it. Fourth (from p.220): although she offers a favourable presentation of fun, play and humour here she then kills it. Consider her quote from Murphy "This apparent need for order and truth blinds us to a more radical conclusion: it is not a particular false 'truth' that is the source of social evil, it is the notion of Truth itself." Nonsense! The false truth that ice cream will cure a bacterial infection will lead to more social evil than 'the Truth,' that antibiotics will kill the bacteria. The 'notion of Truth' that there is a cure, is a truth worth preserving and adopting. Smart people can believe stupid things. See Sternberg's (2002) examination of this phenomenon.

al (2000, p. 26). Several key elements are presented in the table; then, such constructs as a smoking orientation, an eating-orientation, a homosexual orientation, an athletic-orientation and a musical-orientation are considered with respect to these three teleological strands.

Table 16. Framing Teleology and Change in the Direction of a *Knowable Future*. From Stacey et al. (2000).

	Secular Natural Law Teleology	Rationalist Teleology	Formative Teleology
"Movement toward a future that is:"	"a repetition of the past"	"a goal chosen by reasoning autonomous humans"	"a mature form implied at the start of movement…"
"Movement …in order to:"	"reveal or discover hidden order, …sustain an optimal state"	"realize chosen goals"	"reveal, realize or sustain a mature or final form of identity, of self…."
"The cause of movement is:"	"universal, timeless laws or rules…"	Reason, ethical universals, values, motivation	"…unfolding a whole that is already enfolded…"
"Nature and origin of change:"	"corrective, 'getting it right,'… fitting"	"designed change through rational exercise of human choice to get it right in terms of universals"	"shift from one given form to another…" "Stages of development"
Freedom and Constraints	Freedom in conforming to natural laws	"freedom finds concrete expression on the basis of ethical universals"	"…constrained by given forms"

A smoking orientation, for example, maps onto the Table at multiple levels. Smoking, arguably, most easily maps onto the *Rationalist Teleology*. Smokers make a choice freely, for particular goals and as a function of their values at the time of *inception*, and as a function of the motivational influences at that time. Further, the smoking orientation maps onto the *Secular Natural Law Teleology*, in that, responses to the laws of learning theory (e.g., Law #1: every behaviour followed by a good effect tends to be repeated) push one to an "optimal state," "fitting," and "conforming" to such laws. And thirdly, the smoking orientation is the "mature form implied at the start of the movement," so it maps onto the developmental aspects of the *Formative Teleology*.

With the athletic-orientation we could start with the *Formative Teleology*. The athlete has a mature form unfolding as an ideal and as a reality; constraints are existing competitive

forms. Then there is the *Rationalist Teleology* advanced secondly; that is, the athlete chooses, then she moves to realize those goals. The natural laws in the *Secular Natural Law Teleology* are like a river bank guiding the flow.

With the homosexual-orientation we start with the *Formative Teleology*. The homosexual has a mature form unfolding as an ideal and as a reality; constraints are existing competitive forms. But there is also the *Rationalist Teleology* being advanced; that is, the homosexual chooses, then he moves to realize those goals. Here, as with the athlete, the natural laws in the *Secular Natural Law Teleology* are like a river bank guiding the flow.

Yet, with the homosexual-orientation we could have started with the *Rationalist Teleology*, as in smoking, and give priority to the place of choice. By starting with this "choice" the *Formative Teleology* is seen to be a function of choice. It is like the pluripotent cell that can unfold in different directions, but the actual direction is determined by a prior message. In the case of homosexuality, and smoking, the prior message is a choice which then sets in motion a formative teleological unfolding within the guiding river banks of *Natural Law Teleology*.

As with smoking and sexual orientations (homosexuality, heterosexuality, zoosexuality, etc.) beginning with a choice, it is conceivable that athletic prowess, musical proficiency, creative writing, and so on, begin with a choice of a particular calibre. The choice is then maintained by subsequent choices of different calibres at various choice-points. Thus, it is the *Rationalist Teleology* that can be given priority. The other two strands are more deterministic once set in motion.

For educators the focus is best aligned with the *Rationalist Teleology* and traditionally this is the case. However, the broadened perspective presented here in the chart should encourage educators to draw upon *Natural Law Teleology*, that is, laws associated with learning as in the opponent-process theory of *learning* and the action-identification theory of *thinking*,

and the ironic effects of *choosing*. These can serve to frame a teacher's curriculum and pedagogy in a constructive way for a better teleological objective, or set of objectives. In addition, drawing upon a *Formative Teleology* can facilitate the understanding of a smoking orientation as a developmental process (with stages, and a series of choices) and not just a simple choice. Similarly, creative writing, athletic prowess, bullying, homosexuality, can be viewed as a developmental process, an unfolding. Locking in to one teleological strand could preclude the richer understanding that is necessary to keep constructs like development, choice, reason, laws, and motivation on the table for consideration.

They final two strands used by Stacey et al (2000) are *Transformational Teleology* and *Adaptionist Teleology*. These are aimed at change in the direction of an *unknowable future*. As might be inferred from the following figure the *Transformational Teleology* strand leaves the educator open to various change possibilities.

Table 17. Framing Teleology and Change in the Direction of an *Unknowable Future*. From Stacey et al. (2000).

	Transformational Teleology	Adaptionist Teleology
"Movement toward a future that is:"	"under perpetual construction… no mature or final state, only perpetual iteration of identity and difference, continuity and transformation…"	"a stable state adapted to an environment…"
"Movement …in order to:"	"express continuity and transformation of individual and collective identity… the creation of the novel…"	"survive as an individual entity…"
"The cause of movement is:"	"processes of micro interactions in the living present forming and being formed by themselves… Meaning arises in the present as does choice and intention…"	"…random variation …natural selection … Meaning lies in the future selected adapted state"
"Nature and origin of change:"	"gradual or abrupt changes in identity, or no change…"	"gradual change due to small chance variations…"
Freedom and Constraints	"both freedom and constraint arise in spontaneity and diversity of micro interactions; conflicting constraints…"	"freedom arising by chance, constrained by competition"

The *Transformational Teleology* strand seems to emphasize that what is, is. In addition, the "what is," is unique. It points to the case for the uniqueness of everything. There is no final state, only "perpetual iteration of identity and difference, continuity and transformation." Such

an approach resonates with an existential philosophy stressing becoming. It also resonates with (1) the penchant for the postmodern enchantment with mystery, (2) with eastern thought, and (3) with the far edge of conventionality. Likely, it is viewed as aligning with complexity theory, chaos, emergence, and those strange, counter-intuitive and contra-common-sense, self-organizing, punctuated shifts.

While the transformational vision extends to education as well (Davis & Sumara, 2006, Davies, 2004) one gets the sense that it is tenuous. O'Sullivan (1999), for example, a Transformational guru, seems to be relying on more traditional strands (*Rationalistic Teleology* and *Formative Teleology*) when making his case for an unfolding of the "ecozoic" (his term); though he does use terminology and concepts (e.g., emerging and evolutionary changes) in line with the *Transformational Teleology* and the *Adaptionist Teleology*. It just seems that his case-making (rationalistic methodology and teleology) doesn't align with his hopes (the novel, in the older native garb[1]).

The systems inferences to be drawn from this discussion are an argument for a broadened perspective on the part of the educator, and the adoption of a policy of multiple-perspective-taking. This multiple-perspective-taking supports analyses that fairly consider (and use) all teleological strands, but particularly the *Natural Law Teleology*, the *Rationalist Teleology*, the *Formative Teleology* and the *Adaptionist Teleology*. While the *Rationalist Teleology* is given the preeminent place, they all offer direction. Final outcomes, final orientations, are collateral effects of systems, and …choices.

[1] O'Sullivan (1999) writes: "A postmodern education embedded in an ecozoic horizon, will engage and tap into the profound significance of indigenous knowledge. It should be of real educational interest to enter into dialogue with world perspectives that have rich cosmologies. The outcome dialogues would, no doubt, be open-ended. …it is expected that new and more enriched perspectives will be generated (p. 197)." This seems tentative, as it should be. Is it not also possible that it could be a waste of time, a curious fascination with the darker perspectives abandoned for good reasons and resurfacing because of a false humility or shame? Although he dismisses "romanticizing" his claim is not a case that he has transcended romanticizing.

A Worldview Framework

An educator must be thoughtful when crafting an educational experience whether it is aimed at cognitive growth, social growth, or moral growth. The actual educative endeavour, or change protocol, is important. Focusing on specific target items like changes in smoking or over-eating, for example, can lead to: (1) ironic effects, (2) overtaxing one's self-regulation resources, (3) ideomotor or ideo-ideological action, and (4) narrowing of thinking or lower levels of thinking. The consequence could be less than ideal if not outright failure. Good intentions but bad consequences! To avoid failure then a changed focus, or a broad focus, is warranted.

To pursue a change in focus, perhaps what is really needed is a shift from a bad obsession to a good obsession. An obsession with food or alcohol is likely to be mitigated by an obsession with music, or athletic prowess. On a small scale there is a change in passions, or a change in paradigms. On a larger scale there can be a change in lifestyle. Still larger, a worldview change could have, and likely would have, numerous collateral effects.

Dramatic change can occur. Teachers can ignite a passion, an interest, a calling, an adventure. Teachers can address meaning, purpose, and fulfillment in a life. Such perceptual changes can underpin a more wholesome lifestyle, a more meaningful lifestyle, a more mature lifestyle, or just a different lifestyle. Some worldviews hold much promise.

Although worldviews hold promise, a principal consideration would be the nature and quality of the worldview. The pantheistic, eastern-type, mysticism that saturates O'Sullivan's (1999) Transformative worldview is one popular postmodern position. Then there are the monotheistic, religious, worldviews like Christianity, Judaism, and Islam. Or, there is secular humanism. Even New Age variants may have a place for consideration. Should these all be a

part of educational curriculum—and perhaps as important as reading, thinking, and serving? Are some worldviews better than others?

In effect, if the focus is primarily on a lifestyle change based on a worldview change, or worldview revision, rather than a focus on a specific problem-behaviour, the desirable consequences can be viewed as collateral effects. Consider various worldview-driven, lifestyle changes. Example #1: One quits smoking not because one primarily wants to quit smoking, but rather because one is now adopting an athletic lifestyle. Example #2: One quits smoking not because one primarily wants to quit smoking, but rather because one is now living a lifestyle of service in a cancer ward. Example #3: One quits smoking not because one primarily wants to quit smoking, but rather because one is now adopting a "health nut" identity. Example #4: One quits smoking not because one primarily wants to quit smoking, but rather because one is now adopting a religious, or holiness, lifestyle. The quitting smoking in these worldview shifts is a collateral effect. In this formulation there is reduced interference from action-identification mechanisms, ironic effects, and major problems with exit costs. Worldview is curriculum!

One can map this worldview aspect of the smoking analogy onto target behaviours like homosexuality, eating-disorders, suicidal ideation, and so on. Thus, the analogy works quite nicely across a wide range of behaviours, and orientations. The behaviours are in part a function of worldviews.

The Student-as-Scientist Framework

This method is based on the work of Ariely (2008, 2010). It aligns with the rationalist teleology proposed by Stacey et al (2000). Basically, students are encouraged to think critically; they are exposed to irrational thinking for analysis and reflection. The consequence should be better thinking and better beliefs. But, best of all, they conduct experiments to test positions, and claims. More accurate knowledge and better beliefs then become the foundation for applied

wisdom—choosing the better self, choosing the best self. If one's newly constructed knowledge via experimentation and critical thinking is not actualized as a better choice, at least it would rationally be acknowledged as a better choice. And likely this is sometimes the best teachers can hope for.

These breakout frameworks (i.e., teleological breadth, worldview change, and student-as-scientist) give the teacher substantive direction, a broad perspective, and a strategy to avoid getting bogged down with targeted specific change (whether a behaviour, an opinion, a prejudice, or a belief).

Normally, a major problem for educators (and therapists) is the *entrenchment* of a belief (or a behaviour, or an orientation) and the resistance mechanisms active when change is attempted. Of course, a clear assumption here is that change (as specified by educators, parents, politicians) is appropriate. Is directed change appropriate? Some in the Transformational stream might argue against directed change, valuing the chaos associated with complexity theory or the diversity associated with any ethological adaptionist view. They might adopt a non-judgmental position—what is, is, and be glad. Others in a similar way, perhaps more in line with an existential philosophy, could point to continuous becoming, various iterations, freedom and constraints arising spontaneously, with future freedoms and identities all emerging. Logically, reading this at face value, such educators are not likely to be interventionist; rather they are just participants[1] in the micro interactions.

Considering the conventional educational approaches to topics like smoking and sexual orientation, along with the "Breakout" approaches, one can ask: Is there a preferred approach? Is there an approach that addresses many of the points advanced in this text? As I see it the

[1] If they are not teachers disseminating information, or teachers facilitating meaningful constructions, or guides along a Formative journey, what are they? They don't rise to the level of coach, it seems, as teams and objectives, and wins, are transient and technically meaningless. Are they cogs? Are they guards?

Rationalist Teleological approach is primary but only when situated in the context of *Natural Law Teleology*, *Formative Teleology*, *Adaptionist Teleology*, *Worldview* arguments, and *Discipleship* along the lines of scientific thinking (i.e., critical, empirical, experimental, and abductive). Such a broad approach should lead to:

1. Educators working on developing good beliefs, better beliefs, and the best beliefs
2. Educators confronting beliefs that are resistant to change because of psychological phenomena like anchoring, illusory correlations, rationalizations, denial, self-deception, etc.)
3. Educators confronting behaviours that are resistant to change because of bad beliefs, ironic effects mechanisms, constraint-induced lower level thinking (action-identification theory), reward structures based on learning theory principles, exit costs, habits, addictions, etc.
4. Educators acknowledging change is possible, but often as a collateral effect rather than a direct effect.

Yes, teachers can insist on practices that hopefully would become habits, ingrained behaviours that will serve the learner well, but this is a small component.

Can we hope to achieve a civil union? Indeed, the smoking orientation and the sexual orientation seem linked analogously in a civil union. The various learning frameworks seem linked conceptually in a civil union. Paradigms, perspectives and worldviews, can function in civil unions. Is it just a matter of will—choice at optimal points in time? Is the *Rationalist Teleology* primary in terms of inception, deception, reception, conception…?

Chapter 7: Conclusions

Heterosexuality, homosexuality, disordered eating, suicidality, like smoking, begin, in part, with a choice. The choice is contextualized, in these cases, by variables from one's environment, one's personality, one's biology, and the complexities of the various interactions of these variables. These cases, like smoking, are maintained by choices, albeit, as a function of variations in the caliber of choice over time. These cases, like smoking, even when entrenched, have windows of choice, where blinds can be lifted, and courses altered. That is a basic conclusion reached in this examination of the analogy between smoking and various orientations, even homosexuality, and heterosexuality.

A homosexual orientation successfully maps onto a smoking orientation, thereby supporting the merit of the analogical argument advanced here. On the whole, given the successful mapping, one learns from the analogical reasoning that a sexual orientation, like a smoking orientation: (1) is learned, (2) has biological and environmental determinants, (3) is driven by choices which vary in caliber at various choice-points, (4) is eventually entrenched, (5) is vulnerable to a narrative truth construction (incorporating confabulations, rationalization, denial, and other forms of self-deception) rather than a historical truth reconstruction, (6) is resistant to change, and (7) is possible to change. Thus, both the smoking orientation and a homosexual orientation can be seen to be rooted in beliefs, in choices, in time, in learning, and in thinking.

Furthermore, as one develops protocols for assisting those with a smoking orientation, a logical spillover to developing protocols for those target areas with analogical parallels (e.g., homosexuality, obsessive creative writing, eating disorders and suicidality, etc.) would exist. And what seems to be critical is the place of beliefs, learning, education, and choices.

When looking for the primary discussion points that arguably emerge from this essay, there are several important spheres of concern that surface. Surely, if the important spheres for consideration relate to concepts like those mentioned above (e.g., beliefs, learning, education, change, and …thinking), then it is clear that the notion of *learning* is a hub, a principal focus, if not the principal focus.

The Importance of Beliefs

The learning-of-beliefs is key domain warranting comment. The notion of learning a belief would draw upon several amalgams: beliefs and thinking, beliefs and education, beliefs and responsibility, beliefs and causality, beliefs and morality, and beliefs and self-regulation. True enough! But interestingly, these condense to the common construct termed simply by the single word: "belief." Given the foundational importance of belief there is value in shifting the focus to a more general area, a focus on good beliefs, better beliefs, and the best beliefs—or perhaps, better still, justified true beliefs.

Bad beliefs can get people into trouble. Such trouble can be viewed, using a railroad metaphor, as (1) being *derailed* from a good trajectory or track, by a defective track, (2) being *re-railed* onto a bad line of track which could be due to a faulty switch or a substandard travel plan, or (3) simply *railroaded* on a track one would have been wiser to avoid initially.

Bad beliefs can lead to: (1) bad choices, (2) neutral choices, yet with bad consequences, or (3) apparently "good" choices with problematic consequences given the bad-belief source. Bad beliefs then compound problems through self-deception, denial, rationalization, shallow thinking, and other thinking failures. As discussed in the Appendix with respect to theories linking bad thinking and: (1) bad beliefs (e.g., action-identification theory, dissonance theory,

and so on), (2) learning theories (e.g., operant conditioning, and the opponent-process theory), and (3) the mechanics of self-regulation failures, beliefs are vital.

Good beliefs propel good choices, usually. So how do educators facilitate building good beliefs? In such a building program, there are such fundamentals to get onto the table as: dialogue, analysis, research, empirical data, critical thinking, dialectical processes, debate, multiple-perspective-taking, worldview analyses, support groups, twelve-step programs, and openness to problem areas like logical fallacies and self-deception mechanisms. And then there is patience; it is clearly a slow process to break from what Twerski (1997) calls addictive thinking. In a word though, the key is education—the push or pull towards better knowledge, sanctified knowledge, or wisdom.

The Importance of Choice

Getting to the wise place draws upon important interactions between biology, environment, and self that call for consideration. This is especially the case when controversial and problematic personal and social issues are involved. While the focus can often be domain-specific, perhaps primarily on the biological determinants (say of homosexuality, or disordered eating) or on the environmental determinants (say of smoking, for example) both domains are seen to be important in roughly equivalent ways. The isolationist practice, or a single-variable focus, whether drawn from environmental determinants or biological determinants, is too limiting. One needs to observe a multiplicity of variables within biology, environment, luck, chance, and complex interactions. Even so, this broadened approach can overshadow—and undervalue—the place and importance of choice, and choices. Choice warrants a pre-eminent place at the table, even for "addictions" (e.g., see Becker & Murphy, 1988; Skog, 2000; West, 2006). Choice is an essential consideration for a variety of reasons.

First, it is important to value choice because choice aligns with one of our most prized possessions—our *common sense*. Yes, there are times when our senses, and common sense, can deceive us, but overall we rely on our common sense. Our choices count; we know that. It is a basic belief to believe that our choices count.

Second, choice is a keystone, and cornerstone, of *creativity*. Constructivism, and constructionism, point to the creative contributions of human beings when building specific concepts, constructs, and knowledge items, as well as broad disciplines (e.g., ontology, psychology, epistemology, history, exploration, and technology). Human beings are involved in the process via personal intentionality. Human beings are not mere canvas and paint, they are artists as well. We have choice. We choose to create, and we choose what to create.

Third, choice *academizes*. By this I mean choice assigns merit and value to academic considerations like the growth of knowledge, scientific endeavour, the value of education, the merits of intervention, and the dangers of propaganda. Thus, choice can be seen to validate such considerations and pursuits as those defined broadly as academic.

Fourth, choice *integrates* such constellations of determinants like environment, history, psychology, sociology, luck, time, and biology, often by virtue of the centrality and function of the thinking person—the theory builder. Choice is the pivot point. Choice is the evidence of an efficient cause. Choice synthesizes variables into something new, something both information-rich and potentially with a transcendent meaning.

Fifth, choice *contextualizes* information with respect to developmental trajectories, and temporal trajectories. In effect, choice must always be considered with certain caveats. Developmentally, choices would be functionally related to the cognitive maturity, cognitive resources and cognitive style of the chooser. Such developmental underpinnings help explain limitations and variations on choice. As well, there are developmental trajectories of

rationalization, denial, projection, and self deception; choice has a role to play here at various stages. Temporally, the notion of choice-points has exposed how choices must be situated in a time-frame. Choice-points allow one to examine how choice can differ at two or more points in time: for example, the choice for cigarette #1, the choice for cigarette #101, and the choice for cigarette #100,001. There are vital changes in choices over time; choices would be seen to have different calibers, different power, different forcefulness, and different dynamics over time. Clearly, choices at some points are easier to make than at other points on a temporal continuum. Choices at some points seem innocuous, or minimalist; at other points these same choices seem fixed, intractable, and destructive. Choice requires one to contextualize this efficient cause in psychological development, conceptual development, and temporal development.

Sixth, choice *humanizes*. To quote again from Skog (2000): "To claim that an individual is unable to choose is a very radical view—it reduces this individual to something less than a full person. It implies that his or her behaviour is governed by causal mechanisms beyond volitional control, and reduces the individual to a consumption robot—a helpless spectator to his own body's movements (p. 1309)."

Seventh, choice offers the truly *transformative* agenda. Whereas, the absence of choice *animalizes* human beings, the presence of choice *humanizes*, or even *spiritualizes*, human beings. Choice assumes human edification, development, and transformation, as reasonable objectives; and choice assumes degeneration, malevolence, and foolishness, as possible objectives. Choice assumes actual human agency, and true libertarian free-will. Choice assumes personal responsibility for past selves, present selves, and future selves. Choice acknowledges mitigating factors. Choice is important, and perhaps the most important variable.

The Importance of Education[1]

This entire exploration of analogical thinking related to a smoking orientation and other orientations (like a sexual orientation) has served at one level to bring education to the frontlines. And, indeed, education ought to be brought back to the front—back to the frontlines of issues and back to the frontlines of conflicts. One compelling source of hope, when change is a consideration, is to be found in education. Education is important as learning is a significant key to change.

Arguably there are many aspects of education that should be highlighted as consequences of this exploration of analogical thinking related to smoking and a variety of orientations. As summary points of "educational" direction recommended here, several topics are listed. These topics address important features of education inferred from the broad use of analogical thinking here.

First, education in both curriculum and pedagogy should foster *multiple-perspective-taking*. It is important to get all ideas on the table for consideration. This holds for various good ideas, interesting credible hypotheses, and diverse but good competing theories. Yet equally important, it holds for bad ideas finding a place at the table as well, it holds for politically incorrect ideas finding a place at the table, and it holds for insensitive ideas and offensive ideas, finding a place at the table. This, in fact, arguably is a fundamental principle and requirement of scholarly integrity.

Second, *critical thinking* is integral to all educational endeavours. Students who acquire the dispositions and skills associated with good, clear, thinking, are in a position to develop better beliefs, and implement better action plans. Critical thinking requires attention to types of thinking, like deduction, induction and abduction. It requires attention to logical fallacies,

[1] Education is a broad term here and encompasses the normal educational system in a society, but it also incorporates broader "educators:" parenting, media, therapy, politics and laws, museums, religion, and history.

thinking traps, illusions, dissonance, and propaganda. It requires attention to psychological blocks like "addictive thinking" and self-deception. Thinking is a broad venture. Since the acquisition of critical thinking, and wisdom, is likely a long process, educators and thinkers, must be patient, persistent, pursuers of the good, the better and the best.

Third, education should be *beliefs-oriented* as a prelude to knowledge-oriented. Teachers who facilitate the critical construction of sound constructs—sound beliefs—which stand up to critical scrutiny from self and others serve students well. Learners need to be in a position to critique beliefs, that is, analyze beliefs, compare beliefs, judge beliefs, test beliefs, revise beliefs, reject beliefs, and defend beliefs. They need to be in a position to hold beliefs tentatively and tenuously. They need to be able to critique all beliefs—theirs and others. As noted at numerous points "bad beliefs" were a major underpinning problem of bad behaviour particularly as entrenched behaviour.

Fourth, education needs to be *research-oriented.* Students need to be researchers. They should be encouraged to follow their curiosities, albeit, critically, and wisely. They need to acquire the skills of the researcher. This can apply to library skills, empirical research skills, pursuit of authorities, questioning, analysis, hypothesizing, testing hypotheses, model building, theorizing, and so on. One "breakout" framework advanced in the essay (Chapter 6) called for an educational approach that treats the learner as researcher. There may even be a case that learning is research. Or a case that thinking is research!

Fifth, education needs to address *scope*. In part, educators have addressed one form of scope in the focus on developmental psychology. Particularly, it is common to address the stages of physical development, cognitive development, language development, moral development, social development and so on, in educational practices and plans.

Another aspect of scope involves the acquisition of an idea, a belief, an attitude, a prejudice, and the like. Acquisitions occur over time. The scope of various acquisitions is investigated but the path of acquisition is fuzzy. Such fuzziness is due, in part, to the fact that different people may take different routes to the same end, or, take the same route but find themselves with different ends.

Developmental *scope* follows a *formative teleology*, whereas acquisition *scope* follows a *rationalist teleology*. A third aspect of *scope,* in the analogical reasoning process, relates to the timelines and trajectories of concept development, particularly with respect to the implementation of certain concepts. Given a developmental timeline, the focus is on changes in the engagement with a concept, or constraints on a concept, at various choice-points. Choice, for example, was seen to be reasonably different at different times, and in different contexts, and for different objectives. Such constraints are consistent with the *natural law teleology* primarily, but interact with processes following both a *formative teleology* and a *rationalist teleology*. In essence, the focus here is broader than just *scope*; rather it is a focus on the *scope* of *scopes*.

Sixth, *self-regulation* is important as an educational objective. When people falter with respect to drug use, smoking, dysfunctional sexual curiosity, disordered eating, suicidality, gambling, video game addictions, and so on, a major problem is self-regulation. A prominent educational focus should be on facilitating students in their acquisition of good self-regulation resources. It is an important research area, as well as an important clinical focus, and both of these are congruent with a wise educational agenda. Self-regulation can prevent numerous problems. In terms of a cost-benefit analysis, prevention and early intervention are likely to be more productive than rehabilitation.

Seventh, *innovative frameworks of education* can be conducive to many of the items targeted above. The *student-as-scientist* approach would facilitate the following: multiple-

perspective-taking, critical thinking, critiquing beliefs, conducting research, dealing with scope, and application of self-regulation. *Dealing with competing worldviews* is conducive to: multiple-perspective-taking, critical thinking, dealing with beliefs, research, and scope. A *systems approach* easily draws in: multiple-perspective-taking, critical thinking, dealing with beliefs, research, scope and self-regulation. Furthermore, the *systems approach* draws in those important teleological considerations.

Applied to smoking, encouraging the smoker to consider *vital educational practices* (i.e., multiple-perspective-taking, critical thinking, dealing with beliefs, research, scope, and self-regulation problems) likely can lead to belief-changes and hopefully to behaviour-changes. Similarly, encouraging those who see themselves problematically (e.g., being problem-eaters, being suicidal, or being sexually troubled) to adopt *vital educational practices* might very well lead to belief-changes and behaviour-changes.

The Importance of Thinking

A pervasive theme in this essay has been the centrality and importance of thinking when dealing with issues like smoking, drug abuse, eating problems, suicidality, sexual orientation, gambling, obsessive writing practices, musical engagement, athletic activity, and wide range of obsessions and appetites. There is a *broad framework* and a *narrow framework*. Central to considering sound thinking in the *broad framework* are various pivotal constructs: beliefs, learning, knowledge, choice, education, interventions, entrenchment, vision, revision, and change. The breadth of the field in view when formulating a broad thinking-based framework is monumental.

The *narrow framework* is captured by focal points in cognitive science. Here one attends to different processing systems (e.g., System I and System II, as presented by Kahneman, 2011).

In considering a two-systems, or three-systems, approach one is allowing a place for: (1) cognitive factors that interfere with beliefs and belief-formation (e.g., restraints, biases and heuristics), and (2) system priorities where one system can trump another system, rightly or wrongly. The depth of the field in view when formulating a narrow thinking-based framework is monumental.

Although the scope of thinking seen in conceptual analyses is quite broad, the primary consideration in thinking which was used as a tool in this exploration was analogical thinking. Narrowing the thinking focus to analogical thinking was seen to be vividly vital for comparing a smoking orientation and a sexual orientation; it was arguably informative, formative, and reformative.

Indeed, analogical thinking, as a form of inductive thinking (Moore & Parker, 2001), allowed for the placement of a wide range of facts, ideas, theories, and possibilities, onto the table for consideration. Subsequently, there was a case for inductive and reasonable syntheses. And as a "bridging" strategy to facilitate understanding of a complex concept by means of a simpler concept, analogical thinking worked well. Arguably, analogical thinking, as a form of reasoning and problem solving requiring theoretical and empirical analyses (Gentner & Markman, 1997; Holyoak & Thagard, 1997), was seen to be a revealing strategy.

Sexual orientation is in part, indeed, in large part, an orientation in formation under the influence of personal choices, biological determinants, and environmental influences at a primary level (i.e., inception), much like the smoking orientation. At a secondary level (i.e., entrenchment) there are patterns related to beliefs, history, trajectories, time, learning, self-deception, consolidation, habit, and so on, much like the smoking orientation. While it was analogical thinking that provided the backbone here, various additional aspects of thinking fleshed out the process and the product. Yes, sexual orientation (both heterosexual and

homosexual) was a principal focus, but so too were orientations related to smoking, eating problems, drug use, suicidality, athletic prowess, writing, musical proficiency, bullying, and so on. These other orientations were given shape by the thinking strands advocated in this exploration of analogical thinking related to a smoking orientation and a sexual orientation.

It is not just the choices one makes, or the caliber of one's choices, that are important, though these are viewed here as foundational. We also need to address the caliber of belief, the caliber of knowledge, the caliber of schools, the caliber of families, the caliber of media, the caliber of cognitive systems, indeed, the caliber of any determinant that impacts children, adolescents, and adults today. There are frameworks, creedalist and naturalist, that can serve such analyses. Multiple-perspective-taking serves thinking well, yet careful, fine-grained, and nuanced additional considerations are warranted.

The Principal Position

The attempt to situate oneself in this broad topic is helped by the wearing of multiple worldview hats simultaneously. This approach is called SODA, which stands for *Simultaneous, Overlapping, Discrete, Authorities*. It is, firstly, a takeoff on Stephen Jay Gould's (1999) notion of NOMA—"Non Overlapping Magisterial Authorities." While Gould presents a clear and intriguing case[1] for considering two legitimate authorities (science and religion), his labeling of them as non-overlapping is too limiting, even misleading. In fact, he does make the case that they do overlap in some ways. He writes: "…all human beings must pay at least rudimentary attention to both magisteria of religion and science, whatever we choose to name these domains of ethical and factual inquiry (1999, p. 58)." Further: "The magisteria will not fuse; so each of

[1] While I don't agree with Gould I find his book admirable. His position is admirable. His treatment of the politicized outliers is admirable. For example, his examination of the flat earth stereotype is scholarly. Moreover, his treatment of the Scope's trial and Bryan is scholarly—that is, fair and balanced, more so than polemicized.

us must integrate these distinct components into a coherent view of life (1999, p. 58).” Surely this is characterized by some form of overlapping. The simultaneous worldviews as framed in the present essay are naturalism and creedalisms (i.e., systems housed in philosophical or theological frameworks that challenge and even supersede naturalism).

With respect to naturalism it is not simply the adoption of *philosophical naturalism* that positions the scholar, as this too must be framed by one’s creedalism. Though *philosophical naturalism* is the dominant view in the sciences, and in the scientific approach to sex studies (e.g., Bailey, 2003), it is arguably fundamentally flawed (see Haught, 2006; and Plantinga, 1993b, particularly Plantinga’s chapter “Is naturalism irrational?” and Plantinga’s response to naturalist challenges in Beilby, 2002).

A second approach which acknowledges positioning, *methodological naturalism*, is simply assuming naturalism for scientific research purposes. The person adopting this instrumental stance would typically adopt alternate creedal worldviews in other areas of his or her life. It is a compartmentalized, personal, psychological approach.

A third approach could be called *paradigmatic confluence*. In this approach the paradigm of naturalism is adopted but considered simultaneously with a non-naturalism paradigm, or what could be called *creedalism* (e.g., postmodernism, Christianity, Buddhism, Islam, existentialism, humanism, pragmatism, and so on). In essence, here we would have simultaneous, overlapping, discrete authorities—SODA. NOMA might fit conceptually, and for thinking analytically, but SODA fits practically, actually, and for thinking synthetically and abductively. Of interest, the later Gould (2003) does argue for a broader approach incorporating multiple perspectives, multiple magisterial, and an avoidance of dichotomous thinking which he terms the dichotomous fallacy.

To illustrate an application of SODA consider the following: some smokers choose to smoke, are happy as smokers, value smoking, and would like to be left alone. When wearing the *naturalism paradigm*, one describes their behaviour, we speculate on the motives, and we project outcomes related to health. We might even wonder if smoking facilitates a diversity that can enhance the species. We test explanatory models of smoking behaviours; we explore biological determinants, environmental determinants, models of interactions, and even luck. Switching to a *creedalism paradigm*, say to Christianity, we make value judgments: (1) one ought not to try and control smokers because freedom to choose a life course is a higher value, (2) one ought not to smoke because smoking has harmful health effects on an individual, (3) one ought not to smoke because smoking has harmful social effects, via modeling, on youth, (4) one ought not to smoke because smoking has harmful social effects on health care costs, (5) one ought to support smokers because smoking has addictive qualities that often overwhelm individuals, (6) one ought to support smokers because tolerance is a virtue, (7) one ought to support smokers because smoking makes people calm, thin, and happy, (8) one ought to quit smoking because it is the right thing, the better thing, to do, and (9) one ought to make the philosophical case, true to the moral paradigm, for and against smoking. *Paradigmatic confluence* holds both simultaneously and evaluates both simultaneously, although one's creedalism carries the heavier load.

To illustrate with homosexuality the reasoning is similar. Some homosexuals choose their orientation, are happy as homosexuals, value homosexuality, and would like to be left alone. When wearing the *naturalism paradigm* we describe their behaviour, we speculate on the motives, we project outcomes related to health, we wonder if homosexuality creates a diversity that can enhance the species, and we test explanatory models. Switching to a *creedalism paradigm*, say to Christianity, we make value judgments: (1) one ought not to try and control

homosexuals because freedom to choose a life course is a higher value, (2) one ought not to adopt a homosexual orientation because homosexuality has harmful health effects on an individual, (3) one ought not to adopt a homosexual orientation homosexuality has harmful social effects, via modeling, on youth, (4) one ought not to adopt a homosexual orientation because homosexuality has harmful social effects on health care costs, (5) one ought not to adopt a homosexual orientation because homosexuality has biblical injunctions against it, (6) one ought not to adopt a homosexual orientation because homosexuality has an inferior teleology, (7) one ought to support homosexuals because homosexuality has addictive qualities that often overwhelm individuals, (8) one ought to support homosexuals because tolerance is a virtue, (9) one ought to support homosexuals because homosexuality makes people calm and happy, (10) one ought to make the philosophical case, true to the moral paradigm, for and against homosexuality, and (11) one ought to make the political and logical case that government has a vested interest in the propagation of the next generation and therefore should implement proscriptions and prescriptions regarding the generation, education, and protection of children. Again, *paradigmatic confluence* holds both simultaneously and evaluates both simultaneously, although one's creedalism carries the heavier load.

This SODA approach easily applies to zoosexuality, pedophilia, necrophilia, eating problems, and the entire panoply of acquired behaviours, beliefs, orientations, attitudes, theories, hypotheses, and so on. The solution to bad thinking is likely to be best understood in a multiple paradigmatic framing of the issues.

This approach is consistent with that which Yarhouse (2001) calls for in his integration of valuative frameworks when considering the development of a sexual identity. The "valuative framework" is at times a religious worldview. It is a fair model for the developmental paths of a sexual identity that Yarhouse proposes—a five-stage model that allows for consideration of

competing creeds. One benefit of the model according to Yarhouse (2001) is that it helps explain the common notion of "gays, and ex-gays, and ex-ex-gays (p. 340)." There is a place for fluidity in each of the five stages: Stage 1: *Identity Confusion/Crisis*; Stage 2: *Identity Attribution*; Stage 3: *Identity Foreclosure versus Expansion*; Stage 4: *Identity Reappraisal*; and Stage 5: *Identity Synthesis*. There is room in this stage model for thinking, beliefs, agency, choices, change, learning, reflection, biological influences, social influences, cultural influences, compassion, tolerance, dignity, and freedom.

The model can be set up in a table as follows.

Stage					
1	Identity Confusion or Crisis			-Experiencing an incompatibility with values, beliefs, religion, culture… -Confusion re sexual arousal psychology -Cognitive immaturity	
	▼	▼			
	Yes ▼	No►	Identity Foreclosure		
2	Identity Attribution			-attribution to emerging identity -attribution to proclivities, curiosity, inclinations, etc.	
	▼	▼			
3	Identity Foreclosure	Identity Expansion		-"same-sex experiences and relationships and social networks facilitate a gay identity" -"examine alternatives to a gay identity and lifestyle"	
	Adopt a gay, lesbian or bi identity	Examine alternatives to a gay identity			
4	Identity Reappraisal (success with identity)				
	Yes ▼ / No►	Yes ▼ / No►	Back to Stage 1	-response to difficulties with either trajectory. -based on "personal satisfaction, peer group support, family responsiveness and support, and one's own religious, cultural, or personal valuative framework"	
5	Identity Synthesis				

Figure 6. Yarhouse's model of sexual identity development adapted from Yarhouse (2001).

This model seems amenable to the development of analogical orientations: a smoking orientation, a disordered eating pattern of behaviour, a suicidal proclivity, or just playing the guitar. The model, in effect, supports the analogy with smoking or guitar playing.

Revisiting Homosexuality and Smoking

Homosexuality, like smoking, is ephemeral if the analogical reasoning developed here is sound. It is learned, and it is based on choices that morph at various choice-points. It is eventually entrenched. It is amenable to addictive thinking and self-deception, it is rooted in questionable beliefs, and it is changeable albeit with great difficulty, like smoking. Where does the analogy break down? It seems to be sound.

In terms of structuring an argument consider the following:

(1) A homosexual orientation is analogous to a smoking orientation.

(2) A smoking orientation is acquired.

(3) A homosexual orientation is acquired.

A variety of minor premises could be substituted here which would lead to logical deductions about the homosexual orientation. Consider the following:

(1) H2- A smoking orientation

a. Is learned

b. Is built on choices

c. Is influenced by culture

d. Is influenced by biological factors

e. Is outside a social desirability norm

f. Is changeable

g. And many more...

The arguments are compelling if the major premise stands. And the major premise certainly seems firm.

So, when now asked to give a response to the cause of homosexuality, for example, the sound bite itself is complex (and draws upon the arguments and evidence presented in this essay and Appendix 1). The sound bite is:

> *"The cause is simple and complex reward-systems (operant learning theory, opponent-process-theory), curiosity, constrained thinking (via action-identification theory, dissonant thinking theory, self deception, addictive thinking, illusory thinking), self-corrective backfires (ironic effects theory), bad beliefs, developmental lags in resources (cognitive immaturity, and self-regulation weaknesses), bad constraint systems (parents, politics, media, culture, laws), cost/benefit analyses where benefits outweigh costs, bad choices, chance, and time, all in the context of a smattering of biological influences. The cause is a complex constellation of variables, all of them centered on thinking, learning, and choosing."*

When wearing the *naturalist paradigm* hat there is no judgment, just description, just knowledge constructions, just theories and just hypotheses. When wearing the *religious paradigm* hat there are formulations of understanding, compassion, and calls to a changed-mind, to better thinking, to wisdom, and to grace. There may be arguments not considered here; they are welcomed though. Persons and their arguments are welcomed. Smokers, and their arguments, are welcomed. Zoophiliacs and their arguments are welcomed. Those with curiosities light and dark are welcomed. The person and the arguments are welcomed.

Revisiting Heterosexuality and Homosexuality

Heterosexuality, like homosexuality, can be viewed as learned if the analogical reasoning developed here, and rooted in smoking, is sound. Orientations are acquired via

cognitive learning processes, and are based on choices that morph at various choice-points. Orientations are eventually entrenched. Orientation acquisitions are amenable to rational processes, appetite and appetite excess, addictive thinking and self-deception. They are rooted in beliefs, and they are changeable albeit with some difficulty (e.g., smoking). Where does the analogy break down? It seems to be sound.

In terms of structuring an argument consider the following:

(4) A heterosexual orientation is analogous to a homosexual orientation and a smoking orientation.

(5) A smoking orientation is acquired.

(6) A homosexual orientation is acquired.

(7) A heterosexual orientation is acquired.

A variety of minor premises could be substituted here which would lead to logical deductions about the heterosexual orientation. Consider the following:

(2) H2- A smoking orientation

a. Is learned

b. Is built on choices

c. Is influenced by culture

d. Is influenced by biological factors

e. Is consistent with a social desirability norm

f. Is changeable

g. And many more...

The arguments are compelling if the major premise stands. And the major premise seems firm.

So, when now asked to give a response to the cause of heterosexuality, for example, the sound bite itself is complex and similar to the response for the cause of homosexuality. The sound bite is:

> *"The cause is excessive appetites, simple and complex reward-systems (operant learning theory, opponent-process-theory), curiosity, restricted thinking (via action-identification theory, dissonant thinking theory, addictive thinking, illusory thinking), beliefs, developmental levels in resources (cognitive immaturity, and self-regulation limitations), effective constraint systems (parents, politics, media, culture, laws), cost/benefit analyses where benefits outweigh costs, choices, chance, and time, all in the context of a smattering of biological influences. The cause is a complex constellation of variables, all of them centered on thinking, often rational thinking, learning, and choosing."*

When wearing the naturalist paradigm there is no judgment, just description, just knowledge constructions, just theories and just hypotheses. When wearing the creedal paradigm, the Christian worldview, there are formulations of understanding. And the apparent judgment, for all orientations, harks back to the book of Judges, and their roles of deliverer, when deliverance was sought.

Revisiting Other Orientations

Theism, atheism, and agnosticism are orientations. A particular religious belief (Christian, Mormon, Roman Catholic, Moslem, Hindu, etc.) is an orientation. One takes a stance based on biological factors, environmental factors, luck, chance, time and choice. As with the sexual orientations the religious orientations can be attributed to a range of influences:

> *"The cause is excessive appetites, simple and complex reward-systems (operant learning theory, opponent-process-theory), curiosity, restricted thinking (via action-identification theory, dissonant thinking theory, addictive thinking, illusory thinking), beliefs, developmental levels in resources (cognitive immaturity, and self-regulation limitations), effective constraint systems (parents, politics, media, culture, laws), cost/benefit analyses where benefits outweigh costs, choices, chance, and time, all in the context of a smattering of biological influences. The cause is a complex constellation of variables, all of them centered on thinking, often rational thinking, learning, and choosing."*

The orientation is chosen initially when choice is powerful. It is entrenched later when choice weakens, atrophies, or competes with the power of addiction or the obstinacy of belief (Lewis, 1960).

References

Adams, P. F. & Hardy, A. M. (1991). AIDS knowledge and attitudes for July-September 199: Provisional data from the National Health Interview Survey, Advance Data from Vital and Health Statistics 198 (Hyattsville, Md.: National Center for Health Statistics, September 26, 1990, p.11).

American Psychiatric Association, (1993). Psychiatrist's view on homosexuality. Psychiatric News, September. Washington: D.C. American Psychiatric Association.

American Psychiatric Association, (1994). Diagnostic and Statistical Manual of Mental Disorders, 4th edition. Washington: D.C. American Psychiatric Association.

American Psychological Association. (2008). Answers to your questions: For a better understanding of sexual orientation and homosexuality. *Washington, DC: Author*. *[Retrieved from www.apa.org/topics/sorientation.pdf.]*

Arendt, H. (1963). Eichmann in Jerusalem, A report on the banality of evil. New York: Penguin Books.

Ariely, D. (2008). Predictably irrational: The hidden forces that shape our decisions. New York: HarperCollins Publisher.

Ashcraft, M. H. (2002). Cognition (3rd Edition). Upper Saddle River, New Jersey: Prentice Hall.

Ayduk, O. & Mischel, W. (2002). When smart people behave stupidly: Reconciling inconsistencies in socio-emotional intelligence. In R. J. Sternberg (Ed.) Why smart people can be so stupid. New Haven: Yale University Press (pages 86-105).

Bagemihl, B. (1999). Biological exuberance: Animal homosexuality and natural diversity. New York: St. Martin's Press.

Bailey, J. M. (2003). The man who would be queen. Washington, DC: Joseph Henry Press.

Bailey, J. M. (1995). Biological perspectives on sexual orientation. In A. R. D'Augelli & C. J. Patterson (Eds.) Lesbian, gay, and bisexual identities over the lifespan (pp102-135). New York: Oxford University Press.

Bailey, J. M. (1999). Homosexuality and mental illness. Archives of General Psychiatry, 56, 883-884.

Bailey, J. M., Dunne, M. P. & Martin, N. G. (2000). Genetic and environmental influences on sexual orientation and its correlates in an Australian twin sample. Journal of Personality and Social Psychology, 78, 33.

Bailey, J. M. & Pillard, R. C. (1991). A genetic study of male sexual orientation. Archives of General Psychiatry, 48, 1089-1096.

Bailey, J. M., Pillard, R. C., Neale, M. C. & Agyei, Y. (1993). Heritable factors influence sexual orientation in women. Archives of General Psychiatry, 50, 217-223.

Bailey, J. M. & Zucker, K. J. (1995). Childhood sex-typed behavior and sexual orientation: A conceptual analysis and quantitative review. Developmental Psychology, 31, 43-55.

Bakan, P., Dibb, G. & Reed, P. Handedness and birth stress. Neuropsychologia, 11, 363-366.

Barkley, R. A. (2004). Attentiondeficit/hyperactivity disorder and self-regulation: Taking an evolutionary perspective on executive functioning. In R. F. Baumeister & K. D. Vohs (Eds.) Handbook of self-regulation. New York: The Guilford Press (pages 301-323).

Baron, J. (2008). Thinking and deciding (4th ed). New York: Cambridge University Press.

Barrett, J. L. (2004). Why would anyone believe in God? Lanham, MD: ALTAMIRA Press.

Barrett, J. L. (2009). Cognitive science, religion, and theology. In J. Schloss and M. J. Murray (Eds.) The believing primate: Scientific, philosophical, and theological reflections on the origin of religion. Oxford: Oxford University Press (p. 76-99).

Barrett, J. L. (2011). Cognitive science, religion, and theology. West Conshohocken, PA: Templeton Press.

Bartlett, F. (1932, 1995). Remembering: A study in experimental and social psychology. New York: Cambridge University Press.

Batra, V., Patkar, A. A., Berrettini, W. H., Weinstein, S. P., & Leone, F. T. (2003). The genetic determinants of smoking. Chest, 123, 1730-1739.

Baumeister, R. F. (1997). Evil. New York: A. W. H. Freeman.

Baumeister, R. F. (2005). Self and volition. In W. R. Miller & H. D. Delaney Judeo-Christian perspectives on psychology. Washington, D.C.: American Psychological Association.

Baumeister, R. F. & Vohs, K. D. (Eds) (2004a). Handbook of self-regulation. New York: The Guilford Press.

Baumeister, R. F. & Vohs, K. D. (2004b). Four roots of evil. In A. G. Miller (Ed.) (2004). The Social psychology of good and evil, (pages 85- 101). New York: The Guilford Press.

Baumeister, R. F., Mele, A. R., & Vohs, K. D. (Eds.) (2010). Free will and consciousness. Oxford: Oxford University Press.

Baumeister, R. F. & Tierney, J. (2011). Willpower. New York: The Penguin Press

Baumrind, D. (1995). Commentary on sexual orientation: Research and social policy implications. Developmental Psychology, 31, 130-136.

Bayer, R. (1981). Homosexuality and American psychiatry: The politics of diagnosis. New York: Basic Books.

Beaton, A. (1985). Left side, right side. New Haven: Yale University Press.

Beauregard, M. & O'Leary, D. (2007). The spiritual brain. Toronto: Harper Perennial.

Beauregard, M., Lévesque, J., & Paquette, V. (2004). Neural basis of conscious and voluntary self-regulation of emotion. In M. Beauregard (Ed.) Consciousness, emotional self-regulation and brain. Amsterdam: John Benjamins Publishing Company (pages 163-194).

Becker, G. S. & Murphy, K. M. (1988). A theory of rational addiction. Journal of Political Economy, 96, 675-700.

Beetz, A. (2005). New insights into beastiality and zoophilia. In A. M. Beetz and A. L. Podberscek (Eds.) (2005). Beastiality and zoophilia (pp 98-119). West Lafayette, Indiana: Purdue University Press.

Beilby, J. (Ed.) (2002). Naturalism defeated? Ithaca: Cornell University Press.

Beis, R. (1964). Some contributions of anthropology to ethics. The Thomist, 26, xx-xx.

Bekoff, M. & Pierce, J. (2010). Wild justice. Chicago, Il: The University of Chicago Press.

Bell, A. P., Weinberg, M. S., & Hammersmith, S. K. (1981), Sexual preference: Its development in men and women. Bloomington: Indiana, Indiana University Press.

Bem, D. J. (2001). Exotic becomes erotic: Integrating biological and experiential antecedents of sexual orientation. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp. 52-68). New York: Oxford University Press.

Bergmark, A. & Oscarsson, L. (1987) The concept of control and alcoholism, *British Journal of Addiction*, 82, 1203–1212.

Berman, L. A. (2003). The puzzle; exploring the evolutionary puzzle of male homosexuality. Wilmette, IL: Godot Press.

Berofsky, B. (2002). Ifs, cans, and free will: The issues. In R. Kane (Ed.) The Oxford handbook of free will (pp 181-201). New York: Oxford University Press.

Billings, P. & Beckwith, J. (1993). Born gay? Technology Review, (July), 60-63.

Blanchard, R. (2005). Early history of autogynephilia. Archives of Sexual Behavior, 34, 439-446.

Boklage, C. E. (1984). "Twining, handedness, and the biology of symmetry." In N. Geschwind & A. M. Galaburda (Eds.) Cerebral dominance, (p 196-210). Cambridge: Harvard University Press.

Boswell, J. (1980). Christianity, social tolerance and homosexuality. New Haven, Connecticut: Yale University Press.

Bouchard, C. & Pérusse, L. (1993). Genetic aspects of obesity. In C. L. Williams & S. Y. S. Kimm (Eds.) Prevention and treatment of childhood obesity. Annals of the New York Academy of Sciences, 699, 26-35.

Boughton, B. (2002, 2006). Smoking. Gale Encyclopedia of Medicine. Downloaded on July 6th 2007 from: http://www.healthatoz.com/healthatoz/Atoz/common/standard/transform.jsp?requestURI=/healthatoz/Atoz/ency/smoking.jsp

Bobrow, R. S. (2002). Sexual orientation and suicide risk among teenagers. JAMA, 287, 1265-1266.

Brady, P. (2004). New study links smoking and suicide. Yale Daily News. Wednesday April 7th, 2004. Downloaded from http://www.yaledailynews.com/articles/printarticle/10685

Brent, D. A. & Mann, J. J. (2003). Familial factors in adolescent suicide. In R. A. King & A. Apter (Eds.) Suicide in children and adolescents (pp. 86-117). Cambridge: Cambridge University Press.

Broad, W. & Wade, N. (1985). Betrayers of the truth. London: Oxford University Press.

Brooten, B. J. (1996). Love between women. Chicago: The University of Chicago Press.

Brown, M. L. (2011). A queer thing happened to America. Concord, North Carolina: EqualTime Books.

Bruner, J. (1997). A narrative model of self-construction. In J. G. Snodgrass & R. L. Thompson (Eds.) The self across psychology, Self-recognition, self-awareness, and the self-concept. Annals of the New York Academy of Sciences (Vol 818). New York: The New York Academy of Sciences (pp. 145-162).

Bruno, O. (2001). The importance of being portly. In F. Crews (Ed.) Postmodern Pooh (65-79). New York: North Point Press.

Buber, M. (1958). I and Thou. New York: Charles Scribner's Sons.

Buchanan, A. Brock, D. W., Daniels, N., and Wikler, D. (2000). From chance to choice: Genetics and justice. New York: Cambridge University Press.

Budziszewki, J. (1997). Written on the heart. Downers Grove Illinois: Intervarsity Press.

Budziszewki, J. (1999). The revenge of conscience. Dallas, TX: Spence Publishing Company.

Budziszewki, J. (1997). What we can't not know. Dallas, TX: Spence Publishing Company.

Burr, C. (no date). The Only Question That Matters: Do People Choose Their Sexual Orientation? Downloaded May 5th 2008 from: http://www.logcabin.org/lef/choice_white_paper.html

Button, T. M. M., Stallings, M. C., Rhee, S. H., Corley, R. P., & Hewitt, J. K. (2011). The etiology of stability and change in religious values and religious attendance. Behavior Genetics, 41, 201-210.

Byne, W. & Parsons, B. (1993). Human sexual orientation, The biologic theories reappraised. Archives of General Psychiatry, 50, 228-239.

Byrnes, J. P. (2001). Cognitive development and learning in instructional contexts (2nd Edition). Boston: Allyn and Bacon.

Canadian Mental Health Association (1998). Trends in Canadian Suicide, SIEC Alert #30, June 1998. Downloaded July 7th 2009 from http://www.suicideinfo.ca/csp/assets/alert30.pdf

Cantor, J. M., Klassen, P. E., Dickey, R., Christensen, B. K., Kuban, M. E., Blak, T., Williams, N. S., & Blanchard, R. (2005). Handedness in pedophilia and hebehilia. Archives of Sexual Behavior, 34, 447-459.

Carlson, S. C. (2005). The gospel hoax. Waco, Texas: Baylor University Press.

Carr, N. (2010). The shallows, What the Internet is doing to our brains. New York: W. W. Norton & Company.

Casey, B. J., Somerville, L. H. Gotlibb, I. H., Ayduk, O., Franklin, N. T., Askrend, M. K., Jonides, J., Bermand, M. G., Wilson, N. L., Teslovich, T., Glover, G., Zayas, V., Mischel, M., &Yuichi Shodae,Y. (2011). Behavioral and neural correlates of delay of gratification 40 years later. Proceedings of the National Academy of Sciences, Early Edition. Downloaded from: http://www.sacklerinstitute.org/cornell/people/bj.casey/publications/

Ceci, S. J., Barnett, S. M., & Kanaya, T. (2003). Developing childhood proclivities into adult competencies: The overlooked multiplier effect. In R. J. Sternberg & E. L. Grigorenko (Ed's) The psychology of abilities, competencies, and expertise (70-92). Cambridge University Press.

Chomsky, N. (1957). Syntactic structures. The Hague: Mouton.

Chomsky, N. (1989). Necessary illusions, Thought control in democratic societies. Montreal: CBC Enterprises.

Chomsky, N. (2002). Media control. New York: Seven Stories Press.

Cohen, C. & Regan, T. (2001). The animal rights debate. New York: NY. Rowman & Littlefield Publishers, Inc.

Coxon, A. P. M. (2005). Understanding sexual diversity. In A. Lindzey & R. Kirker (Eds.). Gays and the future of Anglicanism. Winchester, UK: O Books (pp. 228-242).

Craig, W. L. (2008). Reasonable faith: Christian truth and apologetics (3rd ed). Wheaton, Illinois: Crossway.

Cravat, D. (2001). Twilight of the dogs. In F. Crews (Ed.) Postmodern Pooh (147-161). New York: North Point Press.

Cropley, D. H., Cropley, A. J., Kaufman, J. C., & Runco, M. A. (2010). The dark side of creativity. Cambridge: Cambridge University Press.

Daily Mail (2011). The little boy who started a sex change aged eight because he (and his lesbian parents) knew he always wanted to be a girl. Downloaded from: http://www.dailymail.co.uk/news/article-2043345/The-California-boy-11-undergoing-hormone-blocking-treatment.html

Damasio, A. R. (1994). Descartes' error. New York: Quill, An Imprint of Harper Collins.

Damasio, A. R. (1999). The feeling of what happens. San Diego: A Harvest Book, Harcourt Inc.

Damerose, E. & Vauclair, J. (2002). Posture and laterality in human and non-human primates: Asymmetries in maternal handling and the infant's early motor asymmetries. In L. J. Rogers & R. J. Andrew (Eds) Comparative vertebrate lateralization. Cambridge: Cambridge University Press, (pp. 306-362).

Davies, L. (2004). Education and conflict, Complexity and chaos. New York: NY. RoutledgeFalmer.

Davies, P. S. (2007). What kind of agent are we? A naturalistic framework for the study of human agency. In D. Ross, D. Spurrett, H. Kincaid, & G. L. Stephens (Eds.) Distributed

cognition and the will (pp. 39-60). Cambridge, Massachusetts: A Bradford Book, The MIT Press.

Davis, B. & Sumara, D. (2006). Complexity and education,Inquiries into learning, teaching, and research. New York: NY. Routledge.

Dawson, D. A. (1990). AIDS knowledge and attitudes for January-March 1990: Provisional data from the National Health Interview Survey, Advance Data from Vital and Health Statistics 193 (Hyattsville,Md.: National Center for Health Statistics, September 26, 1990, p.11).

Delacato, C. H. (1963). The diagnosis and treatment of speech and reading problems. Springfield, Illinois: Charles C Thomas, Publisher.

Delling, A. (1967). *Magos.* In G. Friedrich (Ed.), G. W. Bromiley (Translator and Editor) Theological dictionary of the New Testament, Vol IV. Grand Rapids, MI: Wm. B. Eerdmans Publishing Company (p.356-359).

Denny, K. (2009). Handedness and depression: Evidence from a large population survey. Laterality, 14, 246-255.

De Waal, F. (2006). Primates and philosophers: How morality evolved. Princeton: Princeton University Press.

De Waal, F. (2009). The age of empathy. Toronto: McClelland & Stewart Ltd.

De Waal, F. (2013). The Bonobo and the atheist, In search of humanism among the primates. New York: W. W. Norton and Company.

Dickens, W. T. & Flynn, J. R. (2001). Heritability estimates versus large environmental effects: The IQ paradox resolved. Psychological Review, 108, 346-360.

Doidge, N. (2007). The brain that changes itself. New York: Penguin Books.

Dörner, G. (1976). Hormones and brain differentiation. Amsterdam: Elsevier.

Dörner, G., Rohde, W., Stahl, F., Krell, L.. & Masius, W.G. (1975). A neuroendocrine predisposition for homosexuality in men. Archives of Sexual Behaviour, 4, 1-8.

Dörner, G., Geier, T., Ahrens, L., Krell, L., Münx, G., Sieler, H., Kittner, E., & Müller, H. (1980). Prenatal stress as possible aetiogenic factor of homosexuality in human males. Endokrinologia, 60, 297-301.

Dörner, G., Schenk, B., Schmiedel, B., & Ahrens, L. (1983). Stressful events in prenatal life of bi- and homosexual men. Experimental and Clinical Endocrinology, 81, 83-87.

Dreger, A. D. (2008). The controversy surrounding *The Man Who Would Be Queen*: A case history of the politics of science, identity, and sex in the Internet Age. Archives of Sexual Behavior, 37, 366-421.

Dweck, C. S. (2002). Beliefs that mark smart people dumb. In R. J. Sternberg (Ed.) Why smart people can be so stupid. New Haven: Yale University Press (pages 24-41).

Dweck, C. S. (2007). The secret to raising smart kids. Scientific American Mind, 18(6), 36-43.

Eating Disorders, (2007). Downloaded November 23rd from http://www.drugdigest.org/DD/PrintablePages/HealthConditions/1,20041,550347,00.html

Ellul, J. (1973). Propaganda. New York: Vintage Books.

Epstein, S. (1992). Gay politics, ethnic identity: The limits of social constructionism. In E. Stein (Ed.) Forms of desire (p. 239-293). New York: Routledge.

Ernulf, K. E. & Innala, S. M. (1989). Biological explanation, psychological explanation, and tolerance of homosexuals: A cross-national analysis of beliefs and attitudes. Psychological Reports, 65, 1003-1010.

Farrelly, C. (2004). The genetic difference principle. The American Journal of Bioethics, 4(2), W21-W28. Downloaded May, 5, 2007 from http://politicalscience.uwaterloo.ca/Farrelly/AJOB%20PDF%20paper.pdf

Fergusson, D. M., Horwood, L. J., & Beautrais, A. L. (1999). Is sexual orientation related to mental health problems and suicidality in young people? Archives of General Psychiatry, 56, 876-880.

Festinger, L. (1957). A theory of cognitive dissonance. New York: Harper & Row.

Festinger, L., Riecken, H. W., & Schachter, S. (1956). When prophecy fails: A social and psychological study of a modern group that predicted the end of the world. New York: Harper Torchbooks.

Fitti, J. E. & Cynamon, M. (1990). AIDS knowledge and attitudes for April-June 1990: Provisional data from the National Health Interview Survey, Advance Data from Vital and Health Statistics 195 (Hyattsville, Md.: National Center for Health Statistics, September 26, 1990, p.11).

Francis, R. (2001). Gene/Meme Covariation in Ashdown Forest: Pooh and the consilience of knowledge. In F. Crews (Ed.) Postmodern Pooh (97-115). New York: North Point Press.

Frederick, S. (2002). Automated choice heuristics. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.). Heuristics and biases: The psychology of intuitive judgment (chapter 30). Cambridge: Cambridge University Press.

Freedman, J. L. & Fraser, S. C. (1966). Compliance without pressure: The foot-in-the-door technique. Journal of Personality and Social Psychology, 4, 195-203.

Friedman, R. C. (1999). Homosexuality, psychopathology, and suicidality.. Archives of General Psychiatry, 56, 887-888.

Friedman, M. (Ed) (1965). Martin Buber, The Knowledge of Man. New York: Harper and Row, Publishers.

Gardner, R.C., & Tremblay, P.F. (1994a). On motivation, research agendas, and theoretical frameworks. The Modern Language Journal, 78, 359-368.

Gardner, R.C., & Tremblay, P.F. (1994b). On motivation: Measurement and conceptual considerations. The Modern Language Journal, 78, 524-527.

Garwood, C. (2007). Flat earth. London: Macmillan.

Gazzaniga, M. S. (1985). The social brain. New York: Basic Books Inc.

Gentner D. & Holyoak, K. J. (1997). Reasoning and learning by analogy. American Psychologist, 52, 32-34.

Gentner, D. & Markman, A. B. (1997). Structure mapping in analogy and similarity. American Psychologist, 52, 45-56.

George, R. P. (2001). The clash of orthodoxies. Wilmington, Delaware: ISI Books.

Geschwind, N. & Behan, P. O. (1984). "Laterality, hormones, and immunity." In N. Geschwind & A. M. Galaburda (Eds.) Cerebral dominance (p 211-224). Cambridge: Harvard University Press.

Geschwind, N. & Galaburda, A. M. (Eds.) (1984). Cerebral dominance. Cambridge: Harvard University Press.[

Gibson, P. (1989). Gay male and lesbian suicide. Downloaded Oct 2007 from http://lambda.org/youth_suicide.htm

Giesler, J. B. (2005). An examination of smoking-related behaviours and self-perceptions, and the role of school connectedness in predicting cigarette use among students at an Ontario university. Master of Science Thesis, University of Waterloo.

Giles, J. A. (1840). Lexicon of the Greek Language. London: Longman, Orme, Brown, Green and Longmans.

Gilovich, T. & Griffin, D (2002). Introduction—Heuristics and biases: Then and now. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.). Heuristics and biases: The psychology of intuitive judgment (Introduction). Cambridge: Cambridge University Press.

Gilovich, T., Griffin, D., & Kahneman, D. (Eds.) (2002). Heuristics and biases: The psychology of intuitive judgment. Cambridge: Cambridge University Press.

Gladue, B. A. (1988). Hormones in relationship to homosexual/bisexual/heterosexual gender orientation. In J. M. A. Sitsen (Ed.) Handbook of sexology: The pharmacology and endocrinology of sexual function (pp 388-409). NY: Elsevier.

Gladwell, M. (2011). Outliers. New York: Black Bay Books, Little, Brown and Company.

Glatze, M. (2007). How a 'gay rights' leader became straight. WorldNetDaily. Downloaded July 4th 2007 from: http://www.worldnetdaily.com/news/article.asp?ARTICLE_ID=56487

Goldberg, A. (2008). Light in the closet. Beverly Hills, California: Red Heifer Press.

Goldberg, S. (1991). When wish replaces thought. Buffalo, NY: Prometheus Books.

Gooren, L. J. G. (1988). An appraisal of endocrine theories of homosexuality and gender dysphoria. In J. M. A. Sitsen (Ed.) Handbook of sexology: The pharmacology and endocrinology of sexual function (pp 410-424). NY: Elsevier.

Gould. S. J. (1981). The mismeasure of man. New York: W. W. Norton & Company.

Gould, S. J. (1999). Rocks of ages. New York: Ballantine Books.

Gould, S. J. (2003). The hedgehog, the fox, and the magister's pox: Mending the gap between science and the humanities. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Gould, M. S., Shaffer, D. & Greenberg, T. (2003). The epidemiology of youth suicide. In King, R. A. & Apter, A. (Eds.) Suicide in children and adolescents (pp 1-40). Cambridge: Cambridge University Press.

Graber, J. A. & Archibald, A. B. (2001). Psychosocial change at puberty and beyond: Understanding adolescent sexuality and sexual orientation. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp. 3-26). New York: Oxford University Press.

Gratzer, W. (2000). The undergrowth of science. Oxford: Oxford University Press.

Greenberg, D. F. (1990). The construction of homosexuality. Chicago, IL: University of Chicago Press.

Gross, J. T. (2006) Fear, Anti-semitism in Poland after Auschwitz. New York: Random House Trade Paperbacks.

Haidt, J. (2012). The righteous mind: Why good people are divided by politics and religion. New York: Pantheon Books.

Hamer, D. H., Hu, S., Magnuson, V. L., Hu, N., Pattatucci, A. M. L. (1993). A linkage between DNA markers on the X chromosome and male sexual orientation. Science, 261, 321-327.

Hamer, D. & Copeland, P. (1994). The science of desire. New York: Simon & Schuster.

Hamer, D. & Copeland, P. (1999). Living with our genes. New York: Anchor Books.

Han, C., McGue, M. K., & Iacono, W. G. (1999). Lifetime tobacco, alcohol and other substance use in adolescent Minnesota twins: Univariate and multivariate behavioral genetic analyses. Addiction, 94, 981-993.

Harris, S. (2010). The moral landscape. New York: Free Press.

Hartley. D. E. (2005). 2 Corinthians 4:4: A case for Yahweh as the 'God of this age.' The 57th Annual Meeting of the Evangelical Theological Society, November 16-18, 2005. Valley Forge, PA.

Haskell, T. (2000). The relationship between sexual risk behaviour in adolescent females and involvement in school extracurricular activities and sport. A Major Paper submitted towards the M.Ed. Degree. The University of Windsor.

Haught, J. F. (2006). Is nature enough? Cambridge: Cambridge University Press.

Haught, J. (2009). Theology and evolution: How much can biology explain? In J. Schloss and M. J. Murray (Eds.) The believing primate: Scientific, philosophical, and theological reflections on the origin of religion. Oxford: Oxford University Press (p. 246-264).

Haus, G. (1997). Exegetical issues in the use of the Bible to justify the acceptance of homosexual practice. Christian Scholar's Review, 26, 386-412.

Hays, R. B. (1986). Relations natural and unnatural: A response to John Boswell's exegesis of Romans 1. Journal of Religious Ethics, 14, 184-215.

Healthy Living (2004-05). Summary of results of the 2004-05 Youth Smoking Survey. Downloaded May 12th 2007 from: http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/research-recherche/stat/survey-sondage/2004-2005/result_e.html

Hearnshaw, L. S. (1979). Cyril Burt, Psychologist. London: Hodder & Stoughton.

Helminiak, D. A. (2000). What the Bible really says about homosexuality. New Mexico: Alamo Square Press.

Helminiak, D. A. (no date). A rebuttal to "A Reformed response to Daniel Helminiak's gay theology. (Downloaded from http://unjobs.org/authors/daniel-a.-helminiak)

Herrell, R., Goldberg, J., True, W. R., Ramakrishnan, V., Lyons, M., Eisen, S., & Tsuang, M. T. (1999). Sexual orientation and suicidality. Archives of General Psychiatry, 56, 867-874.

Hershberger, S. L. (2001). Biological factors in the development of sexual orientation. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp27-51). New York: Oxford University Press.

Hirst, W., Manier, D., & Apetroaia, I. (1997). The social construction of the remembered self: Family recounting. In J. G. Snodgrass & R. L. Thompson (Eds.) The self across psychology, Self-recognition, self-awareness, and the self-concept. Annals of the New York Academy of Sciences (Vol 818). New York: The New York Academy of Sciences (pp. 163-188).

Hitchens, P. (2010. The rage against God. Grand Rapids, Michigan: Zondervan.

Hitti, M. (2005). CDC: Smoking rates continue to drop. Downloaded April 6th from: http://www.foxnews.com/printer_friendly_story/0,3566,157811,00.html

Holland, A. J., Sicotte, N., & Treasure, J. (1988). Anorexia nervosa: Evidence for a genetic basis. Journal of Psychosomatic Research, 32, 561-571.

Holyoak, K. J. & Thagard, P. (1997). The analogical mind. American Psychologist, 52, 35-44.

Horgan, J. (1993). Eugenics revisited. Scientific American (June), 122-131.

Hubbard, R. & Wald, E. (1999). Exploding the gene myth. Boston. Beacon Press.

Hurst, L. (2007). Hunting the gay gene. Toronto Daily Star, Saturday, June 23rd 2007, page ID3.

Hutchinson, A. C. (2011). Is eating people wrong? Cambridge: Cambridge University Press.

Irvine, J. M. (2001). Educational reform and sexual identity: Conflicts and challenges. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp251-266). New York: Oxford University Press.

Is Change Really Possible? Downloaded May 12th 2007 from: http://www.peoplecanchange.com/Is_Change_Possible.htm

Isherwood, L. (2005). Scripture for liberation. In A. Lindzey & R. Kirker (Eds.). Gays and the future of Anglicanism. Winchester, UK: O Books (pp. 49-59).

James, W. (1891/1952). The principles of psychology. Chicago: Encyclopaedia Britannica, Inc. William Benton, Publisher.

Jennings, T. Jr. (2003). The man Jesus loved: Homoerotic narrative from the New Testament. Cleveland: Pilgrim Press.

Jonassen, D.H. (1991a). Evaluating constructivistic learning. *Educational Technology*, *28*(11), 13-16.

Jonassen, D. H. (1991b). Objectivism versus constructivism: Do we need a new philosophical paradigm? Educational *Technology Research and Development*, *39*(3), 5-14.

Jonassen, D. H. (1999). Designing constructivist learning environments. In C. M. Reigeluth (Ed). *Instructional design theories and models: A new paradigm of instructional theory* (Vol. 2, pp. 215-239). New Jersey: Lawrence Erlbaum Associates.

Jones, S. L. & Yarhouse, M. A. (2000). Homosexuality, The use of scientific research in the Church's moral debate. Downers Grove, Illinois: InterVarsity Press.

Jones, S. L. & Yarhouse, M. A. (2007). Ex-gays? A longitudinal study of religiously mediated change in sexual orientation.. Downers Grove, Illinois: InterVarsity Press.

Jones, S. L. & Yarhouse, M. A. (2011). A longitudinal study of attempted religiously mediated sexual orientation change. Journal of Sex & Marital Therapy, 37, 404-427.

Kagan, J. (2010). The temperamental thread. New York: Dana Press.

Kahneman, D. (2003). A perspective on judgment and choice. American Psychologist, 58, 697-720.

Kahneman, D. (2011). Thinking, fast and slow. Doubleday Canada.

Kahneman, D. & Miller, D. T. (2002). Norm theory: Comparing reality to its alternatives. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.). Heuristics and biases: The psychology of intuitive judgment. Cambridge: Cambridge University Press (Kindle Edition).

Kallman, F. J. (1952). Comparative twin study on the genetic aspects of male homosexuality. Journal of Nervous and Mental Disease, 115, 137-159.

Kane, R. (2002). Some neglected pathways in the free will labyrinth. In R. H. Kane (Ed.) The Oxford Handbook of Free Will (pp 406-440). New York: Oxford University Press Inc.

Kaprio, J. & Harris, J. R. (2008). Twin studies. In K. Clément & T. I. A. Sørensen (Eds.) Obesity Genomics and Postgenomics (pp 39-47). New York: Informa.

Kashdan, T. (2009). Curious? New York: William Morrow/Harper-Collins Publishers.

Katsoulis, M. (2009) Literary hoaxes. New York: Skyhorse Publishing.

Kavanaugh, P. (1992). The spiritual lives of great composers. Nashville: Sparrow Press.

Kendler, K. S., MacLean, C., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1991). The genetic epidemiology of bulimia nervosa. American Journal of Psychiatry, 148, 1627-1637.

Kihlstrom, J. F. & Klein, S. B. (1997). Self-knowledge and self-awareness. In J. G. Snodgrass & R. L. Thompson (Eds.) The self across psychology, Self-recognition, self-awareness, and the self-concept. Annals of the New York Academy of Sciences (Vol 818). New York: The New York Academy of Sciences (pp. 5-18).

King, M. & McDonald, E. (1992). Homosexuals who are twins. British Journal of Psychiatry, 160, 407-409.

Kinsey, A. C. Pomeroy, W. B. & Martin, C. E. (1948). Sexual behavior in the human male. Philadelphia: W. B. Saunders Company.

Kinsey, A. C. Pomeroy, W. B., Martin, C. E. & Gebhard (1953). Sexual behavior in the human female. Philadelphia: W. B. Saunders Company.

Klar, A. J. S. (2003). Human handedness and scalp hair-whorl direction develop from a common genetic mechanism. Genetics, 165, 269-276.

Klump, K. L., Miller, K. B., Keel, P. K., McGue, M., & Iacono, W. G. (2001). Genetic and environmental influences on anorexia nervosa syndromes in a population-based twin sample. Psychological Medicine, 31, 737-740.

Kozak, M. N., Marsh, A. A., & Wegner, D. M. (2006). What do I think you are doing? Action identification and mind attribution. Journal of Personality and Social Psychology, 90, 543-555.

Kugle, Scott Siraj al-Haqq (2010). Homosexuality in Islam. Oxford, England: Oneworld Publications.

Kuhn, T. (1970). The structure of scientific revolutions (2nd Ed.). Chicago: The University of Chicago Press.

Kuo, Wen-Hung, Gallo, J. J., & Tien, A. Y. (2001). Incidence of suicide ideation and attempts in adults: the 13-year follow-up of a community sample in Baltimore Maryland. Psychological Medicine, 31, 1181-1191.

LaBarbera, P. (no date). The gay youth suicide myth. Downloaded Dec 2003 from: http://www.clm.org/jhs/labarbera.html

Lakatos, I. (1970). Falsification and the methodology of scientific research programmes. In I. Lakatos & A. Musgrave (Eds.) Criticism and the growth of knowledge. Cambridge: Cambridge University Press(pp. 91-196).

Långström, N., Rahman, Q., Carlström, E., & Lichtenstein, P. (2010). Genetic and environmental effects on same-sex sexual behavior: A population study of twins in Sweden. Archives of Sexual Behavior, 39, 75-80.

Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (1994). The social organization of sexuality. Chicago: The University of Chicago Press.

Lagay, F. (no date). Genetic differences: Unfair or only unfortunate? Downloaded May 5, 2007 from http://www.ama-assn.org/ama/pub/category/6804.html

Larsen, R. J. & Prizmic, Z. (2004). Affect regulation**.** In R. F. Baumeister & K. D. Vohs, (Eds.) (2004). Handbook of self-regulation. New York: The Guilford Press (pp. 40-61).

Lawton, G. (2007). Mind tricks: Explore your brain. New Scientist, 195 (September Issue), 34-41.

LeDoux, J. (2002). Synaptic self. New York: Penguin Books.

Leistikow, B. (2003). Commentary: Questionable premises, overadjustment, and a smoking/suicide association in younger adult men, International Journal of Epidemiology, 32, 1005-1006.

Lengen, C., Regard, M., Joller, H., Landis, T., & Lalive, P. (2009). Anomalous brain dominance and the immune system: Do left-handers have specific immunological patterns? Brain and Cognition, 69, 188-193.

Levant, E. (2009). Shake Down. Toronto: McClelland & Stewart Ltd.

LeVay, S. (1991). A difference in hypothalamic structure between heterosexual and homosexual men. Science, 253, 1034-1037.

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1996). Adolescent suicidal ideation and attempts: Prevalence, risk factors, and clinical implications. Clinical Psychology: Science and Practice, 3(1), 25-46.

Lewis, C. S. (1960). On obstinacy in belief. In C. S. Lewis, The world's last night and other essays (pp. 13-30). New York: Harcourt, Brace and Company.

Lewis, M. (1997). The self in self-conscious emotions. In J. G. Snodgrass & R. L. Thompson (Eds.) The self across psychology, Self-recognition, self-awareness, and the self-concept. Annals of the New York Academy of Sciences (Vol 818). New York: The New York Academy of Sciences (pp. 119-142).

Libet, B. (1985). Unconscious cerebral initiative and the role of conscious will in voluntary action. Behavioral and Brain Sciences, 8, 529-566.

Libet, B. (2002). Do we have free will? In R. H. Kane (Ed.) The Oxford Handbook of Free Will (pp 551-564). New York: Oxford University Press Inc.

Liddell, H. G. & Scott (1889/1972). An intermediate Greek-English lexicon. London: Oxford University Press.

Lidz, T. (1993). Reply to "A genetic study of male sexual orientation." Archives of General Psychiatry, 50, 240.

Lindzey, A. (1994). Animal theology. Urbana: University of Illinois Press.

Lindzey, A. (Ed.) (2009). The link between animal abuse and human violence. Brighton: Sussex Academic Press

Lips, H. M. (2001). Sex & gender. Mountain View CA: Mayfield Publishing Company.

Loftus, E. F. & Ketcham, K. (1994). The Myth of Repressed Memory. New York: St. Martin's Press.

Loftus, E. F. (2003). Make-believe memories. American Psychologist, 58, 864-873.

Luther, M. (no date). The Bondage of the Will. Downloaded from: http://www.truecovenanter.com/truelutheran/luther_bow.html

Madden, P. A. F., Pedersen, N. L., Kaprio, J., Koskenvuo, M. J., & Martin, N. G. (2004). The epidemiology and genetics of smoking initiation and persistence: Crosscultural comparisons of twin study results. Twin Research, 7, 82-97.

Maddox, J. (1991). Is homosexuality hard-wired? Nature, 353, 13.

Malatesta, D. (2001). The courage to squeal. In F. Crews (Ed.) Postmodern Pooh (117-131). New York: North Point Press.

Malone, K. M., Waternaux, C., Haas, G. L., Cooper, T. B., Li, S., & Mann, J. J. (2003). Cigarette smoking, suicidal behavior, and serotonin function in major psychiatric disorders. American Journal of Psychiatry, 160, 773-779.

Manji, I. (2003). The trouble with Islam today. Toronto: Vintage Canada.

Martin, N. G., Eaves, L. J., Heath, A. C., Jardine, R., Feingold, L.M., & Eysenck. H. J. (1986). Transmission of social attitudes. Proceedings of the National Academy of Sciences, USA, 83, 4364-4368.

Maslow, A. (1970). Motivation and personality (2nd ed). New York: Harper and Row.

Masters, W. H. & Johnson, V. E. (1979). Homosexuality in perspective. Boston: Little, Brown & Company).

Maxmen, J. S., Ward, N. G., & Kilgus, M. (2009). Essential psychopathology and its treatment (3rd edition). New York: W. W. Norton & Company.

McCauley, R. N. (2011). Why religion is natural and science is not. Oxford: Oxford University Press.

McIntyre, M. (1997). Gay texts of terror? Christian Scholar's Review, 26, 413-434.

McManus, C. (2002). Right hand, Left hand. London: Phoenix.

Mele, A. R. (2001). Autonomous agents. Oxford: Oxford University Press.

Mele, A. R. (2009). Effective intentions. Oxford: Oxford University Press.

Mele, A. R. (2010). Conscious deciding and the science of free will. In R. F. Baumeister, A, R. Mele, and K. D. Vohs (Eds.) Free will and consciousness (pp. 43-65). Oxford: Oxford University Press.

Metcalfe, J. & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. Psychological Review, 106, 3-19.

Meyer-Bahlburg, H. F. L., Ehrhardt, A. A., Rosen, L. R., Gruen, R. S., Veridiano, N. P., Vann, F. H., Neuwalder, H, F. (1995). Prenatal estrogens and the development of homosexual orientation. Developmental Psychology, 31, 12-21.

Miletski, H. (2005a). Is zoophilia a sexual orientation? A Study. In A. M. Beetz and A. L. Podberscek (Eds.) (2005). Beastiality and zoophilia (pp 82-97). West Lafayette, Indiana: Purdue University Press.

Milgram, S. (1974). Obedience to authority. New York: Perennial Classics.

Miletski, H. (2005b). A history of beastiality. In A. M. Beetz and A. L. Podberscek (Eds.) (2005). Beastiality and zoophilia (pp1-22). West Lafayette, Indiana: Purdue University Press.

Milgram, S. (1974). Obedience to authority. New York: Harper and Row.

Mischel, W. & Ayduk, O. (2004). Willpower in a cognitive-affective processing system. In R. F. Baumeister, & K. D. Vohs (Eds.) Handbook of self-regulation (p. 99-129). New York: The Guilford Press.

Moore. A. (2007). 'Gay'-rights leader quits homosexuality. WorldNetDaily. Downloaded July 4th, 2007 from: http://www.worldnetdaily.com/news/article.asp?ARTICLE_ID=56481

Moore, B. N. & Parker, R. (2001). Critical thinking (6th Edition). Mountainview, California: Mayfield Publishing Company.

Moreland, J.P. & Rae, S. B. (2000). Body & soul. Downers Grove, Illinois: InterVarsity Press.

Moriya, F., Hashimoto, Y., & Furumiya, J. (2007). Nicotine and continine levels in body fluids of smokers who committed suicide. Forensic Science International, 168, 102-105.

Morris, J. F., Waldo,, C. R., & Rothblum, E. D. (2001). A model of predictors and outcomes of Outness among lesbian and bisexual women. American Journal of Orthopsychiatry, 71, 61-71.

Moser. P. K. (2008). The elusive God: Reorienting religious epistemology. Cambridge: Cambridge University Press.

Murray, M. J. (2009). Scientific explanations of religion and the justification of religious belief. In J. Schloss & M. J. Murray (Eds.) The believing primate: Scientific, philosophical, and theological reflections on the origin of religion. Oxford: Oxford University Press (p. 168-178).

Murray, M. J. & Goldberg, A. (2009). Evolutionary accounts of religion: Explaining and explaining away. In J. Schloss & M. J. Murray (Eds.) The believing primate: Scientific, philosophical, and theological reflections on the origin of religion. Oxford: Oxford University Press (p. 179-199).

Nedelsky, J. & Hutchinson, R. (2008). Clashes of principles and the possibility of dialogue: A case study of same-sex marriage in the United Church of Canada. In R. Mood (Ed.) Law and religious pluralism in Canada. Vancouver, British Columbia: UBC Press (pp. 41-64).

Nelson, K. (1997). Finding one's self in time. In J. G. Snodgrass & R. L. Thompson (Eds.) The self across psychology, Self-recognition, self-awareness, and the self-concept. Annals of the New York Academy of Sciences (Vol 818). New York: The New York Academy of Sciences (pp. 103-118).

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. Review of General Psychology, 2, 175-220.

NIMH (no date(a)). Reporting on suicide: Recommendations for the media. Downloaded October 9, 2007 from http://www.nimh.nih.gov/health/topics/suicide-prevention/reporting-on-suicide-recommendations-for-the-media.shtml

NIMH (no date (b)). Suicide in the U.S.: Statistics and prevention. Downloaded October 9, 2007 from http://www.nimh.nih.gov/health/publications/suicide-in-the-us-statistics-and-prevention.shtml

NIMH (no date(c)). Indigenous suicide prevention research and programs in Canada and the United States: Setting a collaborative agenda. Downloaded October 9, 2007 from http://www.nimh.nih.gov/research-funding/scientific-meetings/2006/indigenous-suicide-prevention-research-and-programs-in-canada-and-the-united-states-setting-a-collaborative-agenda/summary.shtml

Nicolosi, J. & Nicolosi, L. A. (2002). A parent's guide to preventing homosexuality. Downers Grove Il: Intervarsity Press.

Northwest Territories Health and Social Services (2001). NWT Tobacco fact sheet. Downloaded May 5th 2007 from: http://www.hlthss.gov.nt.ca/pdf/brochures_and_fact_sheets/tobacco/2001/english/nwt_tobacco_fact_sheet.pdf

O'Connor, T. (2002). Libertarian views: Dualist and agent-causal theories. In R. H. Kane (Ed.) The Oxford Handbook of Free Will (pp 337-355). New York: Oxford University Press Inc.

O'Connor, T. (2005). Freedom with a human face. Midwest Studies in Philosophy 29 (1):207-227. Downloaded from: http://philpapers.org/rec/OCOFWA

Oldfield, R.C. (1971). The assessment and analysis of handedness: The Edinburgh inventory. Neuropsychologia, 9, 97-113.

Olliff, D. K. & Hodges, D. H. (no date). A Reformed response to Daniel Helminiak's gay theology. (Downloaded from http://www.reformed.org)

Olliff, D. K. & Hodges, D. H. (no date). A further look at pro-homosexual theology. (Downloaded from http://www.reformed.org)

Orford, J. (2001). Addiction as excessive appetite. Addiction, 96, 15-31.

Oepke, A. (1967). *Pais* In G. Friedrich (Ed.), G. W. Bromiley (Translator and Editor) Theological dictionary of the New Testament, Vol V. Grand Rapids, MI: Wm. B. Eerdmans Publishing Company (p.636-654).

O'Sullivan, E. (1999). Transformative learning: Educational vision for the 21st Century. Toronto: The University of Toronto Press.

Perkins, D. N. (2002). The engine of folly. In R. J. Sternberg (Ed.) Why smart people can be so stupid. New Haven: Yale University Press (pages 64-85).

Percy, M. (2005). On being stretched. In A. Lindzey & R. Kirker (Eds.). Gays and the future of Anglicanism. Winchester, UK: O Books (pp. 213-227).

Pesman, (1991, November). Love and sex in the '90s: Our national survey. Seventeen, 63-68.

Piattelli-Palmarini, M. (1994). Inevitable illusions. New York: John Wiley & Sons, Inc.

Piskur, J. & Degelman, D. (1992). Effect of reading a summary of research about biological bases of homosexual orientation on attitudes toward homosexuals. Psychological Reports, 71, 1219-1225.

Plantinga, A. (1993a). Warrant: The current debate. New York: Oxford University Press.

Plantinga, A. (1993b). Warrant and proper function. New York: Oxford University Press.

Plantinga, A. (2009). Scientific Games scientists play. In J. Schloss and M. J. Murray (Eds.) The believing primate: Scientific, philosophical, and theological reflections on the origin of religion. Oxford: Oxford University Press (p. 139-167).

Plomin, R. (1989). Environment and genes, Determinants of behavior. American Psychologist, 44 (2), 105-111.

Popper, K. R. (1968). The logic of scientific discovery. New York: Harper Torchbook, Harper & Row Publishers, Inc.

Popper, K. R. (1965). Conjectures and refutations: The growth of scientific knowledge. New York: Harper Torchbook, Harper & Row Publishers, Inc.

Prager, D. (1993). Judaism's Sexual Revolution: Why Judaism Rejected Homosexuality. Downloaded August 2009 from: http://www.catholiceducation.org/articles/printarticle.html?id=1003

Risch, N., Squires-Wheeler, E., & Keats, B. J. B. (1993). Science, 262, 2063-2065.

Robertson, L. & Monsen, J. (2001). Issues in the development of a gay or lesbian identity: Practice implications for educational psychologists. Educational and Child Psychology, 18, 13-30.

Rahman, Q. & Silber, K. (2000). Sexual orientation and the sleep-wake cycle: A preliminary investigation. Archives of Sexual Behavior, 29, 127-134.

Regan, T. (2004). The case for animal rights. Berkley:CA. University of California Press.

Reitan, E. (2007). Love the sinner, hate the sin? Free Inquiry, 27(3), 42-43.

Remafedi, G. (1999a). Suicide and sexual orientation. Archives of General Psychiatry, 56, 885-886.

Remafedi, G. (1999b). Sexual orientation and youth suicide. JAMA, 282, 1291-1292.

Remafedi, G., Farrow, J. A., & Deisher, R. W. (1991). Risk factors for attempted suicide in gay and bisexual youth. Pediatrics, 87, 869-875.

Remafedi, G., Resnick, M., Blum, R., & Harris, L. (1992). Demography of sexual orientation in adolescents. Pediatrics, 89, 714-721.

Rice, G., Anderson, C., Risch, N., & Ebers, G. (1999). Male homosexuality: Absence of linkage to microsatellite markers at Xq28. Science, 284, 665-667.

Rind, B. Tromovitch, P., & Bausermann, R. (1998). A meta-analytic examination of assumed properties of child sexual abuse using college samples. Psychological Bulletin, 124, 22-53.

Rivers, I. & D'Augelli, A. R. (2001). The victimization of lesbian, gay and bisexual youths. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp199-223). New York: Oxford University Press.

Rollin, B. E. (2006). Animal rights and human morality. Amherst: NY. Prometheus Books.

Rosenberg, A. (2011). The atheist's guide to reality, Enjoying life without illusions. New York: W. W. Norton & Company.

Rotherham-Borus, M. J. & Langabeer, K. A. (2001). Developmental trajectories of gay, lesbian and bisexual youths. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp 97-128). New York: Oxford University Press.

Rowe, D. C. (1983). Biogenetic models of self-reported delinquent behavior: A twin study. Behavior Genetics, 13, 473-489.

Russell C. J. & Keel, P. K. (2002). Homosexuality as a specific risk factor for eating disorders in men. Journal of Eating Disorders, 31, 300-306.

Russell, J. B. (1991). Inventing the flat earth, Columbus and modern historians. Westport, CT: Praeger.

Rutter, M. (2002). The interplay of nature, nurture, and developmental influences. Archives of General Psychiatry, 59, 996-1000.

Ryan, C. (2001). Counseling lesbian, gay, and bisexual youths. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp 224-250). New York: Oxford University Press.

Sanchez, R. (1998). Black teen suicide rate increases dramatically. Washington Post, March 20th. Downloaded October 9th, 2007 from http://members.aol.com/digasa/stats21.htm

Satinover. J. (1996). Homosexuality and the politics of truth. Grand Rapids MI: Baker Books.

Satz, P. (1972). Pathological left-handedness: An explanatory model. Cortex, 8, 121-135.

Savage-Rumbaugh, S., Shanker, S. G., & Taylor, T. J. (1998). Apes, language, and the human mind. Oxford: Oxford university Press.

Savin-Williams, R. (2001). Suicide attempts among sexual-minority youths: Population and measurement issues. *Journal of Consulting and Clinical Psychology, 69*, 983-991.

Schmeichel, B. J. & Baumeister, R. F. (2004). Self-regulatory strength. In R. F. Baumeister & K. D. Vohs (Eds.) Handbook of self-regulation. New York: The Guilford Press (pages 84-98).

Schmidt, T. E. (1995). Straight and narrow? Compassion and clarity in the homosexuality debate. Downers Grove, Illinois: InterVarsity Press.

Schneider, M. S. (2001). Toward a reconceptualization of the coming-out process for adolescent females. In A. R. D'Augelli, & C. J. Patterson (2001). Lesbian, gay, and bisexual identities and youth (pp. 71-96). New York: Oxford University Press.

Schumann, J. H. (2004). The neurobiology of aptitude. In J. H. Schumann, S. E. Crowell, N. E. Jones, N. Lee, S. A. Schuchert, & L. A. Wood (Eds.). The neurobiology of learning (p. 7-21). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Schwartz, J. M. & Begley, S. (2002). The mind & the brain. New York: Harper Perennial.

Schwartz, J. M., Stapp, H. P., & Beauregard, M. (2004). The volitional influence of the mind on the brain, with special reference to emotional self-regulation. In M. Beauregard (Ed.) Consciousness, emotional self-regulation and brain. Amsterdam: John Benjamins Publishing Company (pages 195-238).

Scully, M. (2002). Dominion, The power of man, the suffering of animals, and the call to mercy. New York. St. Martin's Griffin.

Shafir, E. & LeBoeuf, R. A. (2002). Rationality. Annual Review of Psychology, 53, 491-517.

Sharp, C. J. (2005). Beyond prooftexting. In A. Lindzey & R. Kirker (Eds.). Gays and the future of Anglicanism. Winchester, UK: O Books (pp. 30.48).

Sheisha, S. (1999). Selections from current literature: Smoking and depression. Family Practice, 16, 202-205.

Shenk, D. (2010). The genius in all of us. New York: Anchor Books.

Shermer, M. (2004). The science of good and evil. New York: Times Books.

Shermer, M. (2011). The believing brain. New York: Times Books, Henry Holt and Company.

Singer, P. (2001). Heavy petting. Downloaded January 2005 from http://www.nerve.com/opinions/singer/heavypetting/main.asp

Singer, P. (1993). Practical Ethics. Cambridge University Press.

Singer, P. (Ed.) (2006). In defense of animals. Malden: MA. Blackwell Publishing.

Skog, O. (2000). Addicts' choice. Addiction, 95, 1309-1314.

Sloman, S. A. (2002). Two systems of reasoning. In T. Gilovich, D. Griffin, & D. Kahneman, (Eds.). Heuristics and biases: The psychology of intuitive judgment. Cambridge: Cambridge University Press (Kindle Edition).

Smilansky, S. (2002). Free will, fundamental dualism, and the centrality of illusion. In R. H. Kane (Ed.) The Oxford Handbook of Free Will (pp 480-505). New York: Oxford University Press Inc.

Smith, W. J. (2010). A rat is a pig is a dog is a boy. New York: NY. Encounter Books.

Snowdon, C. (2009). Velvet glove, iron fist. Great Britain: Little Dice.

Socarides, C. W. (1992). Sexual politics and scientific logic: The issue of homosexuality. The Journal of Psychohistory, 19, 307-329.

Solms, M. (2006). Freud returns. Scientific American Mind, 17(2), 28-34.

Solomon, R. L. & Corbit, J. D. (1973). An opponent-process theory of motivation: II. Cigarette addiction. Journal of Abnormal Psychology, 81, 158-171.

Solomon, R. L. & Corbit, J. D. (1974). An opponent-process theory of motivation: I. Temporal dynamics of affect. Psychological Review, 81, 119-145.

Somerville. M. (2009). Facing up to the dangers of the intolerant university: Bird on an ethics wire. Academic Matters, (May), pp. 3-7. Ontario Confederation of University Faculty Associations.

Sorenson, J. (2009). Ape. London, UK: Reaktion Books Ltd.

Sørensen, T. I. A., Rasmussen, F., & Magnusson, P. K. E. (2008). Adoption studies. In K. Clement & T. I. A. Sørensen (Eds.) Obesity, Genomics and Postgenomics. New York: Informa (pages 29-38).

Sowell, T. (1999). The quest for cosmic justice. New York: The Free Press.

Spence D. (1982). Narrative truth and historical truth. New York: W. W. Norton & Company, Inc.

Sperry, R. W. (1990). Forebrain commissurotomy and conscious awareness. In C. Trevarthen (Ed.) Brain circuits and functions of the mind. Cambridge: Cambridge University Press (pages 371-388).

Spitzer, R. L. (2001). 200 subjects who claim to have changed their sexual orientation from homosexual to heterosexual. Presentation at the American Psychiatric Association Annual Convention. New Orleans, May 9, 2001. Downloaded from http://www.newdirection.ca/research/spitzer.htm

Spitzer, R. L. (2003). Can some gay men and lesbians change their sexual orientation? 200 participants reporting a change from homosexual to heterosexual orientation. Archives of Sexual Behavior, 32, 403-417.

Springer, S. P. & Deutsch, G. (1989). Left brain, right brain (3rd edition). New York: W. H. Freeman and Company.

Stacey, R. D., Griffin, D. & Shaw, P. (2000). Complexity and management. New York: NY. Routledge.

Statistics Canada (no date). Suicides and suicide rate, by sex and by age group. Downloaded July 7th 2009 from http://www40.statcan.ca/l01/cst01/hlth66a-eng.htm

Stein, E. (1999). The mismeasure of desire. New York: Oxford University Press.

Stein, E. (1992). Conclusion: The essentials of Constructionism and the construction of Essentialism. In E. Stein (Ed.) Forms of desire. New York: Routledge.

Sternberg, R. J. (2002). Smart people are not stupid, but they sure can be foolish: The imbalance theory of foolishness. In R. J. Sternberg (Ed.) Why smart people can be so stupid. New Haven: Yale University Press (pages 232-242).

Sternberg, R. J. (2002). Why smart people can be so stupid. New Haven: Yale University Press.

Stevenson, H. W. (1992). Learning from Asian schools. Scientific American, 267, 32-40.

Stewart, D. E., Gucciardi, E., & Grace, S. L. (no date) Depression. Women's Health Surveillance Report. Downloaded October 2007 from: http://www.phac-aspc.gc.ca/publicat/whsr-rssf/pdf/WHSR_Chap_18_e.pdf

Strickland, B. (1995). Research on sexual orientation and human development: A commentary. Developmental Psychology, 31, 137-140.

Swaab, D. F. & Hofman, M. A. (1990). An enlarged suprachiasmatic nucleus in homosexual men. Brain Research, 537, 141-148.

Swinburne, R. (1998). Providence and the problem of evil. New York: Oxford University Press.

Swinburne, R. (2013). Mind, brain, & and free will. Oxford: Oxford University Press.

Tavris, C & Aronson, E. (1997). Mistakes were made (but not by me). Orlando, Florida: Harcourt, Inc.

Taylor, C. & Dennett, D. (2002). Who's afraid of determinism? Rethinking causes and possibilities. In R. Kane (Ed.) The Oxford handbook of free will (pp 257-277). New York: Oxford University Press.

Thaler, R. H. & Sustein, C. R. (2009). Nudge. New York: Penguin Books

Thornhill, T. (2012) Psychiatrist retracts controversial study that claimed gay men and women can be turned heterosexual by therapy. Downloaded from: http://www.dailymail.co.uk/sciencetech/article-2128750/Robert-Spitzer-retracts-study-claiming-homosexuals-turned-straight.html?ito=feeds-newsxml

Throckmorton, W. (1998). Attempts to modify sexual orientation: A review of outcome literature and ethical issues. Journal of Mental Health Counseling, 20, 283-304.

Tillich, P. (1952). The courage to be. New Haven: Yale University Press.

Tremblay, P.F., & Gardner, R.C. (1995). Expanding the motivation construct in Language Learning. The Modern Language Journal, 79, 505-518.

Trevaskis, J. L., Sutton, G. M., Xu, A. W., & Butler, A. A. (2008). Transgenic models targeting the central nervous system. In K. Clement & T. I. A. Sørensen (Eds.) Obesity, Genomics and Postgenomics. New York: Informa (pages 89-107).

Trivers, R. (2011). The folly of fools: The logic of deceit and self-deception in human life. New York: Basic Books.

Turner, P. D. M. (1997). Biblical texts relevant to homosexual orientation and practice. Christian Scholar's Review, 26, 435-445.

Tversky, A. & Kahneman, D. (2002). Extensional versus intuitive reasoning: The conjunction fallacy in probability judgment. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.). Heuristics and biases: The psychology of intuitive judgment. Cambridge: Cambridge University Press (Kindle Edition).

Twerski, A. J. (1997). Addictive thinking, Understanding self-deception. Center City, Minnesota: Hazelden.

Urschel, H. C. (2009). Healing the addicted brain. Naperville, Illinois: Sourcebooks, Inc.

Vallacher, R. R. & Wegner, D. M. (1985). A theory of action identification. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Vallacher, R. R. & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. Psychological Review, 94, 3-15.

Vancouver, J. B. & Zawidzki, T. W. (2007). What determines the self in self-regulation? Applied psychology's struggle with will. In D. Ross, D. Spurrett, H. Kincaid, & G. L. Stephens (Eds.) Distributed cognition and the will (pp. 289-322). Cambridge, Massachusetts: A Bradford Book, The MIT Press.

Van Inwagen, P. (1983). An essay on free will. Oxford: Clarendon Press.

Van Inwagen. (2002). Free will remains a mystery? In R. H. Kane (Ed.) The Oxford Handbook of Free Will (pp 158-177). New York: Oxford University Press Inc.

Wagstaff, G. F., Wheatcroft, J., Cole, J. C., Brunas-Wagstaff, J., Blackmore, V., & Pilkington, A. (2008). Some cognitive and neuropsychological aspects of social inhibition and facilitation. European Journal of Cognitive Psychology, 20 (4), 828-846.

Wallace, W. J., Sheslow, D., & Hassink, S. (1993). Obesity in children: A risk for depression. In C. L. Williams & S. Y. S. Kimm (Eds.) Prevention and treatment of childhood obesity. Annals of the New York Academy of Sciences, 699, 301-303.

Waller, N. G., Kojetin, B. A., Bouchard Jr., T. J., Lykken, D. T., & Tellegen, A. (1990). Genetic and environmental influences on religious interests, attitudes and values: A study of twins reared apart and together. Psychological Science 1(2), 138-142.

Ward, K. (2005). Ecclesial authority and morality. In A. Lindzey & R. Kirker (Eds.). Gays and the future of Anglicanism. Winchester, UK: O Books (pp. 17-29).

Ward, K. (2005). African perspectives on episcopacy and sexuality. In A. Lindzey & R. Kirker (Eds.). Gays and the future of Anglicanism. Winchester, UK: O Books (pp. 243-259).

Watkins, M. (no date). Creation of the sinister: Biological contributions to left-handedness. Downloaded May 15, 2007 from http://www.hcs.harvard.edu/~husn/BRAIN/vol2/left.html

Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. Journal of Personality and Social Psychology, 53, 5-13.

Wegner, D. M. (1994). Ironic processes of mental control. Psychological Review, 101, 34-52.

Wegner, D. M. (1997). When the antidote is the poison: Ironic mental control processes. Psychological Science, 8, 148-150.

Wegner, D. M. (2002). The illusion of conscious will. Cambridge, Massachusetts: Bradford Books, The MIT Press.

Weiner, J. R. (2000). Edward Said and Me. Downloaded June 2007 from: http://www.meforum.org/article/191

Weinrich, J. (1992). Reality or social construction? In E. Stein (Ed.) Forms of desire (p. 175-208). New York: Routledge.

Wells, J. (1999). Second thoughts about peppered moths. The Scientist. 13(11) (May 24th) p. 13.

Well, J. (2000). Icons of evolution. Washington, DC: Regnery Publishing, Inc.

West, R. (2006). Theory of addiction. Oxford: Blackwell Publishing Ltd.

Willcutt, E. G., Pennington, B. F. & DeFries, J. C. (2000). Etiology of inattention and hyperactivity/impulsivity in a community sample of twins with learning difficulties. Journal of Abnormal Child Psychology. Downloaded March 29, 2008 from http://findarticles.com/p/articles/mi_m0902/is_2_28/ai_64456313/print.

Williams, C. J. & Weinberg, M. S. (2003). Zoophilia in men: A study of sexual interest in animals. Archives of Sexual Behavior, 32, 523-535.

White, M. (1994). Stranger at the gate. New York: Simon & Schuster.

Wood, M. E. (2000). How we got this way: The sciences of homosexuality and the Christian Right. Journal of Homosexuality, 38, 19-40.

Yarhouse, M. (2001). Sexual identity development: The influence of valuative frameworks on identity synthesis. Psychotherapy, 38, 331-341.

Yarhouse, M. A. & Throckmorton, W. (2002). Ethical issues in attempts to ban reorientation therapies. Psychotherapy: Theory/Research/Practice/Training, 39, 66-75.

Zimbardo, P. G. (2004). A situationist perspective on the psychology of evil. In A. G. Miller (Ed.) (2004). The Social psychology of good and evil, (pages 21- 50). New York: The Guilford Press.

Zucker, K. J. & Bradley, S. J. (1995). Gender identity disorder and psychosexual problems in children and adolescents. New York: The Guilford Press.

Appendix1: A Discourse on Bad Beliefs

Psychological Models – Underpinnings of Bad Beliefs

In psycho-history one sees monumental failures in the beliefs, opinions, and knowledge claims of individuals and groups—whether drawn from first-person knowledge reports, collective memories, authoritative arguments, historical research, explanatory coherence, or psychological theory. And we see a plethora of explanatory models and variables advanced in psychology to explain failures in beliefs, and failures in subsequent self-regulation.

The variegated psychological positions support caution when it comes to trusting beliefs and knowledge claims. Psychology offers arguments for vigilance regarding understanding of the mechanisms involved in behaviours and preferences. Explaining problematic eating patterns, smoking, heterosexuality, homosexual relationships, racism, phobias, bullying, attachment, love, self-denial, gambling, and so on, is not complicated. Psychological studies, theories, and models can be presented and considered as explanatory frameworks for understanding appetites, and apparent appetitive excesses and failures and their correlates—particularly failures in beliefs, failures in knowledge, and failures in self-regulation—but explanations are tenuous and tentative.

The psychologist asks: why do people fail in sound belief formation, or knowledge acquisition, or wise behaviour? More graphically, some ask: why do people believe "stupid" things and do "stupid" things? Sternberg (2002), for example, merged the graphic shocker of "stupidity" with the wiser analyses of various psychologists in his book, "Why Smart People Can Be So Stupid." He allowed for the compilation of a number of perspectives to address the question of why smart people do stupid things. Having multiple models on the table, at the very least, helps flesh out a range of potential explanations for stupidity. In a sense, many of these

perspectives reduce to one issue, the issue of belief—faulty beliefs, immature beliefs, competing beliefs, fluctuating beliefs, unwise beliefs, or just plain "stupid" beliefs.

A Simple Beliefs Model

Dweck (2002) argued as follows: incorrect beliefs, or a failure to fully use one's beliefs, stunt the intellect, and subsequently, impact one's behaviour negatively. For example, believing that ability is fixed, or that potential cannot be developed, or that there is no meaningful value in effort, can be detrimental. The beliefs are a problem. It is not smart to believe there is no value in effort if indeed there is value in effort, and if indeed ability is not fixed. In fact, cross-cultural approaches to learning that consider such attributions as ability, effort, or luck, do point to the significant value of effort (see Stevenson, 1992). Such empirical research would support Dweck's contention that incorrect beliefs lead to faulty self-regulation, and less-than-smart behaviour—behaviour that interferes with development.

The solution for poor self-regulation in this attribution-theory framework is acquiring, or developing, a better belief, or a correct belief—a belief in the value of effort, for example (Dweck, 2007). Such a belief leads to substantive effort, better knowledge construction, and better cognitive behavior, all of which would signal better choices. Obviously, better beliefs can lead to subsequently better behaviours; better beliefs and behaviours mitigate "stupidity." Thus, it is a belief→thinking→choice sequence, or protocol, which drives poor behavior (and smart behaviour) with the fundamental problems rooted at the belief level. Though this sequence, belief→thinking→choice, might be viewed as influenced by nature and nurture, the solution is nurture, that is, nurture sound beliefs that will facilitate better thinking, better self-regulation, and better choices.

This beliefs model aligns with the philosophical underpinnings offered by Plantinga (1993a, 1993b). That which undermines warranted beliefs, whether improperly functioning cognitive architecture or cognitive aberrations, will predispose one to building poor constructs, making poor choices, applying poor self-regulation, and becoming a poor fool.

An Activity-Switching, Self-Regulation Model

Perkins (2002) targets folly as a psychological construct linked to a recurring failure to self-regulate, in spite of an apparent ability or potential to self-regulate. He advances the notions of blind folly and plain folly as informative categories to frame thinking. Blind folly is characterized by oblivion or "deep self-deception." It might be seen in practice when one's "espoused theories" fail to align with one's practices or "theories-in-use." For example, George, in his postmodern garb, espouses the belief that knowledge is "impossible," then he turns and argues for the claim, expecting the reader to come *to know* this "fact." George, will turn and look to see if there is a bus coming before he crosses the street—something he values knowing. George's "beliefs-in-use" do not align with his "espoused beliefs." Such a "belief" problem is blind folly!

Whether or not some smokers reach the stage of deep self-deception, or blind folly, is not clear. One suspects George knows better at some level, but he doesn't seem to know he knows better. One suspects that smokers know there are major problems with smoking at something close to a surface level. But do they know they know better?

If one argues that smoking is harmful and foolish, yet uses the belief that smoking helps control weight, we have a different kind of folly. Plain folly exists when we know a particular

behaviour is foolish, unwise, risky, or wrong, yet we persist in it[1]. It is a form of rationalization. Blind folly could be viewed as an unconscious disconnect, whereas, plain folly is a conscious disconnect.

In addition to a plain/blind folly axis, there is a mild/serious axis to consider. On a *mild end* of various connect-disconnect continua we could list actions like over-eating, smoking, procrastination, speeding, jumping the orange/red light, and sexual experimentation. On the more *serious end* we could list drinking and driving, unprotected sex, street racing, racism, or even extremes like the "stupid" behaviours (or what we label as inhumane behaviours) seen in sociopathic behavior, the holocaust, genocides, and pogroms. With plain folly, people know they are doing something wrong. Blind folly does not seem to rise to the conscious level; or perhaps it does not rise to the conscious level any longer.

Rather than defer to explanations like "weak-will," or emotions, to explain folly, Perkins develops the notion of "emergent activity switching" where "…drivers in a system increase in intensity, eventually reaching a tipping point that reorganizes the system into another pattern of activity… (Perkins, 2002, p. 66)." Plain folly transforms into blind folly—like water to ice.[2] One innocuous analogy offered by Perkins is thirst. It is not difficult to imagine that a rational pursuit to quench a thirst can be restructured into frenzied and apparently irrational behaviour as the thirst builds. Stealing a bottle of water as desperate thirst increases is perhaps an example of a shift to plain folly; whereas, leaving a baby in a hot car in the summer to search for a bottle of water to purchase is thinking so focused as to be considered closer to blind folly and irrationality.

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[1] It would seem possible as well that plain folly would morph into blind folly at some point, at least for some beliefs. Such a transition would be worth investigation with respect to self-deception, rationalization, suppression, repression, denial and so on.

[2] Another configuration worth applying here is the switch from System 2 level thinking (reflective, analytical, and linear) to System 1 level thinking (automatized, intuitive and parallel) as developed by Tversky and Kahneman (see Kahneman, 2003, 2011). The mechanism is discussed in this text later here.

When would plain folly switch to blind folly in an area like smoking? Answer: when smoking has progressed to the level of automaticity—a thoughtless activity with respect to both benefits and harms. When would plain folly switch to blind folly in the area of over-eating? Answer: when an eating-style or pattern has progressed to the level of automaticity—a thoughtless activity with respect to cognitive input or controls. When would plain folly switch to blind folly in the area of homosexuality? Is it when automaticity competes with cognition, social conscience, or synderesis? When would plain folly switch to blind folly in the area of suicidality? Perhaps plain folly switches to blind folly when the suicidal act, as opposed to ideation, or parasuicidal acts, takes place.

Honourable pursuits (e.g., a livelihood, raising a child, winning a hockey game, gaining property, selling a product, getting the trains running on time, helping a native population, correcting a historical injustice, and so on) are admirable, desirable, and exemplary. But, such pursuits—good pursuits—can morph into plain folly, or even blind folly. Do these follies—plain and blind—all reduce to unwarranted beliefs in one form or another? Do they depend on bad beliefs? Are there other mechanisms involved that interact with bad belief?

Emergent activity switching is normally an effective means for meeting needs and normal functioning, but it can function as what Perkins calls “an engine of folly.” Emergent activity switching can generate things like impulsivity, neglect, procrastination, vacillation, backsliding, indulgence, overdoing, walking the edge, and so on. So, there are potential problems, perhaps mechanisms, associated with emergent activity switching. Perkins calls these problems: (1) mistuning (key parameters are “not well tuned to generate adaptive behavior”), (2) entrenchment (counterproductive patterns persist, perhaps habitually), and (3) undermanagement (such that low level conditioning processes are dominant rather than more rational cognitive and metacognitive strategies).

Of interest, Perkins argues that typical excuses, which fall in the category of folk-psychology (e.g., weakness of will, overwhelming emotions, mindlessness, and irresponsibility), can actually serve as "a barrier to effective self regulation (2002, p. 84)." Skip the excuses. Aim for better knowledge construction, and better thinking as the route to better beliefs and better choices. Acknowledging the context problems of mistuning, entrenchment and undermanagement helps situate the knowledge constructed. A constructivism that advances a particular knowledge construction independent of the possible, problematic precursors of that construction (history, development, trajectory, morphing, transitions, choices, critique, or as Perkins might say "without examining the mistuning, entrenchment, and undermanagement") is potentially an "engine of folly." For Perkins, are we simply facing bad beliefs as a prelude to folly? It seems so.

An Imbalance Model

Sternberg (2002) advances an imbalance theory of foolishness which he contrasts with wisdom, as opposed to the stupid/intelligent contrast others make. It seems—admittedly taking a little interpretive liberty—the imbalance can apply to *deficits*, *dispositions*, and *desires*. Sternberg sees the beginning of foolishness in a problem with tacit knowledge which is considered to be in a *deficit* state. Tacit knowledge is procedural (i.e., knowing how), instrumental (i.e., for achieving goals and valuables, or what one desires in the context of competing desires), and indirectly acquired (e.g., via pragmatics, socio-linguistics, or dispositions). In this configuration the "beginning of foolishness" is independent of personal agency.

The three *dispositions* that interfere with tacit knowledge use are: a sense of omnipotence, a sense of omniscience, and a sense of invulnerability. Such dispositions—bad

beliefs—would indicate a psychological state that was out of balance. *Desires* out of balance might be seen in a selective focus on an interest, a timeframe, or an action.

Wisdom involves balance: (1) between INTERESTS, intrapersonal interests, interpersonal interests, and extrapersonal interests (e.g., city, country, God), (2) between TIMEFRAMES, the short term and the long term, and (3) between ACTIONS, adaptation to an environment, shaping an environment, and selecting a new environment. Foolishness is seen in an imbalance in one or more of these areas.

While Sternberg's balance theory does provide a descriptive framework, a very real question is: what pushes the *deficit* in tacit knowledge? Is it a failure to learn? Is it incorrect learning? Is it an inability to learn? Does it reduce to belief, that is, the absence of sound beliefs? What pushes problematic *dispositions* to the surface? Are these just problematic beliefs? Are desires entangled with beliefs? Does Sternberg's focus on balance in a sense reduce to a focus on beliefs? It seems so. As an aside, where does personal agency, and therefore responsibility, fit in Sternberg's approach[1]?

Applying Sternberg's model to smoking consider the *dispositions*. Young smokers just beginning their smoking trajectory do seem to have a disposition characterized by a sense of omnipotence, a sense of omniscience, and a sense of invulnerability. Secondly, they clearly have *desires* out of balance: (1) between INTERESTS, intrapersonal interests (e.g., health, athletic ability), interpersonal interests (parents, teachers, peers, health practitioners, etc.), and

[1] Sternberg applies his balance theory to Clinton, Nixon, Chamberlain, Judge Wachtler, War, and so on. In terms of *dispositions* these individuals could be viewed as having a sense of omniscience, omnipotence and invulnerability, at least arguably to some degree. In terms of *desires*, these individuals likely did show an imbalance in interests (personal through to extrapersonal), an imbalance in timeframes (immediate, distant), and an imbalance in objectives (reactive, stasis, and proactive). But doesn't everyone? In terms of *deficits*, these individuals may have opted for strategies that revealed they really did not have good knowledge regarding "know-how," at least in some areas. Even though the problem is in a select area, we still are likely to assign responsibility.

extrapersonal interests (e.g., city, country, God), (2) between TIMEFRAMES, (i.e., the initial curious dabbler in the short term, and the addict in the long term), and (3) between ACTIONS, adaptation to an environment, shaping an environment, and selecting a new environment. Finally, with respect to *deficits* in tacit knowledge, they have them. They lack the procedural and instrumental knowledge necessary to deal appropriately with situations, dispositions, interests, timeframes, and aspirations. Though Sternberg's model contains a great deal of detail and direction for thought it too does reduce to faulty beliefs, competing beliefs, or bad beliefs, and, consequently, the choices such beliefs sustain.

An Illusory Thinking Model

This model (Piattelli-Palmarini, 1994) can be tied to mistakes in knowing, or illusions about what we think we know. Thus, it is belief-based. Piattelli-Palmarini argues for seven deadly sins, or dangers, that lead us to wrong conclusions, and by inference bad beliefs.

- First: "overconfidence." Many show an unrealistic overconfidence in answering questions. Indeed, "...the discrepancy between correctness of response and overconfidence increases as the respondent is more knowledgeable" (p.119). The more you know, the more you need to guard against overconfidence. Are academics particularly at risk?
- Second: "illusory correlations" or magical thinking. The person convinced of a "positive correlation...will always find new confirmations and justify why it should be so (p.122)." "We are naturally... verifiers rather than falsifiers... (p.

123).” This confirmation bias requires strategic protocols[1] to protect the “believer.”

- Third: the "Historian's Fallacy" or “predictability in hindsight.” In essence, "...we all honestly think we could have predicted what happened, as long as we know, or think we know, that it actually did happen (p. 124).” A bad belief!
- Fourth: “anchoring.” Our beliefs and opinions get arbitrarily "anchored" to such things as first impressions, original opinions, contexts, propaganda, news reports, authorities, emotions ...and these first impressions are quite resistant to change.
- Fifth: “ease of representation.” When asked which is greater, death from suicide or death from homicide, homicide usually gets the nod. People typically report a greater death rate via homicide, as “...the more the occurrence impresses us emotionally, the more likely we are to think of it as also objectively frequent (p. 128).” Be wary of your imagination as a belief-basis!
- Sixth: “probability blindness.” “Any probabilistic intuition by anyone not specifically tutored in probability calculus has a greater than 50 percent chance of being wrong (p. 132).” We are "blind not only to extremes of probabilities, but also to intermediate probabilities... (p. 131).” Is our reaction to genetic engineering, nuclear power, pharmaceutical test demands rational? We have a non-rational “...peremptory desire that there be no risk at all... (p. 131),” and thus small risks can gain great proportions. Bad beliefs!
- Seventh: “reconsideration under suitable scripts,” or what Piattelli-Palmarini calls the “Othello Effect.” In essence, “...our judgment of probability allows itself

[1] Multiple-perspective-taking, hypothesis testing, planned skepticism, peer review, analysis, verisimilitude, and so on, help guard the believer against bad beliefs.

> to be influenced by fictions, including scenarios we know to be pure inventions (p. 134).” Bad, bad beliefs!

In essence, the entire notion of illusory thinking simply reduces to bad beliefs, or faulty beliefs. What Piattelli-Palmarini offers, and the offerings are valuable, are psychological sources of bad beliefs. The developing psychology of bad beliefs (Plantinga, Sternberg, Dweck and Perkins) is believable.

Applying Piattelli-Palmarini to smoking we ask: (1) are smokers “overconfident” in their initial ability to control their smoking? Yes. And, are they “overconfident” in their judgments about the value of smoking? Yes! (2) Are smokers prone to “illusory correlations,” focusing on the social, sedating, and slimming benefits of smoking only? Yes! A confirmation bias! (3) Are smokers’ beliefs and practices “anchored” to their primary experiences with smoking (i.e., the cool, the rebel, the rush)? Yes! (4) Are smokers subject to “ease of representation” which emerges from their smoking peer group? Yes! (5) Do smokers experience the “Othello Effect” via the information they receive from their “friends,” and the nicotine pushers? Yes!

Asking the same questions of those formulating opinions on their homosexual orientation, or their over-eater’s image, can generate similar affirmative answers. Are homosexuals “overconfident” regarding their natural disposition, and their judgments about the nature of a homosexual orientation? Often! (2) Are homosexuals prone to “illusory correlations,” focusing on social preferences, mannerisms, and interests as orientation markers? Often! (3) Are homosexuals’ beliefs and practices “anchored” to their primary experiences with sexual activities? Seems to be a reasonable suspicion! (4) Are homosexuals subject to “ease of representation” which emerges from their peer group? Arguably! (5) Do homosexuals

experience the "Othello Effect" via the information they receive from their "friends" and society? Yes! Can one argue that the answers are: Yes?

Illusory thinking is a problem. Bad beliefs are a problem. Illusory thinking leads to bad beliefs. Warranted beliefs at a reflective, rational, level require work.

A Strategic Self-Regulation Model

Also targeting failures in self-regulation as the road to stupidity is the model offered by Ayduk and Mischel (2002). How is it that a smart person does a stupid thing? Ayduk and Mischel consider Sol Wachtler, a legal-eagle, a chief judge of the State of New York and the court of appeals. He ended up as a felon incarcerated in a federal prison. How and why?

> "Judge Wachtler was well known for advocating laws to make marital rape a punishable crime, and he was deeply respected for his landmark decisions on free speech, civil rights, and right-to-die issues. After his mistress left him for another man, however, Judge Wachtler spent thirteen months writing obscene letters, making lewd phone calls, and threatening to kidnap her daughter. His descent from the court's bench as the model of jurisprudence and moral wisdom to federal prison testifies that smart people are not necessarily consistently so across different areas of their lives… (Ayduk & Mischel, (2002, p. 86)".

Why the stupidity? Ayduk and Mischel (2002) note likely contributing influences (construals, expectations, beliefs, values, and so on) that factor into such behaviour. A sense of entitlement, a sense of immunity, a sense of assured privacy, might contribute. This would be easily aligned with the career status of a judge. Or akrasia (i.e., the notion of the weak-will of a person) might be viewed as a cause. In the face of strong emotions a sense of powerlessness aligns with a weak-will that even know-better professionals could face. Are the bad beliefs impelling bad behaviour? Are competing beliefs distorting outcomes? If so, then the problem is

more than bad-beliefs, it is the power of bad beliefs in the context of a belief infrastructure—paradigm, creed, or worldview.

Furthermore, it is not a major difficulty to acknowledge that the person might want to do the right thing, and that the person might know what the right thing is, yet the person defaults to do the wrong thing. The bad belief overpowers the better belief. A weak-will might serve as an explanation. Such an explanation seems to fit with common observations, perhaps personal experiences, and some psychological research. But is the weak-will a personality trait, a character flaw, a failure of reason, or a slippage of reasoned self-regulation?

While Ayduk and Mischel note that construals, expectations, beliefs, values, and so on, factor into such behaviour, one wonders how these play out in terms of relative importance. Which is most important? Which is the foundational component? Which is the seminal factor? Is it values? Is it beliefs? Is it personality? Is it will power? A logical, and temporal, case can be made that beliefs are prior—beliefs support values, beliefs undergird the motivation for willful acts, beliefs can be formative of aspects of personality (e.g., kindness, patience, sociability, on the "right" hand, and bullying, intolerance, bigotry, racism on the other hand, the sinister hand). Beliefs seem to be the foundational component.

Whether the source of the tendency to stupidity is a belief, or a more fundamental problem tied to a brain-based personality trait, or a fundamental problem with human nature, or simply a cognitive failure in self-regulation, what Ayduk and Mischel attempt to do in the text is to offer understanding to help people "…outsmart their own tendencies to behave stupidly… (2002, p. 88)," or sinfully.

A list of mediators and strategies (inferred from the research cited and textual comments) which could help people "outsmart their own tendencies" may readily be

constructed[1]. The list is based on empirical research, and does explicate the case for failures in self- regulation as a source of stupidity. Would such mediators of self-regulation have helped Judge Wachtler? To get Judge Wachtler to practice such strategies he would have to believe in them, at least as possibilities. So we are back to the importance of beliefs.

In terms of the big picture there is a need for clear, cool, calm, thinking, and strategies to facilitate thinking dispositions and skills. However, the fact that prominent thinkers would be cool, calm, thinkers, yet led astray, shows that thinking is not enough. There is a place for good thinking and good arguments, but what we seem to need is better thinking, better arguments, indeed, the best arguments. Prioritizing good thinking does point to the fundamental importance of methodology, but the essential focus, the more fundamental focus, would be belief—good beliefs as opposed to bad beliefs. Obviously, good thinkers can end up with bad beliefs. Moreover, at times what appear to be good beliefs can turn out to be bad beliefs upon further analysis.

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[1] List:

1. Learning delayed gratification strategies. Manage rewards to capitalize on the value of distance and abstraction (i.e., long term and higher order rewards), perhaps by activating the negative or aversive aspects of immediate desirable distractions.
2. Understand "Systems of Thinking" (hot vs cool) and focus attention on the "cool" systems which emphasize informational and abstract aspects.
3. Avoidance of thinking about the dangerous topic by purposeful self-distraction. This might be accomplished by attending to fun-filled and pleasant distractions (not aversive distractions, or sad thoughts, as these, apparently, don't work as well).
4. Implementation plans can be set. A plan can initiate goal-directed behaviour automatically; a plan can facilitate action initiation; and a plan can drive action blockage (e.g., "no food after dinner" as a plan or rule can preemptively serve as an action blockage for eating too much).
5. Strategies to resist (e.g., to resist distraction it seems planned rewards help— "…temptation-inhibiting, and reward–oriented implementation plans facilitated self-control better than task-facilitating plans…" (Ayduk & Mischel , 2002, p.94)
6. Recognize dispositional vulnerabilities (e.g., rejection sensitivity…) and apply cognitive reappraisal. That is, reconstrue problems as differences of opinion, or situationally induced, or transitory, etc. (transforming, or reframing temptations and obstacles…)
7. Focus on long term goals as opposed to short term goals (long term is better)
8. Recognize there are levels of motivation in which case strategies to increase motivational level could help.
9. Control and self-efficacy beliefs influence effort, optimism and a coping style that can lead to more positive outcomes.
10. Awareness of neuropsychological underpinnings might facilitate the engagement of frontal lobes and hippocampal connections to override the amygdala-based responses—in effect, having "cool" reason trumping "hot" emotions.

A Doing-Good Model (And Consequential Failures)

There is a paradox in the failure to do "the good" by "doing a good" (i.e., doing what is stupid, albeit intending to do what is good). This phenomenon can be seen in Sowell's (1999) book, "The Quest for Cosmic Justice." He presents a number of cases where intentions to do good end up causing harm. People implement policies and practices intended to help the poor, for example, and end up doing more harm to the poor. Good intentions, bad consequences! Such do-goodery is captured by Sowell's term, "The Tyranny of Visions." We need a careful examination of our vision (our beliefs) to avoid such tyranny. We need thoughtful self-regulation to pursue our wise vision. Bad beliefs that look like good beliefs!

Similarly, Baumeister and his associates (Baumeister, 1997; 2005; Baumeister & Vohs, 2004a, 2004b) focus on belief-based self-regulation as a mechanism for stupidity, foolishness, misbehaviour, and even evil. Here we can reframe their approach with a question: Can one end up doing what is stupid or wrong, albeit with the intention of "doing good?" Yes! Doing what one believes to be "the good" can end up obviously doing what is stupid. In fact, it might be the case that all stupidity is driven by doing what one believes to be good. Bad beliefs, mistaken for good beliefs!

While termed a "doing-good" model for the present discussion, this approach links to the roots of evil—the four roots of evil as identified by Baumeister (2007). The four roots can be termed: (1) gain, (2) egotism, (3) idealism, and (4) sadistic pleasure. Ironically, these roots of evil can be structured as "doing good:"

- (1) when good is defined as getting what one wants (Instrumentality),

- (2) when good is defined as dealing with threats to the self (e.g., an attack on honour, image, self esteem, etc.) and therefore image enhancement (Self-protection, and the development of Self-esteem),
- (3) when doing good is defined as doing what one believes to be right (Idealism), and,
- (4) when doing good is defined as obtaining reinforcement (pleasure), even when the reinforcement emerges from such suspect sources as sadism or schadenfreude. As moral high ground one can find pleasure in seeing the other suffer, especially if it is viewed as just or deserved suffering (Justice).

And the Law of Effect holds (i.e., behaviour that is followed by a good effect tends to be repeated). Applying the four roots of evil on either a macro level or a micro level can be informative. On a macro level consider the terrorist attacks on 9/11. Was this "doing-good" with respect to (1) gain, (2) egotism, (3) idealism, and (4) sadistic pleasure/justice. Yes. The evil can be configured as doing good: (1) *gain*, when good is defined as getting what one wants (revenge, attention, the will of Allah, jihad, submission, etc.), (2) *egotism*, when good is defined as dealing with threats to the self (an attrition of honour, image, self esteem, culture, religion, etc.) and therefore image enhancement (self-protection, and the development of self-esteem, as with the image enhancement evident in much of the immediate Islamic reaction, and now with Western overt deferral to appeasement practices towards Moslems in the West), (3) *idealism*, when doing good is defined as doing what one believes to be right (idealism, particularly religious idealism), and, (4) *sadism* (behaviour that is followed by a good effect tends to be repeated, especially when doing good is defined as obtaining reinforcement from such suspect sources as sadism or schaudenfreude, framed as *Justice*, as in the rewards which followed terrorist acts).

On a micro level consider the robbery of the local 7/11. Was this "doing-good" with respect to (1) gain, (2) egotism, (3) idealism, and (4) sadistic pleasure. Yes. These roots of evil can be configured as doing good: (1) *gain*, when good is defined as getting what one wants (money and cigarettes), (2) *egotism*, when good is defined as dealing with threats to the self (an attrition of honour, image, self esteem, etc.) and therefore image enhancement (self-protection, and the development of self-esteem, as with the image enhancement that money and crime can buy from certain peers), (3) *idealism*, when doing good is defined as doing what one believes to be right (a sense of entitlement, or a retributive sense of dealing with Marxist injustice, or redistributive sense of fairness), and (4) *sadism/suffering* (behaviour that is followed by a good effect tends to be repeated), when doing good is defined as obtaining *justice* (even when the reinforcement emerges from such suspect sources as sadism or schaudenfreude, as in the rewards which followed previous criminal acts). At the macro level and the micro level "doing good" appears malevolently intertwined with doing evil.[1]

Baumeister considers the possibility that failures to self-regulate may be tied to resource depletion on the one hand, but on the other hand to a shift in thinking towards low-level thinking in a manner proposed by Vallacher and Wegner (1987). Such low-level thinking fixates on the periphery, on mundane details, and on irrelevancies when higher level thinking encounters constraints (see the discussion of action identification theory in an alternate section). People can miss the big picture, or avoid the morally taxing questions, or switch from cognitively demanding rationales, when constrained, and thereby default to addressing the more mundane, albeit in an efficient way. There is a shift to belief deterioration or, at least, a shift to deterioration for "beliefs-in-use" if not espoused beliefs.

[1] Is smoking viewable as both doing good and doing "evil?" Is homosexuality viewable as both doing good and doing "evil?" Is over-eating viewable as both doing good and doing "evil?" Is suicide viewable as both doing good and doing "evil?" Yes. Yes. Yes. Yes!

In another variant on thinking-shifts, Baumeister draws on Solomon and Corbit's (1974) opponent-process theory which helps explain how a person can be drawn in to aversive conditions. Using examples like sky-diving, or bungee-jumping, one can see how opponent-processes could combine—the aversive sensation of falling is opposed by the subsequent pleasant sensation of safety, or relaxation. In effect, a failure to self-regulate to avoid an aversive situation can be facilitated by the reward associated with the subsequent situation, the favourable opponent-process. Afterward, one might choose to confront an aversive situation to attain the reward which follows. Indeed, there is the possibility that both the process, and the opponent-process, are rewarding but in different ways—one showing decreasing potency, while the other shows increasing potency. In such a scenario we see how bad beliefs, or risky beliefs, can be rewarded, just like bad actions, or risky actions. For a fuller presentation of the opponent-process theory see the discussion in a later section.

If there is a limitation in Baumeister's claims it is likely linked to the source of self regulation. Worthington and Berry (2005) question Baumeister's "…explicit attempt to rely solely on scientific data (p. 157)…" in which case the "virtue" of self-control is a resident attribute (whether innate, acquired, learned or developed). Having self-regulatory competence, like having a good memory, doesn't point one in the direction of where the application of the skill would be appropriate.

Indeed, wisdom would be a more descriptive, and more functional, master virtue. Wisdom would draw upon Convention, Synderesis, Social Conscience, Law, Deontology, Empathy, Emotional Intelligence, Altruism, Selflessness, Self-interest, Moral Development, Character, and so on. A failure in wisdom would seem to be the more important problem than a failure in self-regulation since wisdom underpins sound self-regulation. Moreover, in this scenario a failure in wisdom would correspond to a failure in belief.

Is there an ideal or universal standard that is tied to deep knowledge or a hardwired synderesis? Is there a knowledge that we can't not know? According to some there are universals, or shared moral norms or principles like "courage is a virtue" (Beis, 1964). As well, there are things we "can't not know" as argued by Budziszewski (997, 1999, 2003). Such hard-wired "deep knowledge" typically tied to natural law theory is not simply religious. In fact, George (2001) carefully maps out the links to Socrates, Plato, Cicero and Aristotle providing a philosophical underpinning that coexists with the Judeo-Christian religious foundation. As a source of self-regulation, however, this hard-wired knowledge (or belief) is not a sufficient source. We often act contrary to our better knowledge, and better self.

Is there a sufficient source for self-regulation? Baumeister and Vohls (2004) term a problem with self control as a proximal cause. Maybe it is more informative to see the issue viewed in Aristotelian terms as a problem with a material cause, or efficient cause, or final cause, or formal cause. To illustrate, when one doesn't exercise a particular self-control option, one is responding to competing final causes, and the "other" cause won. One may be hampered by a lack of the material resources (e.g., peer, parent, or social institutions) to support the exercise of a particular self-control option. As an efficient-causal agent, one is choosing a particular self-control possibility. The notion of competing final causes and personal agency, it seems, are key considerations. Thus asking if there is a sufficient source for self-regulation leads one to respond: "at times."

Rather, than focus on the presence or source of evil, it is equally informative to address the absence of good, or absence of the better good. If evil is the absence of good (or the better good) this focus is appropriate. The solution to the problem of "doing evil while intending good," involves formulating a policy on the "good:" (1) in terms of the definition of "good" in the context of a range of broader, and competing, goods, and (2) in terms of ranking "goods" so

that one might choose the better "goods." Focusing on rank is to flag the notion that some "goods" are more important than others. The good associated with a full stomach (and thus a long term focus on preserving life) is less important than the good associated with a life preserved in the immediacy of a flailing, drowning-victim. There are competing goods, and one should forego the lesser for the better good. In terms of competing final causes, some final causes are better than others. Obviously, then, some beliefs are better than others—the beliefs that align with the better "goods."

So, failures to self-regulate are linkable to competing beliefs about competing goods (final causes)? Likely we are facing a failure to self-regulate in part only. At least one configuration of a failure to self regulate emerges from: (1) an inappropriate belief about the most appropriate good to choose, or (2) competing beliefs about the most appropriate good to choose. If one chooses the wrong level of good in the hierarchy we ask why she chose that. Is it simply as Woody Allen says, "The heart wants what it wants?" Or is this, rather, Woody Allen defaulting to lower level thinking, and lower level beliefs?

Psychological Mechanisms -- Underpinnings of Bad Beliefs

Two theories to facilitate thinking about belief in the context of cognitive psychology (The Opponent-Process Theory, and The Action-Identification Theory) were introduced briefly earlier when discussing Baumeister's views of self-regulation. Those two theories address the importance of belief, on the one hand, but equally importantly, they address what happens when beliefs fail, atrophy, shift, or vary as a function of thinking-shifts and behavioural shifts. A third theory—The Ironic Effects Theory—addresses the issue at a higher level, the level of intention. Ironically, intentions can lead to the contrary effect. A fourth theory, a "Darkened-Mind"

theory, addresses the issue from a more philosophical or theological position. Dissonant-Thinking theory and Ideomotor-Effects theory serve to further enrich the notion of belief-shifts.

Opponent-Process Theory

The Opponent-Process Theory of Motivation was advanced by Solomon and Corbit (1973, 1974) at a time when behaviourism was a prominent force in thinking about learning and learning theory. Utilizing principles of operant and classical conditioning they captured important aspects of learning that, even now, inform understanding of the topics considered here. By elaborating on operant conditioning with respect to both processes and opponent-processes a more complex view of motivational influences can be constructed than that which has been offered by introductory behaviourism. To illustrate the mechanism and dynamic of opponent-processes an example like sky-diving is utilized. Sky-diving shows an aversive sensation (to falling) which as a process is opposed by a subsequent pleasant sensation (safety or relaxation); this subsequent pleasant sensation is an opponent- process. In effect, this plays out as follows with respect to behaviourist thinking: choosing to suspend, or circumvent, normal self-regulation-restraint to avoid falling (i.e., avoidance of an aversive situation) is subsequently facilitated by the reward associated with the consequent situation of exhilaration, relaxation, and safety. The suspension of normal self regulation is rewarded.

Even more intriguing, both the process, and the opponent-process, are rewarding but in different ways—one (the process) shows increasing potency via operant conditioning and the "rush" of the jump, while the other (the opponent-process) shows stable or decreasing potency, over time, via habituation or satiation. In effect, the sense of safety as a reward would diminish over repeated trials as one learns the danger is not so dangerous after all. The change as a

function of time is important for learning, and therefore for consideration in changes in the caliber of knowledge, the caliber of belief and the caliber of choice over time.

The sky-diver is rewarded (by the rush of the process, and the safety of the opponent-process). Similarly, bad beliefs, or risky beliefs, can be rewarded, particularly when the beliefs turn into bad actions, or risky actions—there is the rush of the risky belief entertained, the process, and the safety of the opponent-process, as in the sky-diver scenario.

Before considering the "smoking" analogy more closely, understanding can be enhanced by considering processes and opponent- processes more closely for other scenarios. In both the 1973 and the 1974 papers Solomon and Corbit presented multiple examples of phenomena related to behavioural patterns that tapped into opponent processes (i.e., dogs receiving shocks, sky-diving, opiate usage, love, and so on). Four of the seven samples they present are framed in the following chart in a manner that captures learning sequences and the responses at various stages in the sequence.

Table 9. Selected Samples of Motivational-Emotional Phenomena and the Responses at Various Stages

		First Stimulations		Later Stimulations	
Consequence	Example	State A (input present)	State B (input gone)	State A' (input present)	State B' (input gone)
Aversive	Dogs receiving 10 second shocks	Terror	Stealth	Unhappy	Joy
Aversive	Sky-diving	Terror	Stunned	Tense and eager	Exhilaration
Hedonic	Opiate use	Euphoria	Craving	Relief	Intense craving
Hedonic	Love	Excitement	Loneliness	Comfort	Grief and longing

Note. The lightly shaded cells indicate clear rewards. The darker shaded cells (craving and longing) would have a reward-component.

The theory does provide a rather interesting mechanism for the process of moving toward entrenchment for stimuli that have positive and/or negative qualities or consequences (i.e., hedonic and/or aversive). Considering now the smoking analogy we can see how it could parallel both aversive phenomena and hedonic phenomena. There is something aversive about smoking (at least initially[1]), at the same time there are psychological and physical aspects, or correlates, of smoking that are hedonic.

Table 10. Smoking As Paralleling The Aversive Phenomenon

	First Stimulations		Later Stimulations	
Example	State A (input present)	State B (input gone)	State A' (input present)	State B' (input gone)
Dogs receiving 10 second shocks	Terror	Stealth	Unhappy	Joy
Sky-diving	Terror	Stunned	Tense and eager	Exhilaration
Smoking	Terror, form of Disgust, Shame, Nausea	Stunned, use of stealth	Tense, eager and ambivalent	Satisfaction, Exhilaration

Table 11. Smoking As Paralleling The Hedonic Phenomenon

	First Stimulations		Later Stimulations	
Example	State A (input present)	State B (input gone)	State A' (input present)	State B' (input gone)
Opiate use	Euphoria	Craving	Relief	Intense craving
Love	Excitement	Loneliness	Comfort	Grief
Smoking	Excitement and Euphoria (psychological and physical)	Craving, Longing	Relief, Reward, Comfort	Intense craving, Longing and even Grief

Does it seem reasonable to propose that smoking can reach entrenchment via both a hedonic route and an aversive route in combination? Yes, it is a credible proposal. In fact, in an opponent-process theory both State B and State B' could be viewed as rewarding for the aversive condition. For the hedonic condition all four states would be conducive to

[1] In fact, there are those legendary stories about parents who caught their children smoking and decided to force them to smoke a cigar, or force them to smoke multiple cigarettes to the point where they became physically ill. As the story goes, such children could never look at a cigarette again. Such an event would introduce the notion that the caliber of aversion is also a factor in motivation, and may be relevant in an opponent-process theory.

entrenchment—both State A and State A' would be viewed as rewarding for the hedonic condition, and State B and State B' would be motivationally pushing one to repetition. In effect then, entrenchment is not a particularly difficult state to reach through learning. What about other acquired behaviours: zoophilia, fetishes, pedophilia, pornography-addiction, homosexuality, journaling, golf, running, musicianship, etc? Surely these also would be amenable to similar learning processes, and eventual entrenchment.

Now the question is: how do beliefs link to these learning sequences? In the absence of restraints (peer, parent, cultural, legal, religious) is it only strong beliefs, or better beliefs, that can inhibit the learning process for maladaptive or inappropriate outcomes? An adolescent experimenting with smoking might believe simultaneously (1) smoking is wrong, disgusting, shameful, and (2) smoking is exhilarating, pleasurable, and status-enhancing. He believes both basically at the same time at the State A level. So, two or more beliefs are in competition. At the State A' level he would believe that smoking is good in that it reduces tenseness offering relief and comfort; plus it keeps weight in check. At the State B' level it would be logical to assume a belief that smoking offers potential exhilaration and grief reduction.

For purposes of conjecture consider that the novice smoker's internal competition is at an intuitive level: System 1 (for Kahneman, 2003), Associative processing (for Sloman, 2002), and non-reflective beliefs (for Barrett, 2009). The competition is within the primary system rather than between systems. It is easy to infer that the smoker could react intuitively with the belief that smoking is shameful, or smoking is disgusting, with disgusting long term effects (call it System 1a). Also, it is easy to infer that the smoker could react intuitively with the belief that smoking is exhilarating, and status enhancing (call it System 1b). This two-sub-processes approach to processing leads to competing beliefs. Deliverance is to be found in the engagement of the higher order systems: System 2, Reasoning, advanced by Kahneman (2003), Rule-Based

belief formation as advanced by Sloman (2002), and reflective beliefs as advanced by Barrett (2009, 2011). Failure to engage these higher order systems leaves the person vulnerable to lower level System 1foibles.

So what is it that stops some adolescents from becoming smokers? What blocks the learning to the point of entrenchment? *Externally*, one might argue for the importance of social constraints, legal constraints, parental constraints, a controlled environment, diminished advertising, and so on. *Internally*, it would be beliefs; it could be models (e.g., athletes, actors, musicians) who feed beliefs, or it could be educators (e.g., schools, teachers, PSAs, Medical Community) who feed beliefs, or it could be peers who feed beliefs, or it could be the religious community representatives who feed beliefs, and so on. These external and internal factors are consistent with System 2 engagement (i.e., Reason, Rule-Based processing, and Reflective beliefs). The bottom line in terms of prevention is either barriers or beliefs. Even so, one needs sound barriers and beliefs. Bad barriers can have bad outcomes. Bad beliefs can have bad outcomes. Ideas have consequences. Subscribing to bad ideas, or defective ideas, or fragmented ideas, or regressive ideas has consequences.

Action Identification Theory

Vallacher and Wegner (1985) developed a theory of action identification where actions are identified in multiple ways, and at different levels. Three processes (or principles) are advanced as in a state of interplay for drive action identification. There are lower level identities where details of an action or specifics regarding how an action is done, are in view. Higher level identities gravitate to cognitive explanations regarding why the action is done along with consequences, implications and applications. Which level do people use to identify an action,

low levels or high levels? It depends on "prepotent identity," according to Vallacher and Wegner (1987), and the three principles advanced to describe the function.

The three principles of action identification related to prepotency are as follows:

1. People have in mind an idea of what they want to do when they generate an action. What they want to do is the prepotent identity.
2. When both low level and higher level descriptors are available, expressed, or conscious, the higher level identities are prepotent, generally.
3. When a higher level identity fails, a person defaults to a lower level identity to identify an action, and that lower level identity becomes prepotent.

To illustrate from Vallacher and Wegner (1987) consider the act of phoning home. Moving a finger is a low level act; dialing the number is a higher level act; phoning home is a still higher level act. Phoning home is the prepotent action identified. Thus principles #1 and #2 are clear. Suppose the call is not connected (perhaps one is out of cell phone range, or one makes a transposed entry). The action identification now defaults to a lower level—I am dialing the phone—and that becomes the prepotent action (principle #3). The constraints of reality manipulate the action identification. It is the shift to a lower level action-identification that is particularly of interest for topics like smoking, over-eating, suicidality, homosexuality, addiction to pornography, and so on. Examining such belief-shifts helps frame the mechanics of a belief hierarchy—worst beliefs, bad beliefs, good beliefs, better beliefs, and best beliefs.

In the context of System 1 processing (cf Kahneman, Sloman, and Barrett above) and System 2 processing, it would appear that there is a shift from System 2 thinking (Reason, Rule-Based processing and Reflection) to System 1 thinking when facing constraints. Likely, the shift is from better beliefs to worse beliefs.

Of further interest, the theory does not apply to self-identification of action identities only. It seems we attribute low level and high level action identifications to others as well (Kozak, Marsh, and Wegner, 2006). Particularly interesting, the level of attribution to others may be influenced by such variables as liking, perceived victimhood, perceived suffering, and identification with the other.

The theory of action identification has merit when considering such topics as smoking, sexual orientation, suicidality, eating behaviours, and so on. What do people think they are doing (action identification) when they implement actions like smoking? And what do others think they are doing when they implement such actions? And, finally, what do we (or I) think they are doing when they implement such actions?

With respect to smoking how might a smoker label such an action? The following table contains several speculative possibilities regarding smokers' action identifications.

Table 12. Possible Action Identifications a Smoker Might Make

Low Level	-Removing a cigarette from the package -Tapping the end of the cigarette -Simulating smoking -Striking a match -Lighting up
Intermediate Level	-Having a smoke break -Completing a meal -Relaxing -Socializing -Image (Rebelling or imitating an Artist)
High Level	-Supporting an industry -Making a political statement of defiance -Keeping my diet in control and weight down for health reasons -Alleviating stress -Avoiding an old-age home (i.e., by ensuring an early death)

According to the three principles of Vallacher and Wegner (1987) a prepotent reason would likely be tied to diet control or alleviating stress. As arguments accumulate to show how reality places a serious constraint on such high level action identifications one reverts to lower level

identities—just socializing, puff patrol, having a break, a few drags, etc. As rationalizations are uncovered, beliefs shift lower. Eventually, the rationalization might lead to very low-level action identification such as: "I'm tapping the end of the cigarette to compact the tobacco." In effect, there seems to be a shift from System 2 thinking to System 1 thinking.

What about eating behaviours that are problematic? What action identifications might fit in the three levels of the table?

Table 13. Possible Action Identifications a Problem-Eater Might Make	
Low Level	-Removing food from the fridge -Pouring chips into a bowl -Placing a variety of cookies on a plate -Smelling the chocolate
Intermediate Level	-Alleviating stress -Boosting energy -Altering mood -Satisfying a craving -Minimizing a craving
High Level	-Stabilizing blood sugar levels -Preparing a meal -Enjoying cuisine -Socializing -Nurturing body and soul

A prepotent action identification like "Enjoying Fine Cuisine" when facing the constraints of reality (e.g., the scale, the obsession, the nagging parent, the friends' "Intervention," the secrecy) would likely default to a lower level action identification like "Boosting energy." "Alleviating stress," or "Altering a mood." Not recognizing the shift would be consistent with such strategies as rationalizing, projection, denial, and so on. Cognitively, these could be considered as low level action identifications. Ironically, in this case, recognizing the shift to lower level prepotent identities seems to be a high level prepotent understanding. As rationalizations are uncovered beliefs shift; but the ideal would be to ensure wise, honest, and rational shifts. Thus, one needs clear thinking, and high-level action identification, to ensure

good beliefs, or better beliefs. Again, in effect, there seems to be a shift from System 2 thinking to System 1 thinking.

What about questionable sexual practices or sexual orientations? When one adopts a sexual action, how does one identify that action? The prepotent action identification would be from a high level category, say, pursuing personal virtues, pursuing familial virtues, or it's all about the ideal of love. If one runs into reality constraints from one's family, one's community, one's psychology textbook, one's religious authorities, one might revert to lower level action identifications (e.g., loving, or following natural inclinations), or even more basic identifications (i.e., it's just caressing). At the lowest level it might simply be identified as just an outlet, or "one needs release."

Table 14. Possible Action Identifications a Homosexual Might Make	
Low Level	-Touching -Caressing -Attaining Orgasm -Physical Release or Outlets -Sharing
Intermediate Level	-Alleviating stress -Following natural inclinations -Emoting -Satisfying a craving
Higher Level	-Creating -Loving as pragmatics -Making political statements
Highest Level	-Pursuing social and familial virtues -Pursuing personal virtues -Loving as Ideal -Nurturing body and soul

Normally, one argues to maintain the higher level action identifications as prepotent causes. This raises the issue about the quality of the arguments—the rationales versus the rationalizings. Again, the bottom line is beliefs, and the warrant for such beliefs. And again, in effect, there seems to be a shift from System 2 thinking to System 1 thinking. If there are drivers from

System 2 level thinking to System 1 level thinking, there is a clear need for enhancing system 2 level thinking.

Action identification theory is important for the current investigation on three levels—a psychological level, a social level, and an academic level. On the psychological level we are interested in "what people think they are doing when they do something," particularly something that is controversial, like smoking, adopting homosexuality, eating-problems, and so on. In essence, what do they believe? On a social level we are interested in what social critics, social commentators, and social networks (whether families, peers, coworkers, etc.) offer as "what they think the other is doing when the other does something." On an academic level, there is an interest in the psychological level and the social level, but also, the arguments for what people are doing. Are the action identification claims good claims? Are the arguments sound? Or are they rationalizations? Since there are competing high level action identifications, and shifts between levels of action identification, the fundamental question is: which action identification has the better warrant? Which belief has the better warrant? These latter questions are System 2 level processes, and important considerations for those shifting beliefs downward.

Ironic Effects Theory

This theoretical position advances the notion that good intentions (and actions) actually may predispose one to bad consequences. Basically, "…the use of mental control can backfire…. A person innocently engaged in what seems to be a program of self-improvement may unwittingly create the very psychological problem he or she is working to overcome (Wegner, 1997, p. 148)."

The theory is premised on two processes: an operating process and a monitoring process. The operating process is intentional, conscious, and effortful—a mind filled with thoughts that facilitate success. The monitoring process is largely unconscious—a mechanism searching for signs of failure in order to implement the operating process. The monitoring process, in the presence of certain conditions, can overwhelm the operating process leading to failures of the intended control—and it is an ironic overwhelming. Wegner illustrates our common observation as follows: "Why is it that trying so hard sometimes seems to guarantee not just a failure of control but its ironic reversal? It is not just that we cannot sleep, for instance, or that we cannot stop thinking about food when on a diet; the problem is that the more we want to sleep or to banish food thoughts the more we fail (Wegner 1994, p 34)." What is it that distinguishes times of effective control from times of poor control? Capacity?

Capacity! When capacity is reduced (i.e., the conscious capacity for the operating process), perhaps by simple distractions, or anxiety, or stress, then problems arise. When capacity is reduced by cognitive load then problems can arise. When capacity is reduced by time pressures, or a sense that one "must" succeed, typically, problems arise. The problems that arise, however, are not necessarily just simple failure. As Wegner notes "…the intended control does not just reduce to some uncontrolled baseline or zero level. Rather, mental control exerted during mental load will often produce ironic effects, resulting in mental states that go beyond 'no change' to become the opposite of what is desired. Desired happiness becomes sadness, desired relaxation becomes anxiety, desired interest becomes boredom, desired love becomes hate, and so on (Wegner, 1994, p 35)." In effect, the unconscious monitoring process is intruding into the conscious operating process domain; and since there is a capacity problem interfering with the operating process, the monitoring process overwhelms the operating process.

Wegner (1994) offers interesting parallels from history to support his theory. He considers phenomena like divining rods, Ouiji boards, and automatic writing as examples of ironic effects where movement opposes will. This evidence he offers, and argument he advances, carries weight—he is convincing here. These phenomena are quite illustrative of his notion of ironic effects.

He also considers Freud's notion of the "counter-will" where the exact opposite of intention is the effect. Indeed, the notion of "weak-will" actually is reframed by Freud as a "perversion of will." Intentions and actions, surprisingly, and ironically, often do not align.

Finally, Wegner acknowledges the work of Baudouin in 1921 on "the law of reversed effort," which again stresses the peculiar phenomenon of counter-intentional effects. Thus, the idea of ironic effects is not novel, or original to Wegner; the idea does have intriguing substantive precursors. And the notion is sufficiently compelling to warrant consideration in relation to the analogy of smoking and homosexuality, particularly with respect to the quitting process.

One interesting application that Wegner points to is the study by McFall (1970) on quitting smoking. Is there a difference in quit rates for smokers who count the number of cigarettes they smoked versus those who count the number of times they thought about smoking but didn't? In the former case the focus is on the bad behaviour; in the latter case it is on the good behaviour. Although the sample was small (N=16) and the design was the typical in-class university course experiment, the effects were dramatic. Smoking rate increased over baseline for those counting cigarettes smoked, but decreased for those counting cigarettes not smoked.

Applications to areas like racism, sexism, ageism, and so on, would suggest that the formulation of one's attention can be critical. Similarly, applications to problematic sexual

thoughts, study habits, suicidal ideation, character education, and so on, would argue for the need for a carefully crafted approach. The more one tries to quit smoking, to quit homosexuality, to quit over-eating, to quit suicidal ideation, the more likely one is to fail given ironic effects mechanisms. Implications for parents, educators, and therapists are profound.

In terms of belief-shifts, the belief that one can change can be nullified, or circumvented, by the action of trying to change. In terms of System 1 and System 2 level beliefs, it is conventional to hold that System 2 level beliefs (reason, serial processing, rule-based judgments, and reflection) can and will trump System 1 level beliefs (the intuitive and associative beliefs at the level of habit and automaticity). However, these ironic effects that Wegner flags suggest that System 1 level beliefs can overpower System 2 level beliefs, at least as far as belief-based behaviour is concerned. The lesson to be gleaned here is that one who wants to change needs a wise change protocol.

Darkened-Mind Theory—Psychological

This thinking posits that a certain aspect of mind can fail to function in which case the subsequent actions are flawed. In a sense, it aligns with Plantinga's (1993a, 1993b) notion of warrant requiring "proper function" to attain a level of adequacy for the support of belief. A cognitive architectural component that is not functioning, or not functioning properly, is not likely to provide a sound foundation for belief or confidence. For example, in states like sleep-walking, somnambulism, hypnotism, altered states like religious ecstasy or trance, drug-induced states, and so on, any beliefs advocated, or truth-claims made, would be suspect. In fact, it is likely that many of the behaviours and beliefs would have the earmarks of irrationality, or "stupidity." In such cases it would seem like important critical functions are suspended—a part of the mind is "missing in action." Such dispositional atrophy would "darken" judgment, and support an inference of a darkened mind.

Less striking, but possibly more important, examples emerge in social influence research—research that addresses the power of situational factors as opposed to dispositional factors in the generation of "evil" behaviour (Zimbardo, 2004). Zimbardo lists a number of situational factors that one would be well advised to consider as possible motivators: "…role playing, rules, presence of others, emergent group norms, group identity, uniforms, anonymity, social modeling, authority presence, symbols of power, time pressures, semantic framing, stereotypical images, and labels, among others (p. 47)." These all have the power to push. If they push one into faulty constructions, flawed inferences, premature conclusions, bad behaviour, and so on, it is a condition easily characterized as a "darken mind."

Something as simple as inducing a small "first step" can be quite powerful. Zimbardo (2004) lists ten ingredients in a recipe for apparent evil compliance in Milgram's (1974) studies of obedience to authority where subjects can be induced to commit to serious levels of electric shock to their fellow human beings. Ingredient #7 is: "Starting the path toward the ultimate evil act with a small, insignificant first step (only 15 volts) (p. 29)." People easily agree to a small initial step like a mild electric shock, a few puffs on a cigarette, or one or two cigarettes. They can agree to a simple sexual caress, or curious prod, a glance or two at pornography. But small steps, like multiplier effects, can cascade.

People agree to minor things, which then seems to draw them more easily in to subsequent commitments to increasingly major things. Wegner (2002) uses such research to explain compliance even in such a phenomenon as hypnotism. He refers to the early study of compliance by Freedman and Fraser (1966) where researchers ask home owners for permission to place a large "Drive Carefully" sign on their lawns. Most home owners refuse. However, those who were first asked to display a small "Be a Safe Driver" sign in their windows, and agreed to do so, were more likely to agree to the large lawn sign when asked later. Progressive

sequential involvement is the proverbial story of the camel getting his nose in the tent. The first cigarette is a small step into a big tent. The first sexually curious activity is a small step. These are easily situated in the normal yet dark side of curiosity (Kashdan, 2009).

Even an organization as sinister as the Ku Klux Klan seems to have had innocuous roots neither political nor racial--roots in small first steps. It was rooted in "fun," initially. "At first they played jokes on one another and then on members of the public in general. Then gradually they began to aim their pranks at black people (Baumeister, 1997, p. 239-240)." Baumeister's speculations are a reasonable reconstruction of how pranks escalate to cruelty as a function of small initial steps, and then step-by-step social interactions. Seemingly decent people can be led to do indecent things by small steps (Freedman & Fraser, 1966) by authority figures (Milgram, 1974), by rewards, by good intentions, by egotism, by curiosity (Kashdan, 2009), by simple fun (Baumeister, 1997), by time pressures (Zimbardo, 2004), and by a host of other innocuous situational factors.

The social influence research offers a mechanism to explain the progress from "commitment to do the innocent small things" to "commitment to do the stupid" or evil things. Of interest, the ten ingredients for change that Zimbardo (2004) lists in discussing Milgram's research may have implications for dispositions related to smoking, over-eating and homosexuality. Consider the information in Table 15.

Table 15. Zimbardo's (2004) Ten Ingredients For Implementing Seduced Behaviour.

Milgram	Smoking	Eating	Homosexuality
Cover Story -Present an acceptable rationale or justification -An Ideology	-artist -rebel / radical	-genes -slow metabolism -models	-genetic / hard-wired -born that way -natural/normal -models
Contract obligation	-peer acceptance	-one must get nutrition	-clubs, -parent groups -counseling groups
Meaningful roles	-artist -rebel / radical	-cook, chef, waiter -consumer, shopper	-mate, spouse, partner, parent, priest,

		-connoisseur	
Basic rules -Justify mindless compliance			-love, pleasure -fidelity
Alter semantics of act -hurt to help	-calming -image-enhancing	-calming, nutrition	-love, fidelity
Diffuse responsibility -authorities	-to advertisers -to peers / parents	-advertisers, magazine -fast foods -cafeterias	-biology -parents
Small innocuous first step -start	-a few drags -a butt -just one cigarette	-snack -diet coke	-play, fun -pleasure
Gradual steps -progress	-1, 5, 10, a pack -two packs	-graze	-experiment, -try it,
Gradual shift of image -good to bad	-health damage -loss of stamina -social ostracism	-overweight -obese -bulimia	-first fun and affection -then problems (social, health, moral…)
Exits costs -high	-physical and psychological addiction -social networks	-starvation -time constraints -ironic effects	-physical and psychological addiction -social networks -therapeutic rejection or peer rejection[1]

Dissonant Thinking Theory

Dissonant thinking can be approached in either a *medicalized* fashion (focusing on the pathological aspects of thinking problems, like schizophrenia, obsessive-compulsive disorders, suicidality, pathological addictions, and so on), or a *normalized* fashion (focusing on the thinking problems that seem to periodically, and developmentally, pester all humans). Both approaches are consonant with dysfunctional thinking; both approaches aim for better thinking, better beliefs—belief-shifts. Considered here in the *medicalized* genre is that which is aligned with learning, that is, psychological dysfunctions as opposed to biochemical dysfunctions. Belief shifts that have a biochemical underpinning, though important, are beyond the scope for consideration at this point.

[1] Goldberg (2008) cites two case studies where one senses the "exit costs" from either pressure from a homosexual "peer group" in the case of Jeff who was subject to undue pressure, or pressure from the therapist in the case of J (again undue pressure). For struggling adolescents the "exit costs" were just too high.

A medicalized approach.

This framework closely aligns with the smoking aspect of analogical thinking because it targets substance use, abuse, and addictions. This medicalized approach to thinking problems, as related to addictions, has been termed "addictive thinking" by Twerski (1997). An Addictive Thinking framework also has merit in the consideration of a sexual orientation if there is a case for analogizing sexuality and addiction, and if there is a case for treating a sexual orientation as learned. The approach is based on Twerski's (1997) informative analysis of the self-deception that happens in the thinking of the addict, particularly the alcoholic, but not just the alcoholic. It applies to the pre-alcoholic and the co-dependents as well.

The first point to make is that Twerski (1997) contends addictive thinking is a state that precedes the use of chemicals (Time 1) as well as a state that is a consequence of using chemicals (Time 2), albeit with perhaps some differing characteristics. The addictive thinking is defective at both points in time. Thus, addictive thinking can exist entirely independent of actual substance use or abuse. As such, the ideas and principles can be applied to a variety of behaviours—both normal and abnormal—for example, sexual curiosity, pornography, zoophilia, pedophilia, video gaming, golf, and so on.

Basically, for Twerski, addictive thinking involves self-deception. There is an apparent "blindness" to one or more of the following: logical arguments, logical fallacies, simple reason, harm, others, and rules. This self-deception is achieved via mechanisms and practices of denial, rationalization, and projection. It is characterized by delusions, poor self-esteem, a sense of omnipotence, lying, and more—qualities that often indicate faulty perceptions and a disconnect from reality.

The second point is the process problem. There is a process problem where the addictive thinker begins with the conclusion, and then builds a case for it. The thinking is not deductive,

inductive, or abductive; rather, it might be termed, facetiously, "conductive." That is, there is: (1) a "con-game" going on with one's self, and others, being conned by the self, the addictive thinker, (2) and addictive thinker acting like an orchestra conductor, organizing all the instruments, the practices, the score, for an end product and performance that suits the addictive thinker, and (3) an invisible current, or covert current, flowing along the electrical conductor that can be quite shocking, at times. The "con," the orchestration, and the invisible current capture, figuratively, such *conductive* thinking.

The third point is the fundamental importance of self-esteem. Addictive thinking is closely allied with major problems in self-esteem. The self-deception is often designed to protect the self via denial, rationalization, and projection. More striking is the creation of a grandiose self for public consumption.

A key feature of Twerski's approach is that change is possible. There are times when people indicate they "came to their senses." Change is often a function of a change in worldview. That worldview change might involve the acknowledgement of a higher power as in the Twelve-Step programs. At times it involves a change of goals. As Twerski puts it "To effectively prevent chemical use among young people, we would have to establish (1) ultimate goals in life other than sense gratification and (2) tolerance for delay. Our culture is not likely to embrace these changes. Instead our culture embraces addictive thinking (1997, p. 16)." Often, it is only when a particular change-point is encountered—for example, what has been termed "rock-bottom"—that change occurs.

The "rock-bottom" experience! This is the often the pivotal point that pushes one to change a thought system—change a belief. Can such experiences be crafted? Yes, if one refuses to be an enabler, a co-dependent, or a gnosisophobe. The prospect of a divorce, loss of a job, hallucinations, looming death, can be rock-bottom change-points for some, and if crafted by

concerned-others, can push one to choose change. What must change is the thinking, the worldview—and then the beliefs.

Other change agents are seen when one continues to offer evidence, argument, and hope. These can chip away at defenses. A hair in the eye, a stone in the shoe, a nose in the tent, an acorn in the soil, can seem like small things for much of the time. But the end thereof can be a beginning. Belief-shifts are possible.

A couple of additional points from Twerski (1997) are worth noting—points related to making mistakes and expressing anger. He comments on the reluctance to admit errors or mistakes which is characteristic of addictive thinking. In addictive thinking there is a perception of being right. Twerski writes: "One of the features of addictive thinking is the addict's perception of always being right. Many of the other traits prevalent in addictive thinking—denial, projection, rationalization, omnipotence—are brought into play to bolster the insistence that the person has always been right (1997, p.75)." The explanations they offer can sound logical, and reasonable or possible, but the explanations are usually, merely ingenious rationalizations and projections.

The second point is anger. Twerski proposes three phases of anger: the first phase is the feeling of anger (anger proper, or normal anger); the second phase is the reaction to anger (he calls this "rage," and one suspects it is disproportionate to the trigger); and the third phase is the retention of anger (he refers to this as "resentment"). Those involved with addictive thinking can have severe rage problems, and carry resentment regarding injustice, offence, humiliation, constraints, controls, etc.), but the problem is typically linked to their distorted perception—that is, basically distorted belief. Smokers can feel an injustice, or humiliation, in being sent outside to smoke (rather than focusing on the reasons for the policy). They might then label those on the inside as "wimps" or "holier-than-thou, goody two-shoes," as a reaction. Similarly,

homosexuals can feel an injustice or humiliation from a culture that reacts disapprovingly to homosexuality. "Homophobia" may be a formulaic expression offered as a manifestation of the anger—anger related to fragmented perceptions.

Where some of Twerki's arguments fail, or require questioning, are with respect to adoption of a disease model for an addiction like alcoholism. It is premature to reject the character model. There is room for the character model at the table. Twerski (1997) writes: "People who think of addiction as a moral failure, rather than a disease, see failure to control drinking or using drugs as a character weakness (p. 72)." Actually, there is another possibility. What he terms "character weakness" can be a "character construction," the product of a learned condition due to poor choices, or failures, early in the learning process. The moral failures were much earlier in the learning process, when cognitive resources were limited, or immature.

Moreover, one could make the case that what Twerski calls "addictive thinking" is primarily a functional label when one is dealing with alcoholism. Such addictive thinking is simply faulty thinking and would apply quite easily to the examination of all learning processes. Would it be better termed "distorted thinking" or "dysfunctional thinking," or even "busted thinking" …? If these more descriptive labels fit, then the construct could easily be applied to the analogies under consideration here—smoking, homosexuality, suicidality, eating-problems, and so on. What are they thinking? Likely, they are thinking something along the lines of self-deception—denial, rationalization and projection. And their beliefs are distorted; belief-shifts would be in order.

A normalized approach.

Framed as distorted thinking, or cognitive dissonance, as opposed to the *medicalized notion* of "addictive thinking," such thinking is common. Festinger (1957) proposed a theory of cognitive dissonance—an unpleasant feeling-state that exists when there is discord, or better,

inconsistency, in our cognitively-based ideas, beliefs, or thoughts. This would be a valuable state if it pushes one to resolve the discrepancy by seeking the truth. It could be a dysfunctional state if it pushes one to merely deny the discrepancy, or rationalize the chosen path to reduce the discomfort.

An example of cognitive dissonance relevant for this text is related to smoking. The dissonance is evident in the example given by Tavris and Aronson (2007) with respect to positions that are "…psychologically inconsistent, such as 'Smoking is a dumb thing to do because it could kill me' and 'I smoke two packs a day.' …the most direct way for a smoker to reduce dissonance is by quitting. But if she has tried to quit and failed, now she must reduce dissonance by convincing herself that smoking isn't so harmful, or that smoking is worth the risk because it helps her relax or prevents her from gaining weight (and after all obesity is a health risk too), and so on (p. 13)." The elimination of the cognitive dissonance can be a good thing or a bad thing depending upon the truth value or the merit of the outcomes. Whether good or bad, cognitive dissonance and dissonance reduction, both seem to be typical and normal processes.

Normal people can be led to do things that society considers to be abnormal (e.g., see the obedience to authority studies of Milgram, 1974). Individuals can face challenges that create dissonance, and they end up doing things, when trying to reduce dissonance, that are clearly out-of-character, or even beyond their normal ethical standards. The abnormal can seem trivial. One wonders if even "monsters" can be seen as examples of the "banality of evil" (Arendt, 1963). Again referring to Tavris and Aronson these researchers comment on the number of perpetrators of evil (see p. 197-208) and their claims that they were doing it for "good," typically for the "good of their country." The rationalizations are strong, and common enough to be considered normal, though certainly not moral in various religious worldviews.

Dealing with cognitive dissonance has been experienced by everyone at some point in their development. While Tavris and Aronson (1997) tie such mistakes (and the failure to own up to such mistakes") to cognitive dissonance theory they also link such failures to self deception, pride, prejudice, confabulated memories, and so on. In this formulation bad thinking seems to be normal and pandemic rather than non-normal and pathological.

There are a numerous cognitive processes that can impel one towards bad thinking, irrational, or self-deceptive, positions—positions that strive to avoid dissonance at some level. Baron (2008) explores a number of these processes. For example, primacy effects can bias one to a position, or argument, encountered first. Such a bias can be a problem for juries; the first argument they hear sets up a bias. It might even be a variant of the Iago effect; Iago gets his malevolent message to Othello, and then a confirmation bias sets in. Similarly, early hypotheses can push one to the "myside bias" (or commitment to a position) where one seeks confirmatory evidence rather than disconfirming evidence and argument. A failure to adopt open-mindedness, or a two-sided protocol (as in the competing-hypothesis-testing of science), can be a strategy to avoid dissonance and ultimately self-deceptive. Yet, even with a two-sided investigative protocol built into a system (as in juries who hear both sides of the issue, or scientific research where competing theories are tested), both primacy effects, and recency effects can still contribute to a bias.

Further, even "neutral evidence" can lead to bias, or rather strengthen an existing bias. Baron (2008) presents a study by Lord, Ross, and Lepper (1979) where subjects who either favoured or opposed capital punishment for its deterrence effect were tested. These two groups read two reports on evidence for deterrence: one pro and one con, albeit fabricated evidence, yet it appeared scientific. The evidence was basically constructed to be neutral. "The results were manipulated so that only the first report showed deterrence for half the subjects and only the

second report showed deterrence for the other half. The effect of each report on the subject's belief was stronger when the report agreed with the belief than when it did not. The authors call this *biased assimilation* of evidence.... In the end, subjects *polarized*: that is, they became stronger in their initial beliefs, regardless of their direction. If anything, mixed-evidence should have made subjects less sure of their beliefs (p. 209-210)." It didn't. It made them more sure of their initial belief.

This is something like a variant on the "When Prophecy Fails" phenomenon (Festinger, Riecken, & Schachter, 1956). When a prophecy fails the believers become more entrenched in their beliefs rather than abandon their beliefs. Such belief entrenchment can be a problem in many areas: smoking, drug use, gambling, excessive eating, uncontrolled shopping, pornography, pedophilia, and so on. Yet, at the same time belief entrenchment can be valuable regarding attributions to effort, musical ability, artistic flare, mountain climbing, and completing a marathon. The judgment regarding the value of the entrenched belief depends on the particular belief.

Other processes facilitating irrational belief persistence that Baron (2008) considers are worth elaboration. Two categories may be considered here. Both have value for framing cognitive dissonance with respect to topics like smoking, eating problems, and sexual orientation. First, there are the "beliefs about thinking" where one might believe: (1) "commitment" to a belief is admirable, a form of persistence in spite of problems, or (2) the "expert," who has a side already staked out for a belief, is superior to the multiple-perspective-taking researcher, or (3) the "advocate" (as in the lawyer) is more of an ally than the ivory-tower thinker. These beliefs about thinking are heuristics that can interfere with better thinking. Applied to smoking, for example, an adolescent's peers can serve as the advocate, the expert, the admirably committed hero, and push beliefs. Applied to homosexuality, for example, the

APA can serve as the advocate, the expert, and the admirably committed authority, and push beliefs. What is really needed is the two-sided protocol and multiple-perspective-taking. That is, what is needed is the scientific approach. Not needed are processes like "selective justification," "belief-overkill," "elastic justification," "accommodation" to others, and even "groupthink" (see Baron, 2008, p. 219-225).

Second, there are the effects of desires on beliefs, or "distortion of beliefs by desires." As potential influences on beliefs, Baron presents the following: self-deception, wishful thinking, dissonance resolution, desire to be viewed as a good decision-maker, and desire to be viewed as a good belief-former. Striking here, is Baron's (2008) concluding inference after reviewing a series of supportive empirical studies: "When a person runs into evidence against the belief, evidence suggesting that a bad decision may have been made, the person changes his beliefs about his own desires ('I must really have wanted it, or I wouldn't have done it for so little money,' or 'put in so much effort,' and so forth). These beliefs about desires, in turn, may influence the desires themselves, as we have just seen (p. 219)." In this formulation, it seems beliefs precede desires. Suppose one has the belief that they are of a heterosexual orientation; this then precedes the subsequent desire for a heterosexual relationship and orientation. Later one runs into evidence challenging such a belief/desire (say prepubescent or pubescent same-sex, sexual play, or simply sexual arousal coterminous with the presence of same-sex playmates). These events could serve to generate a recency effect, a source of dissonance, or a subsequent biased-selection protocol for new experiences. What happens? What can be inferred from Baron is change: "When a person runs into evidence against the belief, evidence suggesting that a bad decision may have been made, the person changes his beliefs about his own desires .... (2008, p.219)." If Baron is right, this is telling: we can change our beliefs about our desires. In fact, with Baron, there seems to be a reciprocal relationship with, firstly, beliefs

influencing desires, and then desires influencing beliefs. In effect then, if we change our beliefs we might very well change our desires. With respect to the acquisition of a heterosexual orientation beliefs come first; they lead to desires; if the beliefs are not thwarted by evidence, argument, dissonance, recency effects, elastic justification, groupthink, and so on, then the heterosexual orientation (belief) is firmed up, and the desires follow. If dissonance is generated by various encounters, beliefs can change; and then changed desires can follow.

With respect to smoking the application is less clear. Nevertheless, we can detect the fact that one has beliefs about smoking at the seminal stage (e.g., I'm a rebel, smoking will keep my weight in control, smoking gives me a hit, smoking is the price-of-admission to a desirable peer group, etc.). The beliefs are formative of an identity; then, the beliefs are formative of the desires that follow.

With respect to eating problems, what happens? One believes that one is a normal-eater or an over-eater; dissonance follows. Desires to eat follow. The strongest desires to eat follow the principal orientation. Unfortunately, dieting doesn't change the belief; one still believes that one is an over-eater by orientation, and the fight against desire will, more often than not, fail. Change the belief—the orientation—and the changed desire will follow. How does one change an orientation? Worldview change! Paradigm shift! See the light! Adopt a new identity! Conversion experience! All of which involve the learning of a new identity. All of the routes involve choices. If there is an actual belief-shift learned, the shift in desire will follow, if Baron (2008) is right.

As discussed in Chapter 4 change can be a slow and generally tedious process. With respect to a new eating orientation, one needs a new set of competing causes: *material* causes (e.g., healthy foods as opposed to fast-foods, etc.), new *formal* causes (i.e., exercise, portion size, routines, habits, automaticity, strategies, and life-style models) and new *final* causes (i.e.,

health, energy, athletics, appearance, holiness, freedom, your child's image of you, etc.…). A changed mind, by choice!

Either way—whether bad thinking is framed as *medicalized*, that is, "addiction thinking," or as *normalized*, that is, normal cognitive dissonant thinking—the need for change is evident. There is a need for: (1) putting multiple-perspectives and hypotheses on the table for testing and evaluation, (2) developing a comfort level for admitting mistakes, and (3) developing self-regulation strategies for dealing with mistakes. All three support belief-shifts. In all three, better beliefs are better, in which case belief-shifts to better beliefs is better. Ultimately, belief matters!

Ideomotor Action Theory

This theory addresses a unique aspect of ideas, or beliefs, and consequently belief shifts. Initially, in ideomotor action theory the primary interest is on the functional relation between a belief/idea and subsequent action. It is claimed that an idea, any idea, actually impels one to action associated with the idea. The idea triggers action. This is a type of action that is distinct from action after deliberation. Ideomotor action is independent of deliberation, or it precedes deliberation, or it is altered by deliberation.

The theory originated with Carpenter (1888/2010); it was addressed and extended by James (1891/1952); and, it has re-emerged in the current discussions of the problem of free will (Wegner, 2002), and responses to Wegner (see Mele, 2009). Carpenter was interested in esoteric behaviours linked to the popular fascination with spiritualism (e.g., automatisms), and how to explain them in psychological terms. As Wegner writes of Carpenter: "In essence, he said the idea of an action can make us perform the action, without any special influence of the will

(2002, p. 121)." This is more than the notion that ideas have consequences—indirect causation. Rather, the idea itself was viewed as having a motor effect in line with direct causation, bypassing consciousness, intention, and will.

However, if ideas regarding an action lead to the inception of the action, why don't all ideas so function? That is the obvious problem readily raised in many considerations of Carpenter's claim. In fact though, one can conceive of the possibility that ideas do impel, it is just that, as James (1891/1952) argued, the impelling can be blocked.

Wegner noted that James accepted the theory and added to this theory to help explain why all ideas do not lead to the imagined action. Essentially, there can be competing ideas which serve to block the motivating idea. It is the absence of competing ideas that frees the person to follow the motoric impetus of an idea, independent of consciousness, and perhaps, will. The absence of a competing idea might occur in hypnotism, for example, or in automatic writing, so that the idea does clearly lead to the action.

An absence of ideomotor action can occur in the more mundane behaviours as well. To illustrate the point, James uses the graphic example of getting out of a warm bed on a very cold morning:

> "Probably most persons have lain on certain mornings for an hour at a time unable to brace themselves to the resolve. We think how late we shall be, how the duties of the day will suffer; we say, 'I must get up, this is ignominious,' etc.; but still the warm couch feels too delicious, the cold outside too cruel, and resolution faints away and postpones itself again and again just as it seemed on the verge of bursting the resistance and passing over into a decisive act. Now how do we ever get up under such circumstances? If I may generalize from my own experience, we more often than not get up without any struggle or decision at all. We suddenly find that we have got up. A fortunate lapse of consciousness occurs; we forget both the warmth and the cold; we fall into some revery connected with the day's life, in the course of which

> the idea flashes across us, 'Hollo! I must lie here no longer'—an idea which at that lucky instant awakens no contradictory or paralyzing suggestions, and consequently produces immediately its appropriate motor effects (1891/1952, p. 792)."

James goes on to consider deliberate action where reasons, motives, indecision, impatience, "the dread of the irrevocable," equilibrium, testing our reasons, and so on, come into play. What gets masked in this higher level processing is the fascinating notion that an idea itself impels behaviour. Ideas are ideas-in-motion!

So, two important issues surface here. First, how the idea is attained is more than just a curious interest, it is an interest with implications. We know ideas have consequences at a cognitive level, but with ideomotor action theory we see implications at a precognitive motoric level; both the cognitive and the precognitive can lead to behavioural consequences. "How does one obtain an idea?" This is a question with comparable weight to "How does one obtain a virus?" At the very least caution is an offshoot.

A few possible options for the acquisition of an idea follow: (1) it is *put* there (by society, books, parents, peers, etc.), (2) it is *assimilated* by the self into consciousness following a choice of some sort, (3) it is *sought* via a reasoning strategy and then placed onto a table for rational consideration, (4) it is *entertained* on the couch of one's mind by the curious side of the self, (5) it is *dragged* into consciousness as the baggage, or spandrels, of other thoughts, (6) it emerges from induction, abduction, or scientific experimentation, model building or theorizing, (7) it emerges from analogizing, and (8) probably many other sources. In terms of System 1 and System 2 level thinking, the idea could be Intuitive (Kahneman, 2003), Associative (Sloman, 2002), non-reflective (Barrett, 2009), or a downshifting from System 2 to System 1. The notion of an idea-in-motion calls for careful, critical evaluation.

A further issue addresses where one situates will and choices in the process of acting on a belief or idea whether prior to deliberation or not. Normally, choice functions in various aspects of acquisition (initiation, rumination, evaluation, experimentation, exploration, etc.), and "different calibers of choice" at these various choice-points makes sense. With acquisition, choice functions as a critical sentry to evaluate ideas, or pursue ideas. One distinguishes between the choice-to-acquire the idea (cognitive), the choice-to-act given the idea acquired (cognitive), and the idea-in-motion (ideomotoric). When the idea is set in motion via this ideomotoric mechanism there is no choice-to-act initially; however, there are prior and subsequent choice-points that can facilitate or block the idea-in-motion. Given the different routes to acquisition (e.g., curiosity, baggage, and entertainment), the caliber of choice at such choice-points would vary considerably.

Ideomotor action does not negate will and choices; rather it is positioned with will and choice. To illustrate this claim, it is reasonable to assume a choice may be involved in entertaining the idea of an action. Some thoughts (ideas) are spontaneous, others we choose to entertain, or choose to construct, or choose to defend. An idea, whether spontaneous or constructed, sets implementation in motion according to the ideomotor theory. But this idea-in-motion is contextualized by choices with all the issues of the various calibers of choice, the developmental sequences of choice, and the critical feature of choice-points. It could appear that our will, our intentions, are not involved, but this is only at the ideomotor level.

Applying this theory to various behaviours of interest is intriguing. In smoking, we see that the very idea (thought) of smoking would be impelling one, via motor planning and action, to smoke at a seminal stage. Similarly, the very thought of eating would be impelling one via motor planning and action to eat. The very thought of sexual activity would be impelling one via motor planning and action to implement that sexual activity. If so, it is easy to suspect ideas can

be dangerous, especially when there are no competing ideas—forthcoming, permitted, or explored. The idea impels successfully when there is no competing idea, a weak competing idea, or a strong competing idea that is denied, suppressed, repressed, or rationalized.

What might be consistent with a loss of, or an absence of, competing ideas? Things like fatigue, or chance, or regression along the lines of action identification theory (Vallacher & Wegner, 1985, 1987) could contribute to a loss of blockage. Suggestion (as in hypnotism) can nullify blockage from competing ideas. Suppression can nullify the blockage of competing ideas. Baumeister's four sources of evil (gain, egotism, idealism, sadistic pleasure) might nullify blockage from competing ideas. Failure to engage System 2 level processing (Reason, Reflect, Rules), whether the result of heuristics, biases, or psychological constraints, could release System 1 thinking, dysfunctionally. What is needed is belief shifting. Belief shifts via cognitive interventions like rational argument, and reflection, to deal with rationalization, denial, suppression, or bad ideas, could implement blockage for the bad ideas-in-motion.

The key point to draw from the theory is that ideas impel action, and may in fact be viewed as synonymous with action-initiation. Choice comes into play. There seems to be at least two obvious choice-points: first, in choosing to entertain the idea (either initially in bringing it into consciousness, or subsequently keeping it in consciousness); second, in choosing to discard, or disregard, competing ideas, and veto-arguments—a form of rationalization.

Philosophical Thinking – Underpinnings of "Bad" Beliefs

Philosophical thinking is broad. It encompasses philosophical systems, and it encompasses philosophical aspects of the sciences, for example, the worldview of Naturalism.

And it encompasses the religious side or worldviews. Hence several models are addressed here as underpinnings of "bad"[1] belief.

Plantinga's Philosophical Model

In a philosophical framing of the issue of problematic beliefs, why do we at times fail to self-regulate our thinking, and behaviours, in a manner that leads to good ends? Two answers offered by Plantinga at this point are: (1) simply bad beliefs (i.e., beliefs that lack adequate warrant) which then would logically lead to "loose ends," and (2) bad architecture (i.e., a defective neurological or cognitive infrastructure generating brains/minds that are not functioning properly), which in turn leads to faulty beliefs. This philosophical position has been addressed by Plantinga (1993a, 1993b).

Plantinga's philosophical position addresses, on the one hand, the notion of "warrant" (the support for a particular belief, and one might add "the consequent act"). On the other hand, he addresses the notion of "proper function" (assuming the underlying architecture which supports warrant—brain, and perhaps, mind and cognition—is working according to a design that accords with access to knowledge and truth). Plantinga (1993b) presents his basic claim quite simply: "As I see it, a belief has warrant if it is produced by cognitive faculties functioning properly (subject to no malfunctioning) in a cognitive environment congenial for those faculties, according to a design plan successfully aimed at truth (p. ix)." In addition to a "presupposition of reliability" (Plantinga, 1993a, p. 214), there are qualifiers, or caveats, such that there is a need to acknowledge (1) co-existing plans (what he terms the design plan versus the max plan), (2) by-products, (3) functional multiplicity (4) purpose versus design, and (5) "trade-offs and compromises" (See Plantinga, 1993b, p. 21-40) as relevant constructs impacting belief.

[1] At this point "Bad" is in quotes to indicate it is not an appropriate descriptor in some perspectives: ethology, naturalism, some religions, some ideologies, etc.

Here worth noting is the issue of unintended, and undesirable, by-products. That's a negative by-product! Factors which could lead to unintended by-products might be fatigue, stress, hormonal rhythms, illness, emergent activity-switching, and so on. These may be correlates of proper function, but it is not the function one intends with respect to attaining truth, or proper ends.

Applied to failures to stop smoking, there are two considerations related to by-products. First, such sources of failure-to-quit can be viewed as a by-product of a failure to self-correct early in the learning sequence, when self-correction is pitted against weak alternative pressures. That is, when self-correction would be easy. This is a negative consequence of a positive belief—the belief one can choose to do a particular thing. A by-product in believing one can choose to smoke is the belief one can choose the alternative: to not smoke. But the smoker has missed the importance of the changing caliber of choice over time. A bad belief as a by-product of a good belief! Second, and somewhat related, a by-product of a learning sequence is habit formation. A bad effect can emerge as a by-product of a bad-belief-based behaviour!

Then there is functional multiplicity. When a structure is capable of functioning properly, but does not function in a beneficial way according to the design plan, due to some "take-over" of the multiple-functionality in the design plan, there is evidence of improper function at some level, and, thus, unwarranted beliefs.

With respect to failures to stop smoking, functional multiplicity could be operative in lung functions (intake of oxygen, filtration of ambient air particles, dispersion of by-products like carbon dioxide). The lungs were not designed to smoke. The intake of nicotine was not part of the design plan but lungs acquire "pseudo-value." This functional diversity facilitates biochemical effects, related to mood, dietary control, and then addiction given enough exposure. As well, this functional diversity leads to health problems given the filtration mechanisms of the

lung and the accumulations of smoking by-products. This functional diversity is conducive to supporting a belief in some individuals regarding the merits of smoking—relaxation, weight control, social lubrication. Though for others, perhaps most, these beliefs would be viewed as faulty beliefs, or unwarranted beliefs.

Quasi-purposed designs are relevant here as well. One example Plantinga uses is the refrigerator operating with a design that cools to 70º Fahrenheit. It functions according to its design, but it is a defective design given that the real purpose is, or should be, to get this storage container operating at a much lower temperature. A design can be lacking in terms of its real purpose, but still be satisfactory in terms of its "actual, but practically-flawed," design elements. A neutral yet functional design can be considered bad design when purpose is factored into the mix.

With respect to smoking, the real "purpose" of the lungs is to take in oxygen. Constructing a quasi-purposed design scenario to take in smoke, and nicotine, is trouble. The behaviour is accomplished in terms of quasi-design. It seems the suspect quasi-design equates to bad belief, on some level.

Then there are the second-level belief forming mechanisms like inference and credulity. With respect to credulity Plantinga writes: "…you will have warrant for a belief that you acquire by way of testimony only if the person from whom you acquire the belief himself has warrant for it" (1993b, p. 37).

Regarding trade-offs and compromises consider, as Plantinga does, the design of a car. A design can be lacking in terms of optimal performance, but in the context of multi-dimensional thinking, the lack is understandable. For example, one could design a car to go much faster, and accelerate much more quickly, but this competes with design variables aiming for fuel economy, or for safety, or for durability. With respect to failures to stop smoking, such failure mechanisms

can be viewed much like an engineering tradeoff. In order to ensure that good learning is firmly entrenched there may be times when one must allow for bad learning to be firmly entrenched as well—a tradeoff. In order to gain in important epistemic areas (e.g., knowledge, creativity, agency, freedom, truth), failures are permissible in other areas (health, economics, social circles)—tradeoffs much like the auto engineering perspective.

While there are minor cognitive failings that are common knowledge (e.g., a stick looks bent in the water, or there seems to be an oasis in the dry, desert distance, or a dry road ahead looks wet, or the fake fruit looks real, as does the hologram, and so on) these are minor tradeoffs. A broad multi-dimensional perspective comes into play where trade-offs make sense to optimize multiple dimensions rather than maximize one dimension. Cognitively, a designer "…would want to design a system that worked well (that is, produced true beliefs) over as large a proportion as possible of the situations in which owners will find themselves, consistent with satisfying those other constraints.… In this way you end up with a system that works well in the vast majority of circumstances; but, in a few circumstances it produces a false belief. (Of course, you add the important feature of learning from experience in order to mitigate the doleful effects of the compromises: after a couple of trials you no longer believe the road is wet, that there is an oasis just a mile away, that the stick is bent, or what Paul, that habitual deceiver, says; you learn to be on the lookout for fake fruit and holograms (Plantinga, 1993b, p.39)." In essence, there is an optimal design, with the learning option to mitigate the limitations due to tradeoffs and compromises. One can learn to attain better self-regulation.

If one has learned to smoke, or learned to adopt a smoking orientation, is this an example of faulty beliefs and improper function? Yes. To believe that smoking is health-supportive (calming, a weight control mechanism, etc.), is psychologically image-enhancing (artist, rebel, etc.), or is socially accommodating (peer support, social lubricant, etc.), could be considered as

beliefs without adequate warrant or full warrant. Such beliefs are like the "bent stick in the water illusion," or the "fake fruit looks real." These beliefs are like illusory beliefs, rationalized beliefs, rather than warranted beliefs. Such beliefs could be driven by "glitches," "functional multiplicity," "unintended by-products," "co-existing design plans," "quasi-purposed designs," "glitches," or "minor cognitive failings." Such beliefs could also be driven by a deficient architecture lacking proper function, or mature function. Hormones, circadian rhythms, allergens, toxins, diet, could affect proper function. Developmental immaturity, faulty cognitive constructions, superstitions, habits, learning styles, personality, gullibility, also could affect proper function. The bottom line, though, is something is wrong with the beliefs.

This philosophical foundation for belief, and the warrant for holding a particular belief to be true, serves as a reference point for consideration of psychological models of stupidity, foolishness, failure, and so on. This is particularly the case with respect to regulating thinking and behavior. As a checklist for considering explanations of faulty beliefs, behavior and self-management the following questions can be asked related to (1) proper function and (2) aberrations:

Clearly there are many sources (philosophically) of problematic beliefs, problematic thinking, and, thus, problem behaviour. Some sources of bad beliefs would be better viewed, or more elaborately considered, through a psychological lens as opposed to philosophical considerations.

A Naturalism Model

Shermer (2004) presents an approach to evil that frames it in terms of what is, or what exists, in which case it is natural. Observational terms, and descriptive terms, would dominate thinking here, not moral terms. His approach to evil is tied to observations made by

anthropologists who note descriptively the behaviours of various cultural groups. Even so, there can be a shift to moral terms with the emergent myths of the "noble savage" or the notions of the fundamental "goodness" of people. Shermer calls this the Beautiful People Myth (BPM)—"When it comes to how humans treat other humans and the environment, the Beautiful People have never existed except in myth. Humans are neither Beautiful People nor Ugly People, in the same way they are neither moral nor immoral in some absolute categorical sense. Humans are only doing what any species does to survive; but we do it with a twist (and a vengeance)—instead of our environment shaping us through natural selection, we are shaping our environment through artificial selection (p. 95)." In Shermer's view, consistent with the worldview of naturalism, the bottom line is description—what is, is. It is the one model that does not default to the importance of beliefs. Indeed, beliefs themselves are just conglomerations of random events—products of particles in motion. Yet beliefs creep in!

The naturalist's approach to evil when tied to real-world observations pushes for a level of analysis, a level of reality, which is just descriptive. We humans, however, have a propensity to act as if there is something more than just chance involved in what we label "evil," albeit, chance is acknowledged. For example, Solzhenitsyn's famous observation that the line between good and evil runs right through the middle of each human heart, is instructive. For Solzhenitsyn it was something like a coin toss that determined his victim status as opposed to his perpetrator status. This acknowledgment of chance would be a variant of the naturalism model. Is it really just a matter of chance?

There is a common sense notion that there may be elements of chance in life events, but it is not "just chance" that explains behaviour. If it is just chance then beliefs and choices are minor epiphenomena as in the determinism models discussed earlier (hard determinism and compatibilism) with respect to personal agency and responsibility. Solzhenitsyn saw the

function of chance but he also saw that some acts are good and some are not. Writing about this issue (particularly in the Gulag Trilogy) was a thrust of his life. There is a hierarchy of good acts and bad acts. This additional level of reality, beyond nature and chance, supports attention to culture as a source of evil and even objective morality—posited good and evil.

In a similar vein to the naturalist and the quasi-naturalist, a challenge to the reality of evil emerges from Hannah Arendt's famous phrase on "the banality of evil." After witnessing Eichmann on trial in Jerusalem she concluded that evil was banal. Her claim has the ring of the "just chance" claim. Was Eichmann a pathetic little man rather than a monster of epic proportions? Or to put it another way: were Eichmann's beliefs (beliefs-in-use and espoused-beliefs) of what I'll call Type A (i.e., surface-level beliefs linked to the pragmatic, the political, the practical, the contingent, the expedient, the culture) as opposed to Type B (deep-structures, beliefs more in line with absolutes, synderesis, common sense)? Do we simply default to describing him and describing his beliefs? To view Eichmann this way is instructive—it casts evil as natural, normal, or just a chance variant, which would align with the portrayal Shermer offers—but it is also what might be called "abstructive," in that, it leads one away from moral reality. While observations like those of Arendt and Shermer mitigate evil by mitigating beliefs as Type A level beliefs, there is an intuitive reticence to abandon the notion of objective evil—Type B level beliefs. In essence, if one is going to posit evil, one is positing beliefs, and the importance of beliefs.

Independent of moral categories we have only observations of the way humans behave. Why do we humans behave this way? We behave this way because we are human. It's natural. Is there a better way to behave? It would depend on the consequences of the behaviour for individuals, for groups, for species. Other worldviews offer different answers and different

conceptual analyses; and worldviews are founded on beliefs. Ironically, even the naturalist's worldview posits beliefs.

A Religious Model of Human Nature

Religious models frame such issues by drawing in worldviews and worldview-based morality. Most religious worldviews see human nature in the context of a creator, a teleological purpose, an ideal, a prescription, a developmental trajectory, and a standard. Such ideals or standards are objective and real by definition. Such standards make demanding restraints, or call for controls, upon unacceptable or inappropriate behaviour. These religious worldviews offer explanations for the genesis of unacceptable behaviours. They offer solutions for dealing with behavioural violations of standards.

A religious worldview both incorporates and transcends the more naturalistic worldview by acknowledging that there is a broad spectrum of control mechanisms for behaviour. These may be configured in, at least, three ways: (1) *biology*, innate internal controls (like the biological internal control mechanism which sends a signal to stop eating, for example), (2) *environment*, external restraints (punishments, denial of rewards, embarrassment, shunning, penalties, laws, and so on), and (3) *self*, self-regulation (via choices based on beliefs, knowledge, wants, desires, learning theory, social-learning theory, hypotheses, hypothesis-testing, deduction, induction, abduction, and common sense). The restraints related to *self*, and self-regulation, are coupled to beliefs and were addressed in arguments like those advanced by Ayduk and Mischel (2002), Perkins (2002), and Baumeister and associates (Baumeister, 1997, 2005; Baumeister & Vohs, 2004a, 2004b; Schmeichel & Baumeister, 2004). They all seem to default to faulty beliefs, competing beliefs, or competing belief/decision hierarchies, as explanatory mechanisms.

To illustrate the latter claim consider the belief that it is morally neutral to "torture" animals. A naturalist in support of such a belief points to numerous descriptive facts of animal torture. At times a cat will seem to torment a mouse, a form of torture evident in nature. A child intentionally kills an ant, and most child psychologists are not likely to be too concerned. It is normal, natural and conceivably immature. Does this place the "torture" of animals in the "banality" category—a banal belief?

At another level, researchers shock animals in learning studies. Researchers inflict pain on animals to study the neurological and neurochemical responses to pain. Researchers inflict pain in toxicity studies. It is argued that such research is a necessary evil. Does this transcend the "banality" category—a not so banal belief?

When one obtains descriptive information for the behaviour of those who are more cognitively mature, there is likely to be an increase in concern regarding the torture of animals. What does one think about formal-operational thinkers torturing animals? We have empirical data showing a portion of a male sample of 137 university students (adolescent/young adult) have killed an animal (less than two percent have killed a pet, and five percent have admitted killing a stray or wild animal) (Daly & Morton, in preparation). Do we judge this behaviour from a purely descriptive worldview (naturalism) or do we judge this from a more moralistic worldview (religious)? Yes, these are interesting observations to which a naturalist could point as evidence of different practices and "different beliefs" in a population. It is descriptive. However, a simple moral, or religious, overlay on this notion of torture would suggest there is something faulty in such a belief. So, now we have competing beliefs and we look to the strength of the arguments for each belief—a move away from banality.

At an intuitive level one believes it is wrong to torture animals, and quite likely most people at a certain level of cognitive maturity would subscribe to this belief. But appeals to the majority, or to emotions, are not valid arguments. In addition, there is empirical evidence supporting the notion it is wrong to torture animals (Lindzey, 2009) since such practices are possible precursors to human violence. Moreover, there are conceptual cases being advanced regarding the treatment of animals from a theological perspective (Lindzey, 1994), a legal rights perspective (Regan, 1983/2004), a moral theory perspective (Rollin, 2006), or a logical perspective (see Singer, 2006). Even among those with dissenting views (Cohen & Regan, 2001; Smith, 2010) there are none who argue for the claim that it is morally neutral if one tortures animals. On second thought, perhaps a stringent and notable naturalist like Michael Ruse might point out there is possibly no immorality here; Craig (2008), for example, has pointed out how Ruse's famous question "Is rape wrong on Andromeda?" easily gets an answer like "possibly not," if values have merely evolved. It would be the same scenario for the torture of animals.

The beliefs regarding unacceptable behaviours are worldview rooted. Indiscriminate killing and torture (of animals and humans) are wrong, as basic principles, for example, in the Judeo-Christian worldview. With respect to animals one is expected to show care, stewardship, compassion, and kindness (Lindzey, 1994; Scully, 2002). With respect to humans there is the fundamental acknowledging of human dignity, human empathy, love, and moral commandments. One suspects there is a case to be made that cruel behaviours are wrong in other religions like Hinduism or Buddhism as well, although, the rationales might be different (e.g., reincarnation, detachment, or karma).

Then we hear the budding caveats like, "sometimes" when asked the question: "Are killing and torture wrong?" This applies to human relations with animals, and also to human-human relations. There are decision hierarchies at work. For example, it is argued that it is

wrong to torture an animal for a film project designed to entertain, but it is acceptable to torture an animal to test a scientific theory (Smith, 2010). A competing hierarchical arrangement (say from PETA) would argue it is wrong in both cases. A third hierarchical arrangement might argue it is okay in both cases if there is no physical, lasting harm. Philosophically, the analysis requires one to address faulty beliefs, competing beliefs, and competing belief/decision hierarchies, and this is before one gets to similar hierarchies applied to military interrogation protocols.

Is bad belief (faulty beliefs, competing beliefs, and competing belief hierarchies) a fundamental attribute of human nature? Yes, in traditional Christian theology, and Christian anthropology. In one scenario, the problem is tied the notion of proper function (Plantinga, 1993a, 1993b). In another scenario the problem is tied to the cognitive science underpinning beliefs (see Barrett, 2004, 2009; McCauley, 2011). In a third scenario the problem is tied to a sinful nature (cf the apostle Paul -- Romans 7:14-24[1]). In Paul's reflection here, why does one belief (I believe course A is the good path) fall victim to the other belief (I'll choose the bad course, course B)? Why the impasse between belief and ability, or belief and choice? Is it akrasia, or weak will? Is it conflict over competing final causes? Paul contends it is a problem with human nature, a problem with the ability to choose, and do, what we know to be the right choice. Problems with self regulation reduce to problems with ability, desire, or perhaps propensity. We are not apt to make the right choices. One escape is that we therefore tend to

[1] Rom 7:14-24 "For we know that the Law is spiritual; but I am of flesh, sold into bondage to sin. 15 For that which I am doing, I do not understand; for I am not practicing what I *would* like to *do,* but I am doing the very thing I hate. 16 But if I do the very thing I do not wish *to do,* I agree with the Law, *confessing* that it is good. 17 So now, no longer am I the one doing it, but sin which indwells me. 18 For I know that nothing good dwells in me, that is, in my flesh; for the wishing is present in me, but the doing of the good *is* not. 19 For the good that I wish, I do not do; but I practice the very evil that I do not wish. 20 But if I am doing the very thing I do not wish, I am no longer the one doing it, but sin which dwells in me. 21 I find then the principle that evil is present in me, the one who wishes to do good. 22 For I joyfully concur with the law of God in the inner man, 23 but I see a different law in the members of my body, waging war against the law of my mind, and making me a prisoner of the law of sin which is in my members. 24 Wretched man that I am! Who will set me free from the body of this death?" (NASB version)

deny what the right choices are (a form of rationalization). In traditional Christian theology the proper course is viewed as: (1) acknowledge what the right choices are, (2) admit we can't make those choices consistently, or truly, (3) accept grace and forgiveness, and (4) respond graciously. This too then reduces to belief—and the first step is acknowledging the correct belief.

Summary

All of the models considered at key levels arguably reduce to beliefs, at least in part. Beliefs underpin choices. Thus the caliber of choice is further complicated by the caliber of one's belief. This is not to claim that choice corresponds with belief. Rather, choice functions on a different axis although it is clearly tied to belief. By way of illustration, the caliber of choice for the person who chooses to smoke at Time 1 is different from the caliber of choice for the person who chooses to smoke at Time 4 (after 10 years of the addiction) even if the caliber of the belief (e.g., smoking is bad for one's health, smoking is relaxing, smoking is image enhancing) is the same at both choice-points. The caliber of belief axis, nevertheless, is a vital consideration, as choices are belief-based, and logically influenced by belief-shifts.

A Darkened-Mind Theory—Religious

In a particular Creedal worldview—the Christian worldview—there are arguably three sources proposed for the darkened mind: (1) the human self, (2) Satan, or the god of this world along with principalities and powers, or (3) God. The biblical case seems to attribute causality to all three sources with God being the more prominent source. Thus a fourth option—considering various influences in combination from the three key sources—might be a prudent consideration in this worldview. Again, drawing upon various components of causality (i.e., material cause,

final cause, formal cause, efficient cause, proximate cause, sufficient cause, direct cause, and so on) can facilitate integration and coherence.

> God blinds certain people. God can be the direct cause of a darkened mind (i.e., that God is the final cause, and perhaps involved in the formal cause) (for biblical evidence see Isaiah 6:9-10; Rom 11:7-15).
>
> Satan, or various principalities and powers can blind the mind. Whether blinding from the god of this world (II Cor 4:3-4) is a direct cause from a malevolent source, or a permitted cause, or material cause, to mediate either directly, or confluently, God's intent, is not clear. Seeing God as the final cause, however, and in fact as "the god of this world," has been argued forcefully, or at least interestingly, by Hartley (2005).
>
> People are blinded as a result of their acts. As evident in Paul's argument in Romans (Rom 1:18-25), people are viewed as instrumental in the darkening of their minds, even if God is the final cause. Conversely, people seem to be viewed as instrumental in the removal of the blindness—they have a veil removed as a result of their actions (II Cor 4:14-16).[1]

Regardless of the cause of the darkened mind, it seems fair to root it biblically in beliefs. In Romans 1:18-32 one gets the impression that Paul sees certain individuals with a darkened mind opting for beliefs they "know" are inferior, positions they "know" are wrong. Such beliefs interfere with belief shifts. In fact, the religious call to repentance (metanoia) is a call to a belief shift—a changed mind.

With respect to System 1 and System 2 level beliefs and thinking there seems to be an Affect heuristic, or Moral heuristic, which may be in play. Emotions, preferences, selfishness,

[1] A point of interest here is the comment from Jesus that "if they were blind they would have no sin." It seems to be a stretch to assume that God could blind people as an act of grace so that they would have no sin, and thus less judgment to face. Moreover, the blinding by God might be somewhat congruent with the gracious Divine hiding of God (Moser, 2008).

ego, hedonism, pride, greed, lust, and so on, are interfering with System 2 beliefs (i.e., cool Reason, Rules, and Reflection). In the process of such suppression of System 2 behaviours and beliefs have downshifted to System 1 level behaviours and beliefs. These darker beliefs and behaviours likely are functioning as habits with a degree of automaticity and impulsivity.

Biological Thinking – Underpinnings of Bad Beliefs

So then, it is a commonplace notion that bad behaviours generally are underpinned by bad beliefs, at least in part. Just as one asks: "Are bad behaviours biologically determined?" one can ask: "Are bad beliefs biologically determined?" The source of those beliefs, and the consequent behaviours, at a surface level or rash level, might be assumed to be societal, or personal. One typically looks first for environmental causes (e.g., parenting, poverty, peers, power structures, politicians, etc.); as well, one postulates personal causes evident in the ascription of blame, penalties, and praise. Yet, it is biology that is prominent in the mix currently—biology *plus* environment, or biology *times* evolutionary psychology.

Biology *plus* Environment

Possible biological underpinnings for bad behaviour arise naturally in discussions of the causality of behaviour. There is a biological creep. While environmental determinants, and personal responsibility, typically get first level consideration, and have through much of history, biology is now clearly prominent in the mix. As Rowe (1983) notes: "Since the 1930s, twin studies have consistently indicated a genetic liability toward criminal behaviours (p.474)." There are empirically-evident, biological determinants for behaviour pervading academic journals. Criminal behaviour, then, as a pretty good indicator of bad beliefs, could be grounds for inferring a biological basis for bad beliefs, at least partially.

Rowe's (1983) own study of monozygotic (MZ) and dizygotic (DZ) twins and delinquent behaviour, noted effects for heredity (genes), common environment, and specific environment. He also noted interaction effects, although he wasn't sure if an interaction effect was due to measurement issues, or if it was a real phenomenon. What was clear was that environmental models (common environment or specific environment) did not fit the twin data with which he was dealing. Adding a genetic component fitted. Two models (a genetic model, and a genetic plus shared environment model) fitted the twin data equally well. The genetic substrate was important.

While acknowledging both biological and environmental determinants, Rowe does note, as well, that "delinquent acts must be learned." So a learning component is essential as well for Rowe. Biological sources, then, are seen to be important, and while environment is taking something like a "back seat," learning is recognized as instrumental.

One danger in linking beliefs to biology is in defaulting to a biological position and attributing it all to genes (Hubbard & Wald, 1999)—that is, adopting an essentialist position regarding behaviours, and beliefs, as opposed to a more constructionist position, or an interactionist position. The essentialist position is logical for the naturalist as all causation would be brain-based, and event-caused. In this framing, exploring the biology of beliefs would be paramount as everything is rooted in biology in the naturalist worldview (Bailey, 1995, 2003). But, biology is only a causal component. At another level, it is biology plus environment that must be considered.

Be cautious! Yes, biology is a factor, but it is a factor in danger of masking other factors. Plomin (1989) also noted this problem: "The wave of acceptance of genetic influence on behavior is growing into a tidal wave that threatens to engulf the second message of this

research: These same data provide the best available evidence for the importance of environmental influence (p. 105).” Reporting concordance rates (for various traits, attitudes, orientations, beliefs, behaviours) from MZ twin studies of say 20%, 30%, 40%, can signal a weighty biological influence; but, at the same time, these same data, as Plomin flags discordance rates, point to something more important than biology, something else that is influential—at the very least, environmental influences.

Moreover, a similar danger exists if the focus is limited to a combination of both genes and environment. That is, such a focus on genes and environment could mask other contributors like luck, time, and chance (Kagan, 2010). Beyond Kagan’s focus on genes, environment, time and chance, one asks willfully: is something else, something equally important, possibly masked? Yes. Personal agency and intentionality can be masked. It is interesting that personal agency and intentionality have a way of resurfacing and making their presence evident. Even if they seem to be ignored or denied, personal agency resurfaces in the literature as apparent minor considerations, or as afterthought add-ons, or as a tip-of-the-hat courtesy. It is a recurring feature in reported studies that agency is implied if not acknowledged (e.g., Martin, Eaves, Heath, Jardine, Feingold, & Eysenck, 1986; Rowe, 1983). We know at some basic level that agency, intentionality, and choices, are important.

Shermer (2011), as a naturalist, addresses the biology of belief in his recent book while drawing upon both biological and environmental influences. In terms of the biological substrate he incorporates, and discusses, the neurological and neurochemical correlates of a belief; he is claiming some form of fundamental causality here, in that, the belief is a product of the neural activity. This is standard naturalist positioning. He references research on twins which does point to the importance of a biological (genetic) influence as a causal factor. Thus, admittedly,

there is an influential biological infrastructure for belief, and the consequent behaviours emerging from beliefs.

With respect to beliefs, however, there are some caveats to consider. Shermer draws from research that uses general constructs such as “interest in religion” or “interest in a religious career path” as proxies for belief (Waller, Kojetin, Bouchard, Lykken, & Tellegen, 1990). He also cites research that draws upon more specific items from a conservatism scale (e.g., Bible truth, Church authority, Divine law, abortion, etc.) as proxies for belief (Martin, et al., 1986). Belief may be more complex than such proxies. Nevertheless, the research is foundational at least for examining biological influences underpinning beliefs.

Moreover, Shermer (2011) does, fairly, take a causal perspective beyond biology. He acknowledges the importance of the environment, and mechanisms linked to evolutionary selection processes. He also looks to luck and chance as sources of belief when attributing beliefs to one’s parents, one’s culture, and one’s history. Given his own psychological background it would be fair to assume he acknowledges time (a la Kagan, 2010), and thus development, as a factor, as well. Nevertheless, it all (biology, environment, evolutionary selection, and so on) reduces to event causation, which further reduces essentially to biology as the source of beliefs. Some naturalists admit up front that it all reduces to biology (e.g., Bailey, 1995). Such a position does seem to be a logical inference in Shermer’s text as well. The naturalist ultimately seems trapped by a determinism which, in the final analysis, reduces causality to biology.

The problem is: behaviours, or beliefs, are rooted in more than Kagan’s (2010) determinants (i.e., the fundamental biological determinants or the secondary epiphenomenal or chimerical determinants—luck, environment, time, and chance), whether independent, additive,

or interactive. The root of intentionality and personal agency is masked, for the naturalist. Or, personal agency and intentionality are reduced to biology (Wegner, 2002).

Shermer's (2011) biological case for beliefs is really no different than the case advanced for the biological substrate for homosexuality, or for eating problems, or for smoking, and so on. In fact, biology is a component, as is the environment. However, as has been stressed in this text the load-bearing wall is not biology, nor is it environment; the load-bearing wall is learning, intentionality, and agency. Choices and choice-points are pivotal.

The importance of learning, and personal agency, was acknowledged by Martin et al (1986) in their study of twin data, even though their findings heavily favoured the biological. They examined the transmission of social attitudes via genetic models and cultural models. Their model incorporated both social and genetic components for transmission but they note: "...we have obtained estimates of the cultural parameter that do not differ significantly from zero in many cases (p. 4368)." While they admit their model might be wrong they intriguingly note: "The alternative possibility is that geneticists and social scientists have misconceived the role of cultural inheritance and that individuals acquire little from their social environment that is incompatible with their genotype (p. 4368)." So, on the one hand they give a great deal of weight to the genotype. Yet, on the other hand they posit the importance of personal agency when they add: "In no way does our model minimize the role of learning and social interaction in behavioral development. Rather, it sees humans as exploring organisms whose innate abilities and predispositions help them select what is relevant and adaptive from the range of opportunities and stimuli presented by the environment (p. 4368)." Agency is important, at least in principle for Martin et al (1986).

A biological plus environmental focus on beliefs—alone or in combination—is informative, but potentially distracting. A biological influence driving attitudes, beliefs, and contingent behaviours, should not preclude an environmental influence. Similarly, such influences, whether separate or additive, do not preclude the possibility of change, and change aligns with intentionality and agency. In a large twin study of the cause of stability and change (in religious values and religious attendance) Button, Stallings, Rhee, Corley, and Hewitt (2011) reported that change in religious values was due to genetic and non-shared environment influences. In terms of proportions they note: "The source of change was almost equally attributable to genetic and nonshared environmental variance for religious values, and to a similar magnitude of genetic, shared environmental, and nonshared environmental variance for religious attendance (p. 209)." Change has biological and environmental influences.

Most importantly, such influences (genetic and environment) do not preclude the place of personal agency. Rather, arguably, personal agency is most important. The importance of personal agency is readily acknowledged at the common sense level, and by those who are not locked into the naturalist worldview. Thus, the main inferences to draw from a biological focus on bad beliefs are: (1) there are a multitude of factors influencing the formation of a belief, and the change of beliefs, (2) biological influences are important, and (3) biological infrastructure is not the most important factor. Rather, the educational environment, learning, intentionality, choice, and change are equally important, or even more important, focal points than either one's biology alone, or one's environment alone.

Biology *plus* Evolutionary Psychology

Shermer (2011) did draw upon the stories of evolutionary psychology as part of the biological substrate he advances as one committed to the biological. Even evolutionary

psychology emerges from biology, somewhat ironically, as everything is rooted in the biological. If so, Shermer's thinking, and his position, may be premature. If it is truly rooted in the biological, biological influences could push him in new directions in the future in homage to adaptations, exaptations, or even spandrels.

Focusing on evolutionary psychology, particularly with respect to the formation of religion, that is, religious beliefs like beliefs in supernatural agents, is interesting. More importantly, such thinking has informative contributions to offer regarding the nature of beliefs and belief-formation, in the context of belief categories (Barrett, 2004, 2009, 2011; Murray, 2009), warrant for beliefs (Plantinga, 1993a, 1993b), and the truth-value of beliefs (Plantinga, 2009).

Appraising current thinking on evolutionary psychology (e.g., Barrett, 2004, 2009, 2011; Murray, 2009, Murray & Goldberg, 2009; Plantinga, 2009), challenges naturalistic accounts of belief formation, or naturalism itself (Haught, 2009; Plantinga, 2009). The links between evolutionary psychology and beliefs can be framed in terms of links between cognitive science and beliefs.