What *Did* Make Me Do It? A Review and Summary of Neil Whitehead and Briar Whitehead's *My Genes Made Me Do It!—Homosexuality and the Scientific Evidence*

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My Genes Made Me Do It!—Homosexuality and the Scientific Evidence, authored by Neil Whitehead, biochemist and science researcher/consultant, and edited by Briar Whitehead, journalist and author of *Craving for Love* (2003)—is a facetious title for a book whose main point is that *our genes don't and can't make us do anything*! That includes feeling or acting on homosexual or same-sex attractions (SSA).

The 2010 version of *My Genes* is a thorough revision of the original 1999 edition. For more than twenty years, Neil Whitehead has personally dedicated himself to reviewing the historical and current professional and scholarly papers relevant to the development and enactment of SSA. By his conservative estimate, he has reviewed more than "10,000 scientific papers" (back cover). The updated 2010 version alone involves the citation of more than 460 scientific and professional papers and publications, almost 200 more than the 1999 edition. These additional citations include the most up-to-date literature from the past decade that is relevant to understanding the origins and outcomes of homosexuality (SSA).

Where to Start Reading

While we agree that the book is a reasonably "comprehensive and accessible" book (back cover), we submit that the Whiteheads cover so many topics and cite so many studies and reports that at times the writing may be daunting for nonscientists. We strongly encourage readers to *begin at the end* with the book's summary (pp. 264–273). This final chapter lists all of the major conclusions of the preceding twelve, including sound-bite conclusions about the evidence for the changeability of SSA and evidence from the twin studies that SSA is *not* genetically determined. In addition to summaries at the end of each chapter, particular bullet-point summaries throughout the text are worth reading before tackling the chapters themselves (see, for example, pp. 36–37, 80–81, 144, and 159–160).

In the following ten sections, the reader will find further commentary on the idea that *our genes can't and don't make us do anything* and on other major ideas specifically concerning homosexuality.

Section 1. Our genes do *not* make us *do anything*!

In spite of a cultural bias that human beings are genetically determined to behave in certain ways, the Whiteheads' review of the biogenetic literature leads them to assert otherwise. In Chapter 1 ("Can genes create sexual preferences?"), they offer a brief review of introductory genetics and conclude that *while genes have an influence in and on* all *human behavior*—making it possible to live and act in and through our bodies—*genes themselves do not make or compel* any *behavior*.

The Whiteheads explain that while the concept of genetic influence is a valid scientific phenomenon, genetic effects are indirect. In other words, genes create an individual who can grow, adapt, and evolve in his environment; however, genes do not dictate behavior. In fact, they represent no more than 10 to 15% of the factors that *do* influence human sexual behavior, whether toward a person of the same or the opposite gender.

The summary at the end of Chapter 1 (pp. 36–37; cf. pp. 265–267) offers not only a clear and simple presentation of the authors' comprehensive review of the scientific literature on genetics, but also a good introduction to the breadth and depth of the research evidence and the scientific logic that they employ throughout the book.

Section 2. While genetic factors are not irrelevant, *neither* heterosexuals *nor* homosexuals are "born that way."

The major part of Chapter 3 ("Are heterosexuals 'born that way'?") reviews research on the development of heterosexuality. The Whiteheads finally conclude that genes do not determine heterosexuality, just as they do not determine homosexuality. Rather, they conclude that heterosexuality also develops in response to environmental stimuli.

To further support the assertion that no one is born with any specific sexual preference, the Whiteheads review in Chapter 9 the reported evidence that claimed a

scientist had found a gay gene. Beginning in 1993, the public was inundated with news reports from the Western media that "a gene determining homosexuality" had been found, even though scientists responsible for the study (Hamer et al., 1993) had reported otherwise.

Attempts to replicate these and other studies to confirm findings of a gay gene have largely failed to show the same results (pp. 164–171). The Whiteheads note that with "the availability now of thorough 'whole genome' scans, gene linkage studies are now becoming rather passé" (p. 164). Also, as the authors discuss in Chapters 1 and 8, we now know that literally thousands of genes may be involved in a single trait. In addition, scientists have observed and believe that the environment may influence the expression of these genes. In other words, *genes provide the blueprints for the formation of the human body, but they seldom dictate particular characteristics of human behavior*.[7]

The study of how genes may influence the behavior of a person—"the way in which the expression of heritable traits is modified by environmental influences or other mechanisms without a change to the DNA sequence"—is called *epigenetics* by biologists (Dictionary.com). Behavioral, social, and developmental psychologists, and other researchers commonly use interaction theory (Magnusson, 1985) to explain the ways that genetic and biological factors affect and are affected by environmental and nonbiological factors (i.e., how "nature" affects and is affected by "nurture"). The Whiteheads' use of *epigenetics* to explain the real but limited influence of genes on sexual behavior may be also—and to professionals in the arts and sciences, perhaps better—explained using interaction theory.

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[7] An example of how to understand this comes from understanding how people develop oral language. Persons with normal, healthy genes and otherwise benign pre- and post-natal physical and psychosocial influences will learn to speak and hear language. The language(s) they learn will be the one(s) used by those with whom they interact while growing up. In this sense, the genes themselves do not determine whether a person learns a language, or which language he or she learns. But the genes are necessary—even if not sufficient—for a particular language to be learned.

However, *the fact that both heterosexuality and homosexuality are not genetically determined does not mean that genetic factors are irrelevant to their development*. The Whiteheads describe such influences as "indirect random genetic factors" (p. 12). Throughout the book, the authors maintain that "in any human behavior . . . any genetic influence is weak and indirect" (p. 10). Consistent with their estimate in the summary of the first edition of *My Genes*, the Whiteheads conclude that genetic factors represent no more than 10% of the total influence on sexuality and emphasize that everyone has about that amount for all kinds of behaviors.

Section 3. Nongenetic (epigenetic) biological factors also do not *make* us develop or act on SSA.

Epigenetic Factors

A number of nongenetic, biological factors (such as fetal developmental disorder, instincts, pre-/postnatal hormones, sex-atypical brain structures) have been either speculated or reported as contributing to the development of SSA, but a careful review and consideration of relevant research shows such claims are unsupported and unlikely, if not implausible. Such factors generally are called *epigenetic*, meaning nongenetic (see above). Figure 5 (p. 32) shows a graphic comparison of the frequency of occurrence of SSA compared with the frequency of actual developmental (epigenetic) disorders. This comparison reveals that "the occurrence of SSA is [five times or more] higher than any [other] single occurrence of epigenetic abnormality, and hence is very unlikely to arise from some random developmental disorder before birth" (pp. 32–33). In brief, SSA occurs too frequently compared with such nongenetic, biological disorders that occur much less frequently.

Hormonal Factors

Chapter 7 ("Prenatal hormones? Stress? Immune attack?") discusses whether homosexuality might be attributable to abnormal prenatal hormonal levels in the mother. Studies of various factors such as exposure to diethylstilbestrol, adrenogenital syndrome,

finger length ratios, other prenatal hormone effects, adult exposure to sex hormones, maternal stress, and the maternal immune hypothesis have shown that the evidence to support this hypothesis is weak.

"Gay" Brains?

In Chapter 8 ("Are brains gay?"), the Whiteheads review older as well as recent research and scientific thinking about how homo- or heterosexuality might in some manner be hardwired in the internal structures of the brain. In addition to older and recent research—which in general has failed to find consistent, innate anatomical/structural differences between male and female brains at birth and beyond (pp. 143–148)—the authors consider the studies undertaken in the nineties, including the LeVay (1991) hypothalamus study.

A consistent pattern exists: when one study claims to have found anatomical brain differences between the brains of persons *presumed* to be homosexual and heterosexual, subsequent studies have failed to replicate the findings. Also, even well-conducted studies have failed to rule out that any differences in brain structure among people who clearly practice homosexual behavior are not the result of "learning." In other words, such differences, if they exist, could be the result—and not the cause—of homosexual behavior. This point is consistent with recent research concerning brain *neuroplasticity*—how the brain can physically change over the lifespan, and the way in which repeated new behaviors can cause predictable changes (e.g., Doidge, 2007).

What if SSA Is an Instinct or a Reflex?

In Chapter 4 ("How strong are instincts?"), the Whiteheads respond to the argument that homosexuality may be "like a powerful instinct" or reflex, meaning that it is so much a part of a person that it is instinctual. Those who support that argument believe that SSA behavior is so deeply rooted in the personality that it is difficult, if not impossible, to change. The Whiteheads consider this speculation in light of what is known about other instincts.

Among the "strong instincts" or "reflexes" humans have are the fight/flight response, a mother's concern for an infant, the need to eat and sleep, yawning, sneezing, pulling a hand away from a flame, and digestion, to name just a few. As powerful as any and all of these instincts or reflexes are, none is so powerful that it cannot be "trained"—in other words, brought under some degree of conscious control.

Considering what this means for the desire to engage in heterosexual behavior, the authors write that even though the desire to reproduce is instinctual, it can be trained and brought under control. Considering homosexuality in this light, the Whiteheads point out that unlike heterosexuality, homosexuality is certainly not connected to reproduction of the human species. Yet even if SSA deserved to be called an "instinct" of any kind, "it is no less malleable than any other of the powerful instincts that man experiences, which, we have seen, are subject to a huge degree to man's will and other environmental influences" (p. 102).

Section 4. Environmental (family and social) factors *are* influential, but they do *not,* in and of themselves, determine SSA.

(This section reviews only what *My Genes* reports about the environmental and social factors that may influence the development of a given person's SSA and behavior. Neil Whitehead has written two articles that address these topics at greater length, both of which are cited in the reference section of this review.)

As discussed above in Section 2, studies of identical twins reveal that postbirth environmental factors contribute to one twin being homosexual while the other is usually not. These factors include the individual's family and social environment, as well as his or her personal psychology.

Developmental Struggles

In Chapter 3 ("Are heterosexuals 'born that way'?"), the Whiteheads review the stages of development that result in heterosexuality and conclude that those who have a

homosexual orientation often have had struggles with different stages of psychosexual development. These stages include a lack of attachment and weak identification with the same-sex parent and lack of bonding with same-sex peers. Such developmental "breakdown(s)" lead "to needs for same-sex affection and affirmation that become eroticized" (p. 90; cf. pp. 82–85). Sexual abuse, which can cause trauma, can also play a role. The Whiteheads note that "rates of male sexual abuse are higher in homosexuals and lesbians than in heterosexuals" (p. 90; cf. pp. 85–86). While such factors are significant for *some* persons who develop SSA, the Whiteheads emphasize that *not all* persons with SSA report these experiences.

As previously mentioned, studies of identical twins in which one twin is homosexual reveal that the identical co-twin is usually *not* homosexual. Therefore, we can conclude that the predominant things that create homosexuality in one identical twin (and not in the other) have to be *postbirth* factors (p. 174; cf. Whitehead, 2011a). As the authors point out, most people indicate that multiple factors led to the development of their SSA, and that no one factor can be considered primary.

Path analysis studies do not *identify unique or individual pathways into SSA*[8]

In Chapter 11 ("Path Analysis: Social factors do lead to homosexuality"), the Whiteheads review studies by Bell, Weinberg, and Hammersmith (1981); Van Wyk and Geist (1984); and Bem (2000). All of those studies used the statistical tool called *path analysis* to try to identify the most common path(s) leading to SSA. Notably, the results of these path analyses—especially in the Bell et al. (1981) study—have been interpreted as failing to support social causes for SSA. The path analysis approach works by statistically minimizing or eliminating "those factors that do not apply to everyone in

[8] For a more extensive explanation and discussion of the results of the studies of homosexuality that have used path analysis, see Whitehead (2011b) elsewhere in this volume.

the sample in the simple attempt to find common factors" (p. 218). Unfortunately, this means that "unique experiences" or individualistic pathways to developing SSA are not identified in the process (p. 218).

The Whiteheads maintain that a proper interpretation of Bell et al. (1981) and other path analyses actually provides evidence that social factors do influence the development of SSA (cf. Whitehead, 2011b). The Whiteheads explain that while path analysis is not the preferred tool for studying homosexuality, it has proven useful when accurately interpreted. While it's true that the development of homosexuality cannot be attributed to a few common causes, multiple identifiable causes have been observed in many different clients, with gender nonconformity being the predominant one. According to the Whiteheads, Bell et al. actually found that social factors are significant; however, no one social factor can be identified as the sole or primary influence in the development or practice of homosexuality. Again, this is consistent with the modern understanding of interaction theory.

In the Van Wyk and Geist (1984) study, the strongest precursors of SSA were found to be "intense sexual experiences and feelings of arousal and pleasure or discomfort associated with those experiences" (p. 219). In particular, males with SSA reported having had childhoods characterized by poor relationships with their fathers during the teenage years, more female companions at age ten, fewer male friends at ages ten and sixteen, avoidance of sports activities, and predominant sexual experiences with males. The exact opposite has been found for females with SSA (pp. 219–220).

Finally, the path analysis done by Bem (2000) also found that childhood gender nonconformity was an important factor in the later development of SSA, a finding that confirmed Bell et al.'s (1981) finding. Bem also concluded that compared to childhood gender nonconformity, "genetic influence is near zero" (p. 221).

Section 5. Idiosyncratic responses to "chance" or "random" life experiences have the greatest influence on who does—and doesn't—develop SSA.

It must be acknowledged that postbirth factors include not only influences that come from a person's family and social environment, but also the psychological and behavioral responses that he or she has in response to these influences. One goal of psychology as a science is to investigate such individual differences in response to the experiences of one's environment. The importance of individual, unique, or idiosyncratic perceptions of and responses to common factors—for example, circumstantially similar family or social events to and with which a person interacts—are discussed in this section.

Those who accept that SSA develops primarily through *psychogenesis*—the interaction of psychological factors and processes, notably psychopathological—may find this section, if not the entire book, disappointing. While the Whiteheads do examine some of the historical issues surrounding this understanding of SSA as the result of a personal interactive process—including some of the work of current clinicians and theoreticians who have championed primarily or exclusively psychological theories of causation—the authors do not attempt to present these professionals' views comprehensively. It is not that understanding the evidence from psychotherapeutic experience is unimportant; the authors specifically criticize the American Psychiatric Association and the American Psychological Association for ignoring these reports (see Section 10). Rather, it was simply not the intent or scope of the book to discuss them (see Section 7).

Concerning the material discussed in Section 4, the authors emphasize that what is of paramount importance in the development of SSA are the idiosyncratic cognitive and emotional reactions to particular environmental events, many of which have been identified as pathways to the development of SSA. Whether it happens within

or outside the family, an experience proves influential if it both catches and keeps a person's attention. The influence increases if the person also responds behaviorally to the experience and his or her response becomes a *habit* (see Section 6).

Chance, Random, One-off Experiences

Along with the consistent conclusion that a person's genes didn't and couldn't make him or her feel or act on SSA, the most significant idea of the Whiteheads is their repeated mention that idiosyncratic responses to chance, random, or one-off (British-English synonym for the preceding terms) events are *the* most significant factor in the development of SSA. The use of terms like *chance* and *random* warrants further explanation.

The Whiteheads define *chance* as "an individual's reaction to random life events" (p. 16). Their definition includes two assumptions. 1. Everyone in a given age group does *not* have the same objective experience or event. 2. Everyone who *does* share an objective experience does not have the same personal, idiosyncratic, subjective experience and/or will not respond to the experience in the same way. (See Section 6 for a further discussion of subjective, individualistic responses.)

As seen in Section 4, twin studies research (Chapter 10) offers good illustrations of chance or random experiences. For example, research shows that perceptions among even identical twins can be erratic even though both twins witnessed or participated in the same objective experience of their parent(s). Furthermore, individual chance events can affect one child in unique ways. For example, a child who stumbles across pornography during adolescence may react in a way that his brother does not. It is not unlikely that an initial experience of pornography or sexual arousal by another means *may* lead to repeated similar experiences and, eventually, a tenacious habit.

Though not primarily related to SSA, another example helps illustrate this. All persons of a certain age have not experienced and will not ever experience sexual abuse.

Of those who have experienced sexual abuse, some will be more distressed than others, and their distress will last for a longer time. Some, but not all, of those abused will abuse others or might develop SSA. In statistical terms, this may be called an *interaction effect*—the combination of one or more unusual, attention-getting, nonuniversal (chance, random, one-off) experiences with certain personal, internal, and external responses. The main effect—the experience of sexual abuse—alone does not determine how the person is affected by the event (having been sexually abused).

Section 6. Early sexual experience that becomes habituated appears to significantly influence the persistence of SSA into adulthood.

Sexual Habits

Along with the message that same-sex and opposite-sex attractions are *not* genetically determined, the Whiteheads emphasize throughout their book that patterns of sexual feelings and behaviors—heterosexual as well as homosexual—are learned habits of thinking, feeling, fantasizing, and behaving. They state, "According to Gebhard (1965) of the Kinsey Institute, unusual behaviors and preferences can often be traced back to *one-off incidents* of this nature" (i.e., "*chance incidents—random circumstances* unique to the individual that are in some way associated with sexual arousal") (p. 79; emphasis added). As discussed in Section 3, the authors report that sexual behaviors are developed by episodes of training or habit.

It is not the random experience itself but the person's "random reaction" to the experience that matters most. Random reaction, if it structures itself into self-image, can become a significant contributor to homosexuality, as twin studies show. The overriding outcome is a homo-emotional focus on people of the same sex that, at puberty, gets confused or melded with genital sex. This begins to finds expression in sexual acts with others of the same sex that become habitual and often (particularly in males) addictive (p. 272, emphasis added).

Section 7. SSA (or homosexual orientation) is *not* immutable. People *can* and many *have* changed, some spontaneously and others with assistance.

Based on their review of the literature, the Whiteheads summarize: "There is nothing fixed or final about the homosexual orientation and its natural expression—homosexual behavior" (p. 10). In fact, numerous reports in the scientific literature over many decades reveal that a significant amount of orientation change occurs during the lifespan, some of it spontaneously and some of it through the medium of counseling. Many persons who once felt same-sex attractions and/or acted to gratify them have diminished or ceased doing so, and some of these have developed opposite-sex attractions and behaviors. A similar number of persons who once categorized themselves as OSA (opposite-sex attracted) develop SSA, but this number constitutes only one-seventeenth of heterosexuals (instead of half of all homosexuals). This change illustrates that homosexuality is not hard-wired in the brain nor is it the result of predetermined genetic factors.

In Chapter 12 ("Can sexual orientation change?"), the Whiteheads review the clinical and research literature on both *assisted* (professionally or pastorally aided) and *unassisted* (spontaneous) change in sexual orientation. They note that research shows that change occurs in both directions—from homosexual to heterosexual and from heterosexual to homosexual (pp. 224–231).

In answer to the question posed by the heading of Chapter 12 ("Can sexual orientation change?"), the Whiteheads summarize:

> There is abundant documentation that people with SSA do move toward a heterosexual orientation, often with therapeutic assistance, but mostly without it. Some achieve great change, some less, but it is clear that sexual orientation is fluid, not fixed. (p. 259)

The Whiteheads make special mention of the fact that if we can find even one person whose sexual orientation has changed, that alone will disprove the theory that sexual orientation is immutable.

Areas for Future Research

At times, the Whiteheads mention findings or offer impressions about changes in SSA and behavior that warrant further research. For example, the authors advocate more thorough study of how those who change without assistance do so and under what conditions professional assistance is necessary or warranted. Another important area for further research is clarifying which factors are most helpful for those who do seek assistance.

Section 8. Science provides a basis for encouragement and hope for those who experience unwanted SSA and for those who care about and for them.

Section 7 documents that many persons who once experienced unwanted SSA no longer do so, to various degrees. Such persons have reported—or it has been reported by others—that they have changed in satisfying ways, either through their own efforts alone or with professional or other assistance. Although the primary purpose of *My Genes* is to review what the scientific evidence does—and does not—show about what may influence the small minority of persons who do experience SSA, the Whiteheads offer more. At times, they write more as humanitarians, offering words of compassionate encouragement, hope, and challenge to those who experience SSA and their parents.

Section 9. It is unrealistic to expect that future research will change any of the preceding conclusions.

Many ask the question: Is it possible for science to find some biological link to SSA that resolves its etiology once and for all? The Whiteheads answer: "No!"

The Whiteheads offer the current body of empirical knowledge and scientific logic as a basis for asserting that future research will *not* someday prove that people with SSA *were* "born that way" and that their genes *did* make them do it after all. The authors mention several reasons for their confidence. First, most of these scientific findings have been clearly established from facts that will not change (p. 271).

Second, the strongest reason for confidence that the conclusions in *My Genes* will not be contradicted by future research comes from the studies of identical twins. As already discussed in Sections 2 and 4, MZ twins have identical genes—but in most cases, if one is homosexual, the identical brother or sister usually isn't. There is only an 11 to 14% chance that an identical twin is also homosexual. Involved in this are all the influences we know about now as well as those we have yet to discover. Added together, all those influences have only a rather weak effect on what leads a given person to feel and experience SSA (p. 271). We can reasonably conclude that future research will enter new fields and come up with new links, but none of them will be definitive (p. 271).

Even if scientists one day *were* to discover a gene that all persons who experience SSA have and that persons who do *not* experience SSA lack, it would not mean that such a gene *makes* those who have it feel and behave accordingly. The point of Chapter 1 (and Section 1 of this review) is that genes simply don't work that way in human beings. In all but the most primitive living organisms, including humans, single or multiple genes may influence but do not dictate behavior. Such influence may be cooperated with or transcended. The Whiteheads offer an insightful challenge:

> DNA *is* a measure of what you are . . . but depending on what you *do*, and the *choices* you make, you may end up merely letting your genes *define* you, or totally *transcending* them. The staircase upwards only *starts* at the genetic level. (p. 37, emphasis added)

While future research will undoubtedly further clarify the relationship between genetic and biological factors and the development of SSA and behaviors, it is *not* realistic to expect future research to change the truth that the feelings, thoughts, fantasies, and behaviors of SSA are not determined wholly or primarily by one's genes or biology.

Section 10. Current professional, political, and social cultures make it difficult to research, educate about, and provide professional care for unwanted SSA.

Along with reviewing relevant scientific research, the Whiteheads at times engage in professional and social criticism and advocacy. Along with their humanitarian comments, which are reviewed in Section 8, their attempts at social commentary and advocacy may be seen primarily in the introduction and toward the end of Chapter 12 (pp. 241–254). At the outset, they assert that for the last two to three decades, the West has been bombarded with propaganda and misinformation about SSA. This misinformation has affected everything from public institutions, such as legislatures and courts, to churches to mental health institutions.

In writing the book, the Whiteheads were both mindful that political correctness and fashion have allowed misinformation and disinformation about SSA to trump scientific accuracy and determined to clearly and responsibly state what scientists can and cannot say about these matters. They voice particular concerns about the politically—instead of scientifically—grounded positions and activities of the mental health professions about matters related to SSA (cf. pp. 5–6, 241–246).

The current gay-activist climate within the mental health professions makes the responsible conduct of research and therapy difficult. For example, mental health professionals in many jurisdictions in the West are prohibited by law from offering therapies that assist individuals in changing their sexual orientation.

The Whiteheads criticize particular pronouncements and other activities by both the American Psychiatric Association (2000) and the American Psychological Association (2009) (pp. 241–246). Both organizations have demanded "a level of proof" that is not required of therapies for other problems that efforts to change SSA works (p. 243).

Why Persons with SSA May Attempt to Make It More Difficult for Others *to Change*

Of particular interest are the Whiteheads' speculations about why gay activists *resist* change (pp. 248–250). For example, among gay activists are those who attempt to discredit others who claim that they have changed and actually become enraged when mental health professionals claim that change is possible. The Whiteheads speculate that many may have tried alone for years to change but have failed.

Others feel that by admitting to the possibility of change, they may end up surrendering political gains made in the area of human rights. Still others may not want to give up the gratification of their sexual activities now that such activities have become mainstream. Finally, some gay activists believe that those who desire change have been pressured by others and are acting out of shame or guilt for having same-sex attractions.

The Whiteheads take issue with the hypothesis that societal attitudes have made gays and lesbians commit suicide more than heterosexuals. Research doesn't support this notion. The authors note that Bell and Weinberg (1978) found that "gay suicide attempts, when they are directly related to homosexuality, are often over the break-up of a [SSA] relationship" (p. 257). Likewise, more current studies that have tried to establish a link between societal oppression and discrimination have failed to do so (p. 257).

Concluding Comments

As a fitting conclusion to this review of the 2010 edition of *My Genes,* two important ideas from the last chapter of the book suffice. First, the Whiteheads inform us that our genes can't and don't make us do anything. Next, they tell us that SSA is

multifactorial—that is, the causes of SSA cannot be reduced to one or two variables. In the end, a person who develops SSA does so for a variety of reasons, none of which are determinative but all of which are influential as he or she interacts with these factors in individual—even if at times commonly shared—ways as a unique human being.

Professionals, scholars, parents, pastors, legislators, and especially those who experience SSA—or who are concerned that they do or will—will find it well worth the time to read the scientific data and reasoning that allow the Whiteheads to form their conclusions.

Finally, the reader of this review is encouraged to visit the Whiteheads' website (http://www.mygenes.co.nz/). In addition to a copy of their 2010 book that is available for download, additional reviews of reports of studies concerning "homosexuality and the scientific evidence" that were published after *My Genes* may also be found.

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