

Science and Theology in Human Sexuality

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Abstract

Christian debates about human sexuality are often presented as being concerned primarily with differences regarding authority of scripture. It is proposed here that they might more constructively be understood as debates about science and theology. Just as cosmology, evolution and demonology have variously been perceived as presenting conflict between scientific theories and biblical texts, so human sexuality presents similar points of tension. The issue at stake is not really about about biblical authority, but rather about how the “book of nature” and the book of scripture are understood to mutually interpret each other. Lessons learned from debates between science and theology in other domains, may usefully facilitate a more constructive debate on sexuality.

Keywords: Sexuality, Gender, Hermeneutics, Science, Theology

Debates in the Church about human sexuality have often been presented as primarily concerned with the authority of scripture. According to the conservative view, an affirmation of a traditional interpretation of certain specific texts, is taken to assert that sexual relationships between people of the same sex are explicitly prohibited. Assertion of a different moral norm, within which such relationships are affirmed, is thus viewed as a failure to take the authority of scripture seriously. In fact, advocates of a more liberal approach also assert the authority of scripture, but make different interpretations of the texts and refer to different texts.

It is proposed here that this debate might more constructively be understood within the context of the dialogue between science and theology. Unlike creation, evolution and cosmology, human sexuality is not normally seen as this kind of issue.¹ However, much of the present controversy can be understood as generated by differences over how to properly interrelate science and scripture. As with other similar debates, there is no real conflict between the two unless appeals to biblical literalism or tradition are allowed to resist reinterpretation.

The present article will not attempt to address all of the issues arising from a consideration of how science and theology might mutually inform a Christian understanding of human sexuality. It intends rather, by way of preliminary exploration of just some of the issues, to make a case for more in depth study. Attention will be focussed primarily on homosexuality, with some reference also to transgender issues.

Scripture and Science in the Anglican Debate

Within the Church of England, concern for the authority of scripture is seen in successive authoritative statements. Thus, a motion passed by General Synod in 1987 affirmed the “biblical and traditional teaching on chastity and fidelity in personal relationships” and identified “homosexual genital acts” as falling short of this ideal. The 1991 statement by the House of Bishops, *Issues in Human Sexuality*, concluded on grounds of the “convergence of Scripture, Tradition and reasoned reflection on experience” that the “homophile orientation and its expression in sexual activity do not constitute a parallel and alternative form of human sexuality as complete within the terms of the created order as the heterosexual”.² In the wider Anglican Communion, the 1998 Lambeth Conference rejected “homosexual practice as incompatible with Scripture”.³

It has not escaped the notice of Anglicans, or others, that a discrepancy might be perceived between such statements and the findings of science. Various strands of research, combined with a prevailing medical consensus, identify homosexuality as a normal variant within the spectrum of human sexual experience. The perceived discrepancy has variously been responded to by arguments that the current status of scientific research is inconclusive, or that the findings of science are misrepresented, misinterpreted, or misused, or that scripture should in any case take priority over science as the guiding rule for how Christian life should be lived. Scientific evidence, when it is taken into account, is marshalled in support of different and opposing theological conclusions, or else made

¹ There are some notable exceptions. See, for example, Stanton L. Jones and Mark A. Yarhouse, *Homosexuality: The Use of Scientific Research in the Church's Moral Debate* (Downer's Grove: Illinois, 2000), 127-39; Eugene F. Rogers, *Sexuality and the Christian Body: Their Way into the Triune God*, ed. Gareth Jones and Lewis Ayers, *Challenges in Contemporary Theology* (Oxford: Blackwell, 1999).

² House of Bishops of the General Synod of the Church of England, *Issues in Human Sexuality* (London: Church House Publishing, 1991), 40.

³ Resolution I.10.d

subordinate to them. Thus, for example, the Working Group on Human Sexuality convened under chairmanship of Sir Joseph Pilling,⁴ having received conflicting evidence from medical authorities and conservative Christian sources, concluded that “neither the medical nor the social sciences have arrived at any firm consensus that would impact decisively on the moral arguments”.⁵ This conclusion seems contrary to the view of most medical and scientific groups, which generally assert that the sciences do impact decisively on such arguments. For example, the World Medical Association and World Psychiatric Association base their respective position statements on the premise that homosexuality is not a disease but a natural variation of human sexuality.⁶

Making the Science Fit

The term “homosexual” was first adopted in Germany in 1869 in reference to individuals understood to experience sexual attraction to members of their own gender.⁷ The early use of the term appears to have been in the context of promoting a normative understanding of homosexuality as inborn and unchanging, but for a century or more it came to be understood primarily as a pathological category. Only in 1973 was it removed as a diagnostic category from the 2nd Edition of the *Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-II)*.⁸ It remained a diagnostic category of the World Health Organisation until the publication of the 10th edition of the *International Classification of Mental and Behavioral Disorders (ICD-10)* in 1992.⁹

The move to understand homosexuality as a normal variation of human sexual experience, and to remove it from diagnostic classificatory systems, was taken on a variety of scientific grounds. Amongst these, awareness that it is not uncommon, aetiological theories which posit that homosexuality is inborn and unchanging, and empirical evidence demonstrating that it is difficult or impossible to change sexual orientation by therapeutic intervention, played a part. It is also argued that the mental health problems experienced by gay and lesbian people are not due to homosexuality per se, but rather to the prejudice and stigma that they experienced in society. Homosexuality is now accepted within scientific and medical communities as a normal variant of human sexuality.¹⁰

Evidence of this process of normalisation may be seen not only in the exclusion of homosexuality from diagnostic taxonomies but also in political, professional and ethical statements defining good practice within the fields of counselling, psychotherapy and psychiatry. Thus, for example, a Memorandum of Understanding on “Conversion Therapy”, agreed by seventeen different organisations in the UK in 2015, asserts that “efforts to try to change or alter sexual orientation through psychological therapies are unethical and potentially harmful”. The coalition of signatories

⁴ House of Bishops Working Group, *Report of the House of Bishops Working Group on Human Sexuality* (London: Church House, 2013). Referred to from hereon as “the Pilling Report”

⁵ *Ibid.*, 97.

⁶ World Medical Association, “WMA Statement on Natural Variations of Human Sexuality,” World Medical Association, <https://www.wma.net/policies-post/wma-statement-on-natural-variations-of-human-sexuality>; World Psychiatric Association, “WPA Position Statement on Gender Identity and Same-Sex Orientation, Attraction, and Behaviours,” (World Psychiatric Association, 2016).

⁷ J. Drescher, “Out of DSM: Depathologizing Homosexuality,” *Behav Sci (Basel)* 5, no. 4 (2015).

⁸ American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-II* (Washington DC: American Psychiatric Association, 1968).

⁹ World Health Organization, *The ICD-10 Classification of Mental and Behavioural Disorders* (Geneva: World Health Organisation, 1992).

¹⁰ See discussion by Drescher, “Out of DSM: Depathologizing Homosexuality.”

includes, notably, groups working with gay and lesbian people as well as the Association of Christian Counsellors, seven professional groupings concerned with counselling/psychotherapy, two Royal Colleges, and the NHS in England and Scotland.¹¹

Such major shifts in professional and scientific opinion might be taken as tribute to the good influence of science upon society and the willingness of medical professionals to change their minds on the basis of good evidence. However, this is not the way that things are viewed by some Christian groups. In a preface to *Beyond Critique: The Misuse of Science by UK Professional Mental Health Bodies*, Dermot O’Callaghan and Peter May argue that “a politically correct ideology.... is subtly reshaping the values of society as regards attitudes to sexuality” and that “significant areas of scientific endeavour are now influenced by ideology rather than by pure research”.¹² In a postscript to the same publication, O’Callaghan and May assert that the arguments of the Royal College of Psychiatrists (in documents submitted respectively to the Church of England listening exercise and the Government consultation on Equal Marriage) “are not only unconvincing, but have to twist the evidence in order to make it fit the narrative”.¹³ *Beyond Critique* was published by Core Issues Trust, a charity that exists for the advancement of education consistent with its statement of belief – a statement that explicitly includes a reference to homosexuality as one form of “sexual brokenness”, and was cited in the Pilling Report alongside evidence submitted by the Royal College of Psychiatrists. The opposing views of Core Issues Trust and the Royal College appear to have contributed significantly to the final conclusion of the Pilling Report to the effect that there is no scientific consensus.

The views of a Royal College established to advance the science and practice of psychiatry are clearly difficult to reconcile with those of a charity that has a statement of belief based upon previously adopted theological principles. However, each argues its case on ostensibly scientific grounds. The claim of the Royal College to speak authoritatively on the scientific evidence would prima facie appear to be better founded than that of Core Issues Trust, but perhaps a Royal College is unduly influenced by the values of liberal secular society? There is no truly objective “view from nowhere”, and views on homosexuality, as on other scientific matters, are easily influenced by hidden presuppositions – whether they originate from that liberal society or from Christian tradition. It is for this reason that the scientific community subjects its publications to critical peer review.

Another recent example illustrative of this problem is provided by two publications that at first sight appear to be similar, albeit reaching diametrically opposed conclusions. A paper entitled “Sexual Orientation, Controversy, and Science” was published in 2016 in *Psychological Science in the Public Interest*, a journal of the Association for Psychological Science.¹⁴ The six authors all come from distinguished institutions and represent expertise in a variety of disciplines – notably psychology, neuroscience, and genetics. The journal is peer reviewed. The article reaches measured conclusions about the role of genetic and environmental factors in determining sexual orientation, concludes that there is no good evidence that therapy can change sexual orientation, and draws conclusions

¹¹ The Memorandum is available on the websites of most of the organisations concerned. See, for example <https://www.psychotherapy.org.uk/wp-content/uploads/2016/09/Memorandum-of-understanding-on-conversion-therapy.pdf>

A revised version was agreed in 2017 by 13 organisations: <https://www.psychotherapy.org.uk/wp-content/uploads/2017/10/UKCP-Memorandum-of-Understanding-on-Conversion-Therapy-in-the-UK.pdf>

¹² Dermot O’Callaghan and Peter May, *Beyond Critique: The Misuse of Science by Uk Professional Mental Health Bodies*, 2nd ed. (Hillsborough: Core Issues Trust, 2013).

¹³ *Ibid.*, 37.

¹⁴ Bailey, J. M., Vasey, P. L., Diamond, L. M., Breedlove, S. M., Vilain, E. & Epprecht, M. (2016) Sexual Orientation, Controversy, and Science. *Psychol Sci Public Interest*, 17, 45-101.

concerning the relevance of the research to social, political and ethical decision making. The article has a particular concern with the ways in which political and scientific controversies get entangled with each other. It expresses concern about the harsh punishments inflicted as penalties for homosexual acts in much of Africa, the Middle East, Asia and elsewhere.

Another article published in 2016, at first glance, looks quite similar. “Sexuality and Gender: Findings from the Biological, Psychological and Social Sciences”, was published in a journal called *New Atlantis*.¹⁵ Its authors, Lawrence Mayer and Paul McHugh, are also distinguished clinicians and scientists. The article presents what it describes as a “careful summary and an up-to-date explanation of research — from the biological, psychological, and social sciences — related to sexual orientation and gender identity”.¹⁶ It concludes, amongst other things, that sexual orientation and gender orientation are not innate, and that “sexual orientation may be quite fluid over the life course for some people”.¹⁷ Its bibliography includes a long list of peer reviewed academic papers. *New Atlantis*, however, is not a peer reviewed journal. It is published by the Ethics and Public Policy Centre, an organisation committed to “defending American Ideals”. Both the journal and at least one of the authors of the article have a history of expressing negative views on homosexuality. The article has been widely criticised by other scientists as demonstrating a partial, selective, and biased approach to the presentation of the evidence.

Despite the impression created by publications such as *Beyond Critique* and *New Atlantis*, and whilst recognising the enduring gaps in scientific knowledge, there is a large degree of consensus in the mainstream scientific community concerning the nature of homosexuality as a normal variant of human sexuality. There is similar consensus amongst clinicians and therapists. It is possible to assert that the majority have got it wrong, but it is also possible to assert that where Christians have a strongly held theological view on human sexuality they try to make the science fit in support of that view.

What might we learn from other encounters between science and theology?

Science has changed the way in which we now read scripture. This has happened both through the insights that social scientific methods have brought to biblical interpretation, and also through major historic changes in scientific understanding of our place in the universe and the origins of life on earth. I will select just three examples for discussion here, and I am aware that I could have chosen others. Nor have I space here to explore even these examples in critical depth. However, notwithstanding these reservations, I hope that they might still illustrate the potential for the ongoing conversation between science and theology to constructively inform theological understandings of human sexuality.

The “Galileo affair” provides the earliest significant historical example of a perceived clash between science and theology.¹⁸ The exact nature of the disagreement continues to evoke controversy and debate. There were clearly scientific problems with Galileo’s case. However, there were also

¹⁵ Mayer, L. S. & McHugh, P. R. (2016) Sexuality and Gender: Findings from the Biological, Psychological, and Social Sciences. *New Atlantis*, 10-143.

¹⁶ p7

¹⁷ p7

¹⁸ It was arguably more concerned with a clash between science and philosophy. Stillman Drake, *Galileo: A Very Short Introduction* (Oxford: Oxford University Press, 2001). provides a very helpful short introduction. See also Ernan McMullin, *The Galileo Affair*, Faraday Papers (Cambridge: Faraday Institute for Science and Religion, 2009).

disagreements concerning what was emerging from science and what was understood to be the assertion of scripture. These debates predated Galileo's work. His astronomical observations simply added fuel to the proverbial fire. Whereas scripture appeared to assert the immobility of the earth,¹⁹ the heliocentric, Copernican, model favoured by Galileo asserted that the earth revolved around the sun. Galileo valued scriptural authority and sought to reconcile the apparent contradictions. In his letter to the Grand Duchess Christina of Tuscany, in 1615, he wrote "We conclude that God is known first through Nature, and then again, more particularly, by doctrine, by Nature in His works, and by doctrine in His revealed word." The controversy illustrates the need to reevaluate interpretations of scripture in the light of scientific findings. God reveals himself in the "book of nature" as well as in the book of scripture.

The perceived clash between scripture and Darwin is no less subject to ongoing debate and was no less historically complicated.²⁰ Allegorical interpretations of the Genesis creation narratives had been presented at least since the time of Augustine of Hippo, and were entirely compatible with Darwin's theory of evolution.²¹ Darwin had his scientific critics and, conversely, many figures within the Church were supportive of his theories. His theory of evolution by natural selection has generated problems primarily for a modern school of literalist interpretation of scripture, not for traditional Christian theologians. However, Darwin's theories have left theology with some important challenges and opportunities. How do we reconcile the apparent "chance and necessity" of the evolutionary process with the creative purposes of God in the world? How do we reconcile the Christian belief in a loving God with a natural order that has evolved through suffering, death and natural selection? We see the place of human life in the created order differently as a result of the scientific account that Darwin bequeathed to us. Indeed, what it means to talk of God as "creating" human beings now looks very different to us. However, Darwin has also affirmed the scriptural account of creation in important ways, and has helped us to appreciate the inherent diversity and creativity of the natural order. The universe appears to have an inbuilt and ongoing creative capacity. Human beings were, as the Genesis text tells us, formed "from the dust of the ground".²² We are embodied creatures, spiritually aware and yet physically grounded, a complex psychosomatic unity.²³

A third example of a way in which we now read scripture differently might be found in the gospel accounts of Jesus's exorcism of evil spirits. Six different accounts are provided in the synoptic gospels in detail, alongside more general references to Jesus' ministry of exorcism.²⁴ Mostly, these

¹⁹ See, for example, 1 Chronicles 16:30, Psalm 93:1

²⁰ The literature on this is vast, but I am grateful especially for insights gained from Arthur Peacocke, *God and the New Biology* (London: Dent, 1986), 87-102; R.J. Berry, *Creation and Evolution Not Creation or Evolution*, Faraday Papers (Cambridge: Faraday Institute for Science and Religion, 2007). I am aware that Darwin's theories have been considerably debated, modified and updated, even if generally accepted. I simply do not have space here to explore this literature in detail. An interesting account of evolution from a Christian perspective, including its implications for human sexuality, is provided by Joan Roughgarden. See, for example, Joan Roughgarden, *Evolution's Rainbow: Diversity, Gender and Sexuality in Nature and People* (Berkeley, CA: University of California Press, 2013).

²¹ See, for example, Wolfhart Pannenberg, *The Historicity of Nature: Essays on Science and Theology* (West Conshohocken, PA: Templeton, 2008), 45-48.

²² Genesis 2:7

²³ See, for example, the interesting discussion by Denis Edwards, *The God of Evolution* (New York: Paulist Press, 1999).

²⁴ Mark 1:21-28 (cf Luke 4:33-35), Mark 5:1-20 (cf Matthew 8:28-34 & Luke 8:27-39), Mark 7:24-30 (cf Matthew 15:22-28), Mark 9:14-29 (cf Matthew 17:14-18, Luke 9:38-43), Matthew 9:32 (cf Luke 11:14), Matthew 12:22f. For helpful discussions see J. D. G. Dunn and G. H. Twelftree, "Demon-Possession and

narratives would now appear to a medical reader to refer to neurological conditions or disabilities – to epilepsy, deafness, blindness and mutism – although it has been argued that they might have been psychogenic in origin.²⁵ Uniquely in the case of the Gerasene man there is reference to his being “in his right mind”²⁶ following Jesus’s intervention, leaving open the possibility that his condition may have represented a mental disorder. Modern anthropological and psychiatric understandings of the nature of possession states have opened up multiple possible interpretations of these texts which do not undermine their theological significance but which also do not require affirmation of a pre-modern demonology.²⁷ This does not undermine the fundamental theological principles that the exorcism narratives affirm. Physically, psychologically, spiritually, human beings are afflicted, and in Jesus new possibilities for freedom are opened up.²⁸

Whilst I am aware that much more could be said about all three of these examples, my intention here is not a rigorous exploration of each of them but rather to make a prima facie case that they have something to say to the matter of human sexuality. At the time of the Galileo affair, it appeared to some that science said something contradictory to scripture and yet now few if any Christians would see any discrepancy at all. Science helps us to read scripture differently. Darwin has opened our eyes to how science and scripture critically illuminate each other and, together, inspire a sense of awe and wonder at the variety and interrelatedness of all created things. Science has opened up new conceptual frameworks to inform our understanding of many of the biopsychosocial afflictions to which Jesus brought healing.

What is natural?

Sexuality is a central and far reaching aspect of our experience of being human.²⁹ It is at once a physical, social, psychological and spiritual part of our make up as human beings. As the basis for reproduction it has played a key part in our evolution and in the generation of human diversity. Sexuality is “natural”. As with most things in the natural order it exhibits diversity – biologically, psychologically and socially.

It is unfortunate that within the Christian tradition sexuality has come to have deeply negative connotations, often being associated with sin rather than embraced as a good gift of God in creation. Certainly sexuality is vulnerable to disorder and misuse, but sexual desire is rooted deeply within us.

Exorcism in the New Testament," *Churchman* 94 (1980); Loren T. Stuckenbruck, "The Human Being and Demonic Invasion: Therapeutic Models in Ancient Jewish and Christian Texts," in *Spirituality, Theology & Mental Health*, ed. Christopher C. H. Cook (London: SCM, 2013)..

²⁵ See, for example Donald Capps, *Jesus the Village Psychiatrist* (Louisville: Westminster John Knox Press, 2008).

²⁶ Mark 5:15, cf Luke 8:26

²⁷ See J. W. Montgomery, *Demon Possession* (Minneapolis: Bethany House, 1976); Erika Bourguignon, *Possession* (Prospect Heights, IL: Waveland, 1976); M. D. Enoch and W. H. Trethowan, *Uncommon Psychiatric Syndromes*, 2nd ed. (Bristol: Wright, 1979), 160-90.

²⁸ An understanding of demon possession as a modern explanation for human affliction has also been applied by some Christians to issues of homosexuality (Michael W. Ross and Olli W. Stålström, "Exorcism as Psychiatric Treatment: A Homosexual Case Study," *Archives of Sexual Behavior* 8, no. 4 (1979).) and gender identity (David H. Barlow, Gene G. Abel, and Edward B. Blanchard, "Gender Identity Change in a Transsexual: An Exorcism," *ibid.* 6, no. 5 (1977).).

²⁹ World Health Organization, *Defining Sexual Health: Report of a Technical Consultation on Sexual Health 28–31 January 2002, Geneva*, Sexual Health Document Series (Geneva: World Health Organization, 2006).

These desires are not in themselves unnatural, disordered or sinful, although how we respond to them might be. The question on which Christians are not agreed concerns the boundaries of what might be considered natural, or “ordered”, sexuality. Thus, for example, should we consider homosexuality as natural or unnatural, ordered or disordered?³⁰

There can be little doubt that St Paul considered sexual relationships between people of the same sex (in his cultural and historical context) as unnatural. His ideas of what is natural, as expressed by in Romans 1 and elsewhere, were influenced by Greek (especially Stoic) philosophy as well as by his own understanding of the natural order as created by God.³¹ Paul’s idea of what is natural is complicated and appeals to ways of thinking that appear self-contradictory and alien to modern thought. For example, he considers as “natural” such cultural matters as the cutting of men’s hair. In Romans 11 he refers to God acting “against nature”. Where he does apply the concept of nature to sexual matters in Romans 1, it would appear to be in regard to human actions and not desires. Indeed he may have followed classical thought in understanding homoerotic attraction as natural.³² As Dale Martin has argued, modern readers easily read into the text their modern (heterosexual) assumptions about sexual desire as a natural phenomenon.³³

Ideas of what may be considered natural have changed considerably over the last two millenia, not least because of our reenvisioning of the Christian doctrine of creation in the light of Darwin’s theories. Science has come to comprise our main way of understanding what is natural. Regardless of this, it is exceedingly difficult to define what is “natural” and the concept is arguably socially constructed in such a way as to impose certain hidden assumptions upon discourse.³⁴ Many things that are “natural” from one perspective – such as bacterial infections, genetic disorders or the human propensity to selfishness – might nonetheless be considered unnatural, or disordered, from other perspectives.

Had Paul been writing the first chapter of his letter to the Romans today, he would have had to write it differently. From a scientific perspective, sexual diversity is just one among many examples of human diversity, and diversity is ubiquitous in the natural order. Human beings are different in all kinds of ways and western society has, in general, come to affirm this both socially and morally. We no longer consider it acceptable to express prejudice against others on grounds of gender, intelligence, personality, race, disability, parentage, or sexuality. This does not mean that wider social understandings of what is “natural” can automatically be conflated with a Christian understanding. Paul may or may not have agreed with the secular consensus of our time. However, it does give us cause to reconsider. It is no longer self evident that homosexual intercourse is “unnatural” (whatever Paul may have intended by this) and the statistically vast majority of

³⁰ For a helpful discussion of biological and cultural drives in the context of evolutionary theory, see Edwards, *The God of Evolution*, 60-70. Even where such drives are “disordered”, Edwards (drawing on Rahner and others) argues that they are not sin.

³¹ J. D. G. Dunn, *Romans 1-8*, ed. D. A. Hubbard, G. W. Barker, and R. P. Martin, 38a (Dallas: Word, 1988), 64; C. E. B. Cranfield, *Romans: A Shorter Commentary* (Edinburgh: T & T Clark, 1995), 35.

³² Margaret Davies, "New Testament Ethics and Ours: Homosexuality and Sexuality in Romans 1:26-27," *Biblical Interpretation* 3, no. 3 (1995); Dale B. Martin, "Heterosexism and the Interpretation of Romans 1:18-32," *ibid.*

³³ "Heterosexism and the Interpretation of Romans 1:18-32."

³⁴ See Alister E. McGrath, *The Science of God* (London: T&T Clark, 2004), 35-44. for a helpful discussion

examples observed in society today of people being “consumed with passion for one another”³⁵ are heterosexual not homosexual.³⁶

We therefore need to reexamine the question. What constitutes – theologically and scientifically – “natural” sexuality? Many things that are natural are not uncritically accepted by science, medicine or society as good. Disease and disorder are identified according to diagnostic criteria based upon (amongst other things) suffering and distress, impaired function, reduced mortality and impact upon society. Some of these categories have moral and spiritual implications. For example, antisocial personality disorder causes distress and suffering to family, friends, and society, even if not to the individual concerned. It is thought to have both genetic and environmental determinants, but people identified as having this disorder are still held morally responsible for their actions. On the other hand, scientifically and clinically, sexual diversity which is not associated with suffering or harm is most obviously understood as “natural”. Where such diversity is associated with suffering and harm only as a result of the responses of society (stigma, prejudice, bullying and exclusion) we might well label society as deviant, disordered, or “unnatural”, rather than the underlying natural diversity.

Definition and Clarification of Concepts

Fundamental concepts, such as “sex” and “sexuality”, let alone “sexual orientation”, are not easily defined. This is, at least partly, because they impact on all aspects of human experience, including the biological, psychological, social, cultural and spiritual aspects of life. They are thus within the domain of both the natural and social sciences and form legitimate topics of study within diverse disciplines, such as biology, physiology, genetics, psychology, sociology and anthropology. Whilst human beings have not changed much over the last two thousand years, history and culture have witnessed to wide varieties of sexual customs, behaviours and self-understanding.

“Sex” is usually understood as referring to the sum of the biological characteristics that define human beings as male or female.³⁷ However, genetics, anatomy and physiology (let alone psychology or culture) do not always neatly sort individuals according to a simple binary taxonomy. Possible human genetic karyotypes include a variety of sex chromosomal replications and deletions (eg XXY, XYY, XO) in addition to the commonly encountered female XX and male XY. Anatomy may be ambiguous, due to disorders of sex development (perhaps better referred to as intersex conditions)³⁸ and decisions made by clinicians assigning gender at the time of birth may later prove to be incorrect or otherwise unhelpful. Sex is, in any case, not a purely biological phenomenon. Individuals can, and do, identify with non-typical social (gender) roles, and self-identify sexually in a variety of ways whether or not there is any biological ambiguity concerning their sexual identity. Given biological and behavioural diversity throughout the animal kingdom, and given the observable diversity of psychological characteristics of human beings, none of this is particularly surprising to either scientists or clinicians. It is all very natural.

³⁵ Romans 1:27

³⁶ This is thus a part of a wider question as to how revealed truth is properly both conserved by tradition and reinterpreted in the light of changing world views (Mark Wynn, "Tradition," in *The Epistemology of Theology*, ed. William J. Abraham and Frederick D. Aquino (Oxford: Oxford University Press, 2017).).

³⁷ World Health Organization, *Defining Sexual Health: Report of a Technical Consultation on Sexual Health 28–31 January 2002, Geneva*.

³⁸ I. A. Hughes et al., "Consensus Statement on Management of Intersex Disorders," *Arch Dis Child* 91, no. 7 (2006).

The concept of homosexuality is, as noted above, a recent and culturally situated invention. It is therefore true to say, as some have suggested,³⁹ that the bible has nothing to say about it. It represents a modern western realisation that sexual desire, sexual arousal, sexual identity and sexual behavior are distinguishable phenomena, each of which can be studied scientifically. It provides a particular way of recognising that some people experience predominant and enduring attraction to members of the same sex rather than (as is statistically more common) the opposite sex. However, it is not a culturally universal phenomenon and it might be best to talk about “homosexualities” rather than homosexuality.⁴⁰ It is not a recognisable category at all in many cultures. This is not because there are not people within those cultures who experience same sex attraction, but rather that different cultures present different levels of acceptance of same sex erotic behaviour, and different social categories with which people experiencing same sex attraction may (or may not) identify. It may therefore be true to say that there are “no homosexuals” in some non-western societies.⁴¹

Vasey and Vanderlaan⁴² have therefore suggested that cross cultural research needs to pay more attention to the different ways in which the “deep structure” of sexual orientation is culturally expressed. However, if sexual orientation may be considered as a psychological “deep structure”, sexual identity is altogether more complicated, having biological, psychological and social components. In order to avoid confusion, it is probably best to reserve the term “gender” for the socially visible aspects of sexual identity – thus – gender identity and gender expression.⁴³ Transgender people have a strong sense of gender identity differing from that assigned to them at birth.⁴⁴ This inner sense of self-identity variously crosses or transcends culturally defined categories. They may identify, and be identified as, neither male nor female, occupying a category that is not accommodated within a binary construct of gender. Gender identity is both distinct from but interrelated with, sexual orientation.⁴⁵ Whilst there has been a trend in recent years towards normalisation of the experiences of trans people, Gender Dysphoria has been retained as a diagnosis in DSM-5, recognising the distress experienced as a result of the discrepancy between socially assigned and psychologically experienced gender identity.⁴⁶

³⁹ See, for example, Gerard Loughlin, "Pauline Conversations: Rereading Romans 1 in Christ," *Theology & Sexuality* 11, no. 1 (2015).

⁴⁰ Stephen O. Murray, *Homosexualities* (Chicago: University of Chicago Press, 2000); Gerard Loughlin, "Gay Affections," in *The Oxford Handbook of Theology, Sexuality, and Gender*, ed. Adrian Thatcher (Oxford: Oxford University Press, 2017).

⁴¹ J. M. Bailey et al., "Sexual Orientation, Controversy, and Science," *Psychol Sci Public Interest* 17, no. 2 (2016): 64.

⁴² Paul L. Vasey and Doug P. VanderLaan, "Evolving Research on the Evolution of Male Androphilia," *The Canadian Journal of Human Sexuality* 23, no. 3 (2014). See also Bailey et al., "Sexual Orientation, Controversy, and Science," 64-67.

⁴³ World Medical Association, "WMA Statement on Transgender People," <https://www.wma.net/policies-post/wma-statement-on-transgender-people/>.

⁴⁴ World Professional Association for Transgender Health, *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People*, 7th version ed. (World Professional Association for Transgender Health, 2011).

⁴⁵ American Psychological Association, "Guidelines for Psychological Practice with Transgender and Gender Nonconforming People," *Am Psychol* 70, no. 9 (2015).

⁴⁶ American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders. Fifth Edition. DSM-5* (Washington DC: American Psychiatric Association, 2013).

It is important to remember that the conceptual issues addressed here are not merely of scientific, clinical, or academic interest. Whilst some people identify as “asexual”,⁴⁷ and apparently experience little or no sexual attraction to others, for most people their sense of their own sexuality is at the core of their experience of being human. When sexual desire, identity or orientation are at odds with social expectation it can be a cause of deep distress to those concerned. Medicine has at times unhelpfully pathologised various experiences and behaviours in such a way as to cause further distress, but the scientific study of sexuality has gradually brought about a change in medical and social expectations. Generally, this change can be seen as an advance in understanding and conducive to a more compassionate response to those who experience this important aspect of being human as a cause of distress and unhappiness.

The causes of sexual orientation

Glenn Wilson and Qazi Rahman, summarising the evidence on the psychobiology of sexual orientation conclude that “sexual orientation is largely determined by the time of birth, partly by genetics, but more specifically by hormonal activity in the womb arising from various sources”.⁴⁸ Social environment, they conclude, does not appear to be a major determinative factor.⁴⁹ Children who will become homosexual as adults do not (statistically) conform to typical gender roles. As with heterosexual development, homosexual attraction typically appears prior to first homosexual experience. There is thus little or no scientific evidence to support the contention that homosexuality is socially “contagious”.

Sexual orientation is not something that people “choose”.⁵⁰ As Bailey et al have noted,⁵¹ the question as to whether or not homosexual people choose their sexual orientation is not a helpful one, and is not really a scientific question. Sexual orientation is a matter of desire, and we do not get to choose what we desire or do not desire.

The question therefore arises as to whether or not the causes of homosexuality are in any way relevant to theological (or social, political, and ethical) controversies at all? In one sense, they are clearly not. Causal determinants of sexual orientation do not in any way negate human free will or choice. If something is morally wrong, it is wrong whether we desire it or not. However, in other ways, there are significant implications for theology and for any wider ethical debate.

Firstly, we know that homosexuality (as understood in the western world, primarily in terms of sexual orientation) is not in any sense blameworthy. People do not choose to be homosexual (or

⁴⁷ Mark Carrigan, "Asexuality," in *The Palgrave Handbook of the Psychology of Sexuality and Gender*, ed. Christina Richards and Meg John Barker (New York: Palgrave MacMillan, 2004).

⁴⁸ Glenn Wilson and Qazi Rahman, *Born Gay: The Psychobiology of Sex Orientation* (London: Peter Owen, 2005), 10.

⁴⁹ See also the more recent review by Bailey et al., "Sexual Orientation, Controversy, and Science.", which concludes that there is “good evidence for genetic and nonsocial environmental influences on sexual orientation” (p87). However, they also note that the evidence that causal environmental influences are non-social rather than social is stronger for male than for female sexual orientation. In a recent British study of female twin pairs, evidence for the influence of a non-shared environmental effect (possibly including peer socialisation) was identified, leaving open the possibility of at least some social environmental influence in women (A. Burri et al., "Genetic and Environmental Influences on Female Sexual Orientation, Childhood Gender Typicality and Adult Gender Identity," *PLoS One* 6, no. 7 (2011).).

⁵⁰ There may be rare exceptions, as noted by Denis Alexander, *Genes, Determinism and God* (Cambridge: Cambridge University Press, 2017), 216-17.

⁵¹ Bailey et al., "Sexual Orientation, Controversy, and Science," 62.

heterosexual) and manipulation of the social environment does not predispose people to homosexuality. Homosexuality is not related to family upbringing or to relationships with parents. Nor (as we shall see shortly) is it possible to change sexual orientation by psychotherapeutic or social means. Homosexuality is – in a scientific sense – completely natural. It is just one aspect of the pervasive diversity encountered throughout the natural order.

Secondly, research does show that beliefs about causation influence attitudes. For example, in one study,⁵² it was found that those who believe sexual orientation to be genetic or “inborn” have more tolerant attitudes towards gay and lesbian people. A scientific understanding of the causative and developmental factors underpinning sexual orientation also provides a helpful counter-argument to unhelpful and harmful, yet persistent, assertions that homosexuality is to be understood as result of demonic possession.⁵³

The increased psychological morbidity experienced by sexual minority groups

Homosexuality (defined variously, but usually according to sexual behaviour or self-identity) is associated with an increased incidence of anxiety, mood and substance use disorders, as well as with suicidal thoughts and acts of self harm.⁵⁴ The most likely explanation for this would appear to be the experiences of social stigma, bullying and violence to which gay and lesbian people are subjected in society, all of which are known to be bad for mental health.⁵⁵ In one US study, experience of religious prejudice was shown to be directly correlated with anxiety, stress, shame and alcohol misuse amongst homosexual people.⁵⁶ Evidence from the US also shows that legalisation of same sex marriage has brought about health improvements,⁵⁷ and that mental health problems

⁵² J. P. Sheldon et al., "Beliefs About the Etiology of Homosexuality and About the Ramifications of Discovering Its Possible Genetic Origin," *J Homosex* 52, no. 3-4 (2007).

⁵³ Ross and Stålström, "Exorcism as Psychiatric Treatment: A Homosexual Case Study."; Stephen Bates, *A Church at War: Anglicans and Homosexuality* (London: I.B. Tauris, 2004), 137.

⁵⁴ Richard Herrell et al., "Sexual Orientation and Suicidality: A Cotwin Control Study in Adult Men," *Archives of General Psychiatry* 56 (1999); Stephen E. Gilman et al., "Risk of Psychiatric Disorders among Individuals Reporting Same-Sex Sexual Partners in the National Comorbidity Survey," *American Journal of Public Health* 91, no. 6 (2001); Michael King et al., "Mental Health and Quality of Life of Gay Men and Lesbians in England and Wales," *British Journal of Psychiatry* 183 (2003); M. King et al., "A Systematic Review of Mental Disorder, Suicide, and Deliberate Self Harm in Lesbian, Gay and Bisexual People," *BMC Psychiatry* 8 (2008); G. Hagger-Johnson et al., "Sexual Orientation Identity in Relation to Smoking History and Alcohol Use at Age 18/19: Cross-Sectional Associations from the Longitudinal Study of Young People in England (Lsype)," *BMJ Open* 3, no. 8 (2013); J. Semlyen et al., "Sexual Orientation and Symptoms of Common Mental Disorder or Low Wellbeing: Combined Meta-Analysis of 12 UK Population Health Surveys," *BMC Psychiatry* 16 (2016); A. Miranda-Mendizábal et al., "Sexual Orientation and Suicidal Behaviour in Adolescents and Young Adults: Systematic Review and Meta-Analysis," *British Journal of Psychiatry* 211 (2017).. Similar findings have been reported for transgender people: W. O. Bockting et al., "Stigma, Mental Health, and Resilience in an Online Sample of the Us Transgender Population," *Am J Public Health* 103, no. 5 (2013); Larry Nuttbrock et al., "Gender Abuse and Major Depression among Transgender Women: A Prospective Study of Vulnerability and Resilience," *American Journal of Public Health* 104, no. 11 (2014).

⁵⁵ See, for example, the discussions by Semlyen et al., "Sexual Orientation and Symptoms of Common Mental Disorder or Low Wellbeing: Combined Meta-Analysis of 12 UK Population Health Surveys."; I. H. Meyer, "Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence," *Psychol Bull* 129, no. 5 (2003).

⁵⁶ B. J. Sowe, A. J. Taylor, and J. Brown, "Religious Anti-Gay Prejudice as a Predictor of Mental Health, Abuse, and Substance Use," *Am J Orthopsychiatry* 87, no. 6 (2017).

⁵⁷ Gilbert Gonzales, "Same-Sex Marriage — a Prescription for Better Health," *New England Journal of Medicine* 370, no. 15 (2014).

experienced by gay, lesbian and bisexual people are less in states that extend legal protections against hate crimes and employment discrimination based on sexual orientation.⁵⁸ Causal relationships have not been proven beyond all scientific doubt and it is possible that a common genetic factor, or some other explanation, may be responsible,⁵⁹ but this does not legitimate the known harm caused by prejudice and stigma.

Something can be done about stigma and prejudice, not least within Christian churches.⁶⁰ Indeed, one would imagine that this should be something about which Christians might be especially concerned to take action, given the teachings of Jesus on love of neighbour. Despite all of this, there is a controversy. For some Christians it seems that there must another reason why gay and lesbian people experience mental health problems. Illustrative of this is a quotation from Stanton Jones, a Christian psychologist, asserting that homosexual orientation “cuts against a fundamental, gender-based given of the human condition, thus causing distress”.⁶¹

It is not entirely clear what it might mean to assert that homosexual orientation, experienced by those concerned as a given over which they have no choice, “cuts against a fundamental... given of the human condition”. It is not so much a scientific explanation as an assertion that things shouldn’t be this way. Scientifically, we observe, things simply *are* this way. The statement is unhelpful because it implicitly appears to place blame for this state of affairs on the very people who are experiencing the distress, rather than acknowledging the scientific evidence that demonstrates the harm caused by others who choose to treat them badly.

Sexual Orientation Change Efforts (SOCE)

The belief held by many Christians that homosexuality is fundamentally wrong has led to extensive efforts to bring about changes of sexual orientation. Such interventions have been variously referred to as “conversion therapies”, “reparative therapies”, or “gay cures”, but they are not always professionally based and the de-medicalisation of homosexuality has left no diagnostic condition in need of treatment. The terms “therapy” or “cure” are inappropriate, and “conversion” has religious connotations. Such interventions are therefore now better referred to as sexual orientation change efforts (SOCE). Scientific evidence supports the assertion that such efforts are both ineffective and

⁵⁸ M. L. Hatzenbuehler, K. M. Keyes, and D. S. Hasin, "State-Level Policies and Psychiatric Morbidity in Lesbian, Gay, and Bisexual Populations," *Am J Public Health* 99, no. 12 (2009).

⁵⁹ See, for example, the discussion by J. Michael Bailey, "Homosexuality and Mental Illness," *Archives of General Psychiatry* 56, no. 10 (1999). and a twin study by B. P. Zietsch et al., "Sexual Orientation and Psychiatric Vulnerability: A Twin Study of Neuroticism and Psychoticism," *Arch Sex Behav* 40, no. 1 (2011). which concludes that common genetic factors may be implicated.

⁶⁰ See, for example, Steve Chalke, Ian Sansbury, and Gareth Streeeter, *In the Name of Love: The Church, Exclusion, and Lgb Mental Health Issues* (London: OASIS, 2017).

⁶¹ This quote, taken from a book to which Jones contributed, was reproduced in the Pilling Report (p63).

potentially harmful.⁶² As a result, many professional organisations have issued statements to the effect that SOCEs are unethical and contrary to good practice.⁶³

It is sometimes, correctly, pointed out that there are many publications in which evidence is presented of change of sexual orientation from homosexual to heterosexual.⁶⁴ For example Robert Spitzer,⁶⁵ an eminent psychiatrist and researcher, gave an account of 200 individuals who reported at least some change from homosexual to heterosexual orientation following therapy. However, in 2012, Spitzer published a retraction of his findings, and an apology to the gay community.⁶⁶ The problem as he saw it was that self-reported accounts of change may not be reliable for a variety of reasons. Subjective reports of such matters will always be to some degree unreliable, but in this case they are especially so. Participants have very good reasons for wanting to demonstrate (to themselves and others) that they have changed. Focussing only on those who report change toward heterosexual orientation inevitably biases findings in favour of those who want to believe that they have changed.

It would, in theory, be possible to conduct a randomised controlled trial within which the efficacy of SOCEs could be evaluated using objective criteria, including (in men at least) physiological measures of arousal. This has never been done; nor will it ever now be ethically possible to conduct such a study. In fact, larger studies that have been conducted suggest that in the longer term the vast majority of people do not fundamentally change in response to SOCEs. Furthermore, they often experience these interventions as harmful and unhelpful.⁶⁷ The virtually unanimous scientific consensus is that sexual orientation is highly resistant to change.

⁶² Bailey et al., "Sexual Orientation, Controversy, and Science," 86; Robert J. Cramer et al., "Weighing the Evidence: Empirical Assessment and Ethical Implications of Conversion Therapy," *Ethics & Behavior* 18, no. 1 (2008); Ariel Shidlo and Michael Schroeder, "Changing Sexual Orientation: A Consumers' Report," *Professional Psychology: Research and Practice* 33, no. 3 (2002); Jack Drescher, "Can Sexual Orientation Be Changed?," *Journal of Gay & Lesbian Mental Health* 19, no. 1 (2015); American Psychological Association, *Report of the American Psychological Association Task Force on Appropriate Therapeutic Responses to Sexual Orientation* (Washington DC: American Psychological Association, 2009)..Julianne M. Serovich et al., "A Systematic Review of the Research Base on Sexual Reorientation Therapies," *Journal of Marital and Family Therapy* 34, no. 2 (2008).

⁶³ American Psychological Association, "Guidelines for Psychological Practice with Lesbian, Gay, and Bisexual Clients," *Am Psychol* 67, no. 1 (2012); British Psychological Society, *Guidelines and Literature Review for Psychologists Working Therapeutically with Sexual and Gender Minority Clients* (Leicester: British Psychological Society, 2012); David Scasta and Philip Bialer, "Position Statement on Homosexuality," (American Psychiatric Association, 2013); British Psychological Society, *Guidelines and Literature Review for Psychologists Working Therapeutically with Sexual and Gender Minority Clients*; Royal College of Psychiatrists, "Royal College of Psychiatrists' Statement on Sexual Orientation," (London: Royal College of Psychiatrists, 2014).

⁶⁴ The literature providing evidence of such change has been reviewed by James Phelan, *Successful Outcomes of Sexual Orientation Change Efforts (Soce): An Annotated Bibliography* (Charlestown, SC: Practical Application Publications, 2014). Whilst this is not a peer reviewed publication, and is somewhat uncritical of the literature, it does provide a helpful bibliographic resource.

⁶⁵ Robert L. Spitzer, "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, no. 5 (2003).

⁶⁶ "Spitzer Reassesses His 2003 Study of Reparative Therapy of Homosexuality," *ibid.* 41, no. 4 (2012).

⁶⁷ One of the best and largest studies to date, was undertaken by John Dehlin amongst Mormons who had undergone SOCEs: Kate Bradshaw et al., "Sexual Orientation Change Efforts through Psychotherapy for Lgbq Individuals with the Church of Jesus Christ of Latter-Day Saints," *Journal of Sex and Marital Therapy* 41, no. 4 (2015); J. P. Dehlin et al., "Sexual Orientation Change Efforts among Current or Former Lds Church Members," *J Couns Psychol* 62, no. 2 (2015). Out of 1612 participants, less than 4% reported any change of core same sex erotic attraction. More than a third reported moderate to severe harm.

Conclusions

Science has helped us to realise that we have sometimes misunderstood scripture. In order to read scripture well, we need to read it alongside the book of nature. Each book helps us to interpret the other better. Sometimes, our reading may challenge previously held traditions of interpretation, but only if we hold tradition to have a higher place than either scripture or reason should we hold fast to the errors of the past and resist change. Science does not challenge the authority of scripture but only human misinterpretations of it. Understanding debates about human sexuality within this context may helpfully assist us to revise our understanding of what scripture teaches.

Professor Cook is a member of the Social and Biological Sciences Thematic Working Group, which is one of a number of thematic groups working under the aegis of a Coordinating Group to formulate the proposed Episcopal Teaching Document on Human Sexuality for the Church of England. The views expressed in this paper are entirely his own and are offered only as a basis for discussion. They do not reflect the views of the Working Group, or of other members of the Group. However, grateful thanks are offered to other members of the group for critical and constructive conversations which have played a formative part in the writing of this paper.

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