Chapter 2

'GOOD FENCES MAKE GOOD NEIGHBOURS': WHY THE DIFFERENCES OF SCIENCE, RELIGION AND THEOLOGY MUST NOT BE BLURRED

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There is no such thing as science, as there is no such thing as theology.[1] Both are abstract general terms, and it takes careful consideration not to misunderstand them as references to quasi-objective entities or even quasi-agents acting in history and culture. When we speak of science we refer to certain practices, communities, institutions and a whole variety of methods and bodies of knowledge, and at the same time we refer to discourses in which the label 'science' is used as a value-laden expression for certain ways to see reality. Discourses on science and religion regularly suffer from distortions because they compete for public attention and belief formation, and mix facts with values. When in the following I refer to science or the sciences, I hope that the context will clarify which aspect of what we call science I am referring to. More or less the same applies to the terms religion and theology.

As a term, religion in the modern sense was coined in early modernity. Its pre modern Latin meaning referred to appropriate worship, but not to sets of beliefs. Only with early enlightenment thinking did religion as a generic term become common, claiming that it refers to a natural kind of which all historical religions are exemplifications. Today, however, religion refers to very different kinds of phenomena, such as ritual practices, dietetic regulations, belief systems, social codes

1. With this fundamental thesis and with my metaphor of fences and territories I largely concur with, among others, Peter Harrison's view that 'science and religion are not natural kinds. ... Rather they are ways of conceptualizing certain human activities – ways that are peculiar to modern Western culture' (Harrison 2015, 194). However, I don't fully subscribe to his view of religion and science as turning from inner virtues to sets of cognitive thoughts and beliefs in modern times. This seems to be the case for the term 'religion', but somewhat loses sight of the cognitive and constructive efforts of early Christian as well as medieval thinking.

and so on from a Western perspective. As a loanword from Latin in most European languages, 'religion' as a concept usually lacks equivalents in languages outside the European context. It is by no means self-evident to what we refer when we speak of religion. Again, the term denotes certain practices, communities, institutions and very different sets of beliefs, and at the same time it is ubiquitous in discourses in which religion stands for certain ways to see reality, for example as open towards different notions of transcendence over and beyond the factual world. Religion must also be distinguished from theology, which itself can be part of religion insofar as it critically and constructively reflects the respective religion's truth claims from within its tradition, and builds a body of doctrine. But there are certainly religions that deny the importance of critical and constructive reflection with regard to their own tradition and practice, and there are forms of theology which have developed very critical attitudes towards traditional religious convictions. In its institutional form at universities or other institutions of higher learning it is again an invention of modern Western societies and has also taken different paths in different contexts.[2] And of course, since they are abstract general terms, religion, theology and science cannot interact as such – be it in conflict, dialogue or integration (see Barbour 1974). Only people can communicate and participate in public and academic discourses on scientific and religious world views, and they do so in very different situations, under very different premises and with very different goals. Therefore, if we want to reflect on the interaction and challenges between science and theology, with theology as the reflective form of religion, we have to consider carefully the differences between the fields and the different levels of possible discourses. I begin by explaining my understanding of science and theology.[3]

What Is Science?

Modern science has developed as a set of explanatory and theoretical disciplines. At their core, these disciplines try to develop formal, mathematical models of explanation of natural phenomena. Natural phenomena are those phenomena which can be identified and measured in space and time by human beings. Often these are experiments in a laboratory, but science can also refer to descriptions of, for example, planetary motion or the behaviour of primates in nature. In any case, scientific disciplines deal with objects and facts of reality in a third-person perspective, and they aim at describing those facts and objects by theories which

2. This is illustrated by a series of essays on the development of the dialogue between science and religion in different countries and cultures around the world, which Zygon published in 2015. See the editorial in Drees (2015, 151–4).

3. My vision of a clear distinction between science and theology/religion is by no means new or original. In my own way I try to argue in favour of concepts such as those of Alfred N. Whitehead (see Whitehead 1925), and of Stephen J. Gould, who invented the label 'Nonoverlapping Magisteria' (NOMA) for his view (Gould 1997, 16–22; 60–2).

ideally allow for mathematical modelling. In this respect, modern science is different from pre modern philosophy of nature, because it does not claim to understand the 'nature' of things, but limits itself to descriptions of functional relations between objects like relations of cause and effect. In short, science has moved away from concepts of substance and things towards concepts of measurement and function (see Cassirer 1923).

This methodological approach is now highly sophisticated and diversified, and it includes a whole set of skills and practices. Simple reconstructions of scientific method as they were given by the school of logical positivism, which reduced empirical method to the interplay of empirical observation providing facts with formal modelling of theory, must be considered incomplete and simplistic. Historical contingency, the community of scientists, semantics and metaphors, limits and peculiarities of formal models as well as pragmatic categories which Michael Polanyi referred to as personal knowledge have to be taken into account to get a fuller and more realistic picture of what we call science today.[4] We cannot go deeper into the philosophy of science, into scientific method, its critique and possible classifications of different scientific disciplines. A short list of different aspects must suffice here to get the flavour of the complexity and the overall direction of scientific method and scientific discourse:

- Science develops mathematical models of relations between empirically controllable parameters which allow for the prediction and manipulation of those parameters (laws of gravitation, laws of chemical binding, descriptions of developmental physiology, etc.);
- Science combines and differentiates these relations and infers further lemmas in order to develop larger and coherent bodies of theory for certain fields of phenomena and manipulation under different conditions (cinematics, organic chemistry, etc.);
- Science collects and classifies phenomena and relates them to theoretical bodies (geology – geochemistry, behaviour of insects – genetics – biochemistry, etc.);
- Science develops frameworks of empirically testable and mathematically describable models which allow for the coherent explanation and eventually prediction of historical phenomena (evolutionary biology, geology, cosmology, ecology);
- Science combines different theoretical models with expertise in technical engineering in order to develop technologies (space industry, chemical industry, medicine, pharmacy, computer technology, etc.).

One could add ever more scientific approaches to different phenomena. What they all have in common are two features: they try to develop models of the relations among certain phenomena which can be represented by functional mathematical

4. Polanyi emphasizes the role of the tacit dimension in knowledge, by which we know *how* to do things and which often exceeds knowing *what* we are doing (see Polanyi 2009).

models; and they put all these models to the test by empirical falsification and verification. In short, mathematical modelling and empirical testing lie at the heart of any scientific involvement with reality. Science does not map a given reality, but develops functional means of dealing with its (amazing!) reliability and algorithmic compressibility regarding certain of its aspects. Science tries to answer 'why' and 'how' questions with regard to empirically identifiable phenomena. Thus it tries to provide reliable and objective knowledge in the sense that it does not vary arbitrarily with different individual and subjective attitudes, feelings, moods, preferences, cultural settings and so on. Nonetheless it is deeply embedded into culture, language, history and other contingencies, and it is organized and pursued by a wide variety of individuals.

On a professional and academic level there is a growing diversity among the sciences today. Scientists know more and more about more and more narrow and specialized fields of research and expertise. The age of polymaths of science is definitely over, if there ever was any. And even those individuals who are celebrated as iconic figures that can speak for 'science' in general, as was the case with Albert Einstein and is the case, perhaps, with Stephen Hawking or Richard Dawkins, actually represent very narrow fields of scientific knowledge. No individual is able to assess the latest theories of, say, quantum physics, inflationary cosmology, genetics, neuroscience and artificial intelligence on the level of a well-informed researcher and integrate them into one coherent body of scientific knowledge. There is a need for transdisciplinary discourse and transdisciplinary translation *within* science. Biologists need to import expertise from computer sciences, brain researchers need to combine biochemistry, biology and physics with highly sophisticated technological equipment such as scanners for functional magnetic resonance imaging and so on. And ever more hybrid fields of science develop, which reach into historical, linguistic, psychological, sociological and other fields of academic disciplines usually not addressed as natural sciences. This even extends to religious studies. With the development of cognitive studies of religion, which explain the cognitive functioning of religious symbols and rites, science contributes to the interpretation of religious phenomena. Combined with evolutionary psychology, these interpretations are used to develop theories about the origin of religions, their historic development and their future fate, thus trying to turn religion into a scientific subject matter.

What is presented as the modern *scientific world view* in public discourses or, less rigorously, as a possible scientific account of reality does not follow directly from scientific knowledge or research, but comes in forms of integrative, generalized and simplified narratives that bring together quite heterogeneous aspects of general accounts of scientific knowledge on very different levels of corroboration and by means of tentative extrapolations.[5] I think it is safe to say that often in

5. A recent example is the bestselling books of the Israeli historian Yuval Noah Harari, who claims to ask very big questions and then answer them not by reference to religious authority but scientifically. For him that is a disjunctive alternative (see Harari 2015a, b).

present debates on science and religion it is not that scientific evidence stands against ignorant and naive religious prejudices, but that different narratives battle for recognition in public discourses. Thus it is as much a harsh oversimplification to contrast science and religion as two opposite, mutually exclusive, separate and block-like sets of convictions as it is to mingle them into one indiscriminate continuum of knowledge acquisition. There is a clear-cut, categorical boundary between scientific and religious engagements with reality as well as their theological reflection as will get clearer, I hope, with the next two sections.

What Is Theology?

Typically, theology is an academic discipline taught at universities, seminaries and other institutions of higher learning. Taken literally ('theo' as derived from the Greek term θεός = God or divine, 'logy' as derived from the Greek term λογία, meaning narration or critical account), the term refers to discourse on God or the divine. Consequently, Augustine of Hippo defined the Latin equivalent, *theologia*, as 'reflection or discourse on the divine'.[6] Since God or the divine is neither an entity in space and time nor an abstract formal function, the approaches towards God vary immensely, and they vary not only among different faith traditions, but also from individual to individual. And they vary in such a way that they do not form a coherent body of knowledge or disciplines. 'God' refers to very different concepts in different traditions.

I myself write from a perspective within a specific theological tradition. I engage in Christian theology as a Western Protestant theologian. Protestant theology takes its orientation from certain fundamental principles developed in the reformation period in the sixteenth century, which are often labelled with the fourfold *sola fide*, *sola scriptura*, *sola gratia* and *solus Christus*. These slogans stand for the specific focus of Protestant theology which is the gospel of God's salvific action in Jesus Christ, in which God has transformed and continues to transform the life of human beings towards the realization of faith, hope and love. Theology in this sense is the reflection on this ongoing process, and with its reflection it seeks to find adequate expressions for the meaning of Jesus Christ with reference to present interpretations of reality and human existence, for the understanding of human beings in their relation to God and to one another, and for shaping the Christian community accordingly.

Thus the starting point of Christian theology, at least in its Protestant version, is not metaphysical theory, but the reflection of the salvific activity of God in Jesus Christ and the ways in which human beings understand themselves as part of this activity. This was already the central focus in the Reformation era when, for example, Calvin stated that theological wisdom 'consists almost entirely of two parts: the knowledge of God and of ourselves' (Calvin 1559, 1, my translation), or

6. In *De Civitate* VIII, 1 Augustine speaks of theology as *de divinitate ratio sive sermo*.

when Luther defined the proper subject of theology in his explanation of Psalm 51 as 'the human being guilty of sin and condemned, and God the Justifier or Saviour' (Luther 1914, 328, my translation). Thus Christian theology begins with *faith seeking understanding*, and it critically deals with scripture and tradition in order to unfold the Christian faith and its implications in relation to modern interpretations of human existence, reality and knowledge. If it does so within the context of a university or other modern academic institutions, it must engage in discourse with other faith traditions and with secular, naturalist, agnostic and atheist views of human existence, reality and knowledge, and it must account for its own presuppositions.

It should be obvious that theology in this understanding is not and cannot be an explanatory reconstruction of certain phenomena of reality in a third-person perspective, but is always taking first-person perspectives (such as faith as basic trust and personal involvement) and second-person conditions (such as expressivist, non-designative aspects of language and semantics, cultural formations and hermeneutical approaches to verbal and non-verbal communication) into account. Theology as a reflection of faith does not aim at inducing or proving faith itself, although it is, of course, aiming at coherence and plausibility. God's existence, for example, cannot and needs not to be demonstrated (see Evers 2015), but its character, challenge and consequences must continuously be unfolded. Unlike science, which exercises strict methodological discipline in order to verify or falsify hypotheses of explanation of distinct phenomena in space and time, theology engages in open discourses which aim at integrating third- and first-person perspectives with critically reflected and elucidated second-person conditions. And its goal is not an explanation of regularities, which in some cases might allow for technical manipulation and utilization, but an exploration of reality and an orientation of human beings and communities towards participation in God's transforming presence.[7]

There are, of course, alternative understandings and ways of doing theology, some of which see science and theology as complementary partners which should closely interact and provide mutual support for their knowledge and theories, so that both intellectual enterprises together provide a fuller picture of reality. Thomas F. Torrance has argued for theological science, while Alister McGrath has written three volumes on scientific theology (Torrance 1969; McGrath 2001; 2002; 2003). And Wolfhart Pannenberg has developed theology as science of the divine ('Wissenschaft von Gott'), in which God as 'the all-determining divine reality could be measured against experienced reality' because theological 'assertions must be tested against reality' (Pannenberg 2008, 19, 21). My understanding of theology, however, is driven by the conviction that it does neither theology nor science good if both intellectual enterprises are not carefully distinguished and, to a large degree, kept apart. Any 'mixo-scientifico-theologia' or 'mixo-theologico-scientia'

7. Here I am indebted to and consider myself in close connection with Ingolf Dalferth's understanding of theology, (see for example Dalferth 2016; 2006).

is a helpless confusion which is trapped in futile and aporetic arguments about how to reconcile data and theories gained by scientific method with phenomena valid in a first-person perspective or with concepts important for human second-person relations. One can study these endless arguments for example in debates on human freedom over and against the findings of brain research or the concepts of meaning and teleology (see Nagel 2012). And they reoccur in debates about the question of whether or not cognitive studies of religious concepts prove or disprove their validity.

Fences: Science and Theology Distinguished

The proverbial title of this chapter is quoted twice in the well-known poem 'Mending Wall' by twentieth-century American poet Robert Frost (1874–1963). Despite its simple language and the rural scene it unfolds, Frost's poem shows a complex structure and addresses several themes at different layers, such as human fellowship and the role of boundaries in human society. One aspect of his description of human fellowship is given in the title of his poem and is reflected in the opinion and the behaviour of the neighbour with whom the narrator of this poem interacts. Every year they meet to rebuild the stone wall between their two farms. Thus the poem insinuates that fences have to be *reconstructed* and have to be agreed upon again and again. Transferred to our subject we can state that in changing historical constellations, with reference to different challenges and presuppositions and across different cultural formations, we must constantly distinguish empirical explanations from ways of engaging with reality, which are shaped by personal and inter-personal factors. Thus I suggest that a basic requirement for any fruitful exchange between science and theology is a careful distinction between their different engagements with reality and their relations to existential human questions. Only on an abstract level are science and theology two of a kind as human enterprises, but on any pragmatic and methodological level they are significantly and intrinsically different. Therefore, as a first step in developing a more comprehensive perspective on the possibilities and limits of any mutual exchange between scientists and theologians, I claim that both disciplines are specific engagements with reality based on certain practices of relating to different realms of phenomena.

I speak of different engagements with or different approaches towards reality rather than use the metaphor of different 'perspectives'. That metaphor is tempting, but also potentially misleading (see Dalferth and Stoellger (2004) for a collection of different perspectives on perspective, as well as Mühling in this volume). It is tempting, because we cannot take multiple perspectives at the same time, and thus this metaphor reflects that science and religion are different and mutually exclusive but at the same time might refer to the same reality and might be related to each other. Thus they could interact by asking: Why do you see what I cannot see and vice versa? How can I change my perspective so that I see things which you have already seen? Geometrically and topologically it is essential to take different

perspectives in order to develop a more comprehensive picture of reality. And as in the case of binocular vision, two perspectives combined allow for adding the third dimension to two-dimensional perception. But because of this insinuation the metaphor of perspective is also misleading. It suggests that there is a given reality independent of both perspectives to which they jointly attend to. And it suggests that you can get a more comprehensive picture once you know how to combine both perspectives. All this is not the case if one deals with science and theology. At the heart of both disciplines are not different ways of mapping a given reality, but different ways of practice, different ways of actively getting involved with reality. And this explains why, for example, scientific knowledge has to be transformed into narratives in order to be integrated into a comprehensive view of reality.

The fundamental methodological difference between science and religion is such that they do not complement one another. The combination of their respective claims, theories and methodologies is not a step towards a more *complete* explanation of reality. They do not investigate different segments of reality, which in a synthetic theory on a higher level can be put together like pieces of a jigsaw puzzle, but they refer to reality in different ways. This implies that the different 'perspectives' on reality as developed in science and religion are not held together by complementary references *to* reality, but by the fact that they are both activities with which human beings are actively involved *in* the process of reality. As I have already suggested, the main point of difference between scientific approaches and religion as well as its theological reflection lies in science's strict limitation to empirical investigation of measurable states of affairs in a detached third-person perspective and to reconstruct these investigations with functional models and descriptions, whereas religion is a way of finding meaningful orientation for human existence by integrating objective factual knowledge with personal intuitions, intentions and reflections in a first-person perspective and expressing and actualizing these perspectives in second-person relations. Thus religion and theology as its reflective self-reference aim at discursive, critical and argumentative forms of communication. They address *people* and intend to have an impact on individual conducts of life and on communities at different social levels (families, congregations, societies). And since religion and theology in a Christian sense eventually aim at communicating the gospel of the presence of God's kingdom and want to participate in its coming, they also – on a fundamental level – must be understood as a form of prayer, so that they also – directly or implicitly – address God whom they want to serve and whom they cannot control or verify.[8] Theological accounts of human existence and reality at large are not detached descriptions and theoretical explanations of certain states of affairs, but are attempts to effectively and creatively express the Christian faith as a way of

8. See Barth (1963), ch. 14, for example: 'Theological work does not merely begin with prayer and is not merely accompanied by it; in its totality it is peculiar and characteristic of theology that it can be performed only in the act of prayer' (160).

exploring the splendour, the challenges and the dark sides of human existence and getting involved in establishing relations between human beings and the divine.

If this is true, then it also explains the often bemoaned asymmetry of exchange between science and theology, which actually is quite appropriate. Religion and theology must take means of objective experience, factual states of affairs and empirical, scientific knowledge into account if they don't want to become illusionary and unable to fulfil their communicative task. They would lose what Ian Ramsey described as the 'empirical fit' (Ramsey 1965, 59). Religious language as well as its theological reflection must in one way or the other 'incorporate both the facts and features of the world ..., and something over and above those facts and features' (Ramsey 1973, 60).[9] And since today any valid and realistic understanding of human existence and reality at large is informed by scientific knowledge – for some in more detailed ways, for others rather superficially – religious world views are challenged by scientific knowledge and theology must engage in qualified debates with scientific research and method. However, while theology as an academic discipline today must include reflections on scientific knowledge and methodology, science does not have theological evaluation among its methods or subject matters.

Thus I argue for *rigorous and self-critical intersubjective science* which carefully applies strict methods of empirical corroboration and uses mathematical modelling for its engagement with those aspects of reality that can be measured and functionally explained. And it is self-critical insofar it allows for verbal accounts of its methods, theories and data that reflect the bearings, limits and constraints of its empirical underpinnings as well as its theoretical models and extrapolations. Thus it is part of its rigour to criticize misconceptions of science which attempt to force explanations in any field of human knowledge into models derived from one or another particular science. Rigorous science is relieved from demands to provide meaningful world views, and it is free to concentrate as closely as possible on functional explanations within certain methodological frameworks. Scientific abstinence from religious-like life-forming claims and a hesitance, by its own methods, to finally decide on religious, ideological or ethical matters is in itself a positive form of a respectful scientific attitude towards reality, which must be much more valued by representatives of religions as well as theologians. A rigorous, but non-ideological scientific attitude is the best friend of open, critical and constructive philosophical and theological discourse. Interest in nature and its phenomena simply for the sake of knowledge, the joy of discovery, the sense of awe of the mysteries of nature, which is increased rather than diminished with every unravelling discovery, the humility which often goes hand in hand with the interplay between falsification and success in research, the rigour and enlightening clarity of careful empirical and theoretical method, the striving

9. This is what Ramsey called 'cosmic disclosure' and what German hermeneutic theologians addressed as 'experience with experience' (see for example Ebeling 1975, 3–28; Webster 1986, 124–5).

towards undistorted contact with physical reality while leaving behind personal preferences, the great, revelation-like breakthroughs in the history of science – all that and much more is part of the grandeur of science and is in fundamental accordance with a consequent distinction between science and theology.

And I argue for *realistic theology* informed by science, but not for theological realism in the sense that theology develops descriptive concepts and models 'referring to the *reality* that is God and God's relation to humanity', so that these models 'depict reality' (Peacocke 1984, 40, 44). Theology must be realistic in the very broad sense that it respects referential aspects of reality which are to certain degrees independent of our conceptions of them, but it is scientific research that must develop adequate methods to identify such aspects. Even more, realistic theology presupposes that many of our claims about the world are true or false and not just epistemically successful or unsuccessful. According to Putnam (1978), realism involves three claims: (1) entities exist and matters of facts hold in reality independently of human beings (ontological claim); (2) truth is a semantic category, and when we make true claims about reality this is not a matter of convention, although we are often not in a position to verify or falsify respective propositions (semantic claim); (3) reality can be apprehended and understood in its regularities, some of its entities and fundamental structures (epistemological claim). However, this view also implies that results of scientific investigation of reality cannot be identified with God, and that on the other hand the notion of God does not improve the explanatory power of functional descriptions. There are no divine matters of fact or supernatural entities which science can identify or empirically verify. That does not imply that religious accounts of reality and their critical theological reflection are mere projections or only expressivist inner attitudes towards reality. A realist's rejection of theological realism does not necessarily imply theological anti-realism, but is in search of pluralist and pluriform perspectives on reality which allow for different and distinguished ways of getting in contact with it so that we may find meaningful ways to express the orientational relevance of faith for human existence.

This embraces the attitude that in scientific research we investigate reality *etsi deus non daretur* (as if God didn't exist), because if we want to avoid superstitious or magic concepts of the divine, God is not and cannot be a functional parameter among others, which can be pinned down by empirical method.[10] Neither is the

10. This formula is usually ascribed to Hugo Grotius, although it is not found explicitly in his work and the idea behind it can be traced back to late medieval times, when some theologians considered that it might be a property of a perfectly created world that it exists as if there were no God. Hugo Grotius justified the validity of natural ethical law with this idea. Natural law is valid 'though we should even grant, what without the greatest Wickedness cannot be granted, that there is no God, or that he takes no Care of human Affairs: *etiamsi daremus, quod sine summo scelere dari nequit, non esse Deum, aut non curari ab eo negotia humana*' (Grotius 1720, Prolegomena No. 11, English translation taken from Tuck 2005, 89).

distinction between God and creation a distinction we could draw within our experiential world by scientific means, nor do religious convictions necessarily facilitate scientific investigation. Religious convictions might be a source of inspiration, as it was the case with many naturalists of early modernity, or on the contrary they might block creative imagination and the courage to think along new ways.[11] And while the cognitive attractiveness and behavioural significance of certain religious concepts may become subject of scientific investigation, truth claims in connection with religious world views as such cannot in all cases be settled on scientific grounds, because they usually don't provide explanations of causes and conditions, but explications of meaning and significance. This 'reminds us that the word "God" does not work as a high-grade scientific word at all. It is *not* a "hypothesis". God-sentences do not belong to the logic of science' (Ramsey 1952, 9). By definition, religious convictions can never be part of scientific methodology and argument, although they may influence actual scientific research. Theology reflects on the significance and meaning of religious and other perspectives on reality which try to give meaning to human existence and provide means of orientation to individuals and communities with reference to God, and 'reference to God is not reference to an explanatory principle but to the focal point of ultimate orientation' (Dalferth 2017, 75). The divine is not given, either as an external referential entity or as an inner spiritual fact. God is not an identifiable, separable object. Scientific attention cannot be directed towards this object and then find anything out about it, because God cannot be separated from God's environment. God does not 'explain' anything, because in a theological perspective God is the ground of being (see Tillich 1973) and thus in a sense the ground of everything. This, however, also applies to other all-encompassing notions like world or reality, insofar as they want to conceptually identify the realm of literally everything that exists. Even the universe or the cosmos or any scientific theory of everything is always 'smaller' (not in a topological, but a categorical sense) than reality, because they already sketch reality in ways relative to certain methods of investigation (see Gabriel 2015). With all our methods, including scientific ones, we only explore certain provinces of 'everything' in specific perspectives. To start with, there are blind spots in any such approach, which refer to the conditions of the possibility or the intentions of the corresponding perspective. The question, for example, why cosmology fascinates cannot be answered by finding out more about the universe. As Thomas Nagel famously put it, there is no 'view from nowhere' (Nagel 1986), and an overview of the whole is impossible. And not even by this

11. It can be argued that that was the case with Albert Einstein. What he called his cosmic religion seems to have inspired him to develop his special and general theory of relativity, but on the other hand it seems to have blocked him in later debates on quantum theory, when he repeatedly stated that God does not play dice, so that in a letter dated from 15 April 1954 Wolfgang Pauli wrote to Max Born about Einstein's stance in the debate on quantum mechanics: 'I entirely agree with your opinion that Einstein has "got stuck in his metaphysics"' (Einstein, Born and Born 1971, 116. See also Evers 2006, 5–27).

property, that if God exists, then God exists in an all-encompassing manner, can God be identified, because then the term would lose its distinctiveness and would be indistinguishable from terms like reality, world or nature.

But just as the meaning of human life arises out of our pluriform and orientational engagement with infinite reality, in which we are fortunately able to participate, so religious and theological approaches to reality claim that by doing so we also participate in God, who is present always and everywhere and who communicates in complex ways with human beings – to use a phrase of Lutheran eucharistic theology – *in, with* and *under* the conditions of finite reality. With reference to knowledge of God, we are dependent on God's specific involvement with reality. That is what I would call revelation, and that is what makes theology possible, not the manifestation of super-scientific facts, the superiority of a better explanation or the tentative successful testing of the implications of religious truth claims. However, in order not to become a meaningless, futile and illusionary enterprise, theology not only has to critically deal with its own religious traditions and religious codes of conduct, but must be apt to relate to different human engagements with reality including science as an important set of tools to understand and shape our reality.

This includes the conviction that the developments of modern science with their challenges for religious world views, traditional theological concepts and the debates that go along with them to this very day, are in the long run helpful for religion and theology to identify their own specific involvement with reality in the perspective of faith. Such developments prevent religion from turning into fundamentalist ideology, and are helpful for science to accept that there is no such thing as an undisputed scientific world view of everything. While well-defined scientific problems can be solved, philosophical as well as theological discourses are in principle endless. There is no final explanation. With regard to orientational knowledge including religious and secular world views we interpret explanations and relate them to broader interpretations of human existence, and we do so against the changing background of contingent historical situations and across different cultural settings. The overall framework of human life form and practice, which in modernity differentiated into scientific third-person perspectives, a rich variety of subjective first-person attitudes and different narratives, world views and ideologies, is a self-referential structure. It cannot be justified by further explanations and cannot be traced back to foundational ultimate reasons. The challenge is that there is no *final* explanation. That is what sets science and religion apart and at the same times makes it indispensable for any critical and constructive theology to relate to scientific knowledge at all levels.

Science and Theology as Neighbours

The above-mentioned poem by Robert Frost to which the title of this chapter refers begins with the line: 'Something there is that doesn't love a wall', and repeats this line in the final part of the poem. And indeed, this applies to our debate on

science, religion and theology as well: there is something – throughout history as well as in present debates – that does not love the clear-cut and professional separation which we just discussed. We are all human beings, and every kind of knowledge tends towards views and understandings of reality which integrate facts and meaning. There is no *neutral* ground, but there is *common* ground beyond our disciplinary territories. This common ground is established by language, by narratives, metaphors, practices, media and institutions (like churches and academic institutes of higher learning), where processes of mutual exchange and of belief formation take place. Here the mutuality of exchange is essential.

As we have seen, religion cannot be separated from facts and empirical evidence in the same way that science must be separated from religious hegemony and interests. But with all its methodological discipline and theoretical rigour, science is still a human enterprise trying to explain different aspects of reality by getting into empirically controlled contact with them. It naturally tends towards shaping belief systems, and it naturally tends towards getting hold of religion as well as of other cultural phenomena in scientific perspectives. Sociology, cognitive science and neuroscience of religion, general religious studies, empirical anthropology, the economics and politics of religion and spiritual experiences – these and other disciplines continue to explore ways into the realms of religious beliefs and rites of individuals and communities (as an example of such discourse see Klein 2011). Today these investigations contribute to informed ways of discussing religions and their impact on people's world views, and rightly so. However, attempts by science to replace religion and to substitute theological discourse from within a certain religious tradition with allegedly neutral scientific studies may prove detrimental to science itself, because it does not account for the non-scientific presuppositions which it employs. Here again discourse and mutual exchange may be helpful also for science, when it helps to relieve science from excessive demands and from the temptation to stealthily ally with politics and power.

I have already pointed to some aspects of border traffic between science and theology (see also Polkinghorne 2000). Although good neighbours do not interfere in the other's territory and business, they meet at the border in order to mend or realign it, and sometimes they fight over it. Well-kept fences do not settle conflicts once and for all, but help to allow for a tense but productive interplay of cooperation and conflict, of agreement and dissent. Neighbours visit each other and get shown around the other's territory. They meet outside their own territory, on the market, in the pub, in church or in politics. Thus fences mark, separate and protect territories, but they do not isolate them. By separation and division they also establish relations. It is through boundaries and through negotiating them that we become neighbours. And while fences are intended to prevent assaults, hegemony and intrusion, they also establish neighbourhoods and exchange across borders. And when neighbours leave their territory, they stay neighbours. If science and religion meet *outside* their disciplinary territories, for instance in the academy or in the broader public realm, reflecting their respective contributions to our interpretations of reality, and if they are aware of their respective methodological and disciplinary rigour and limitations, then they

will be able to address one another as neighbours and cultivate comprehensive views of reality by retelling narratives and establishing language games which are effective in expressing meaningful perspectives on human existence and which are appealing to people across disciplines, although the individuals involved may be far from total agreement and will never be able to provide a final explanation.

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