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CHAPTER 31

TOWARD A COMPREHENSIVE INTEGRATION OF SCIENCE AND RELIGION: A POST-METAPHYSICAL APPROACH

SEAN ESBJÖRN-HARGENS
AND KEN WILBER

WHICH SCIENCE? WHICH RELIGION?

There are many exciting conversations occurring across the world at cafés, on campuses, in laboratories, during conferences, and at places of worship, but few are as passionate as the conversation about the relationship between science and religion. This conversation is arising in many contexts: neuroscience finding the

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'godspot' in the brain, the Dalai Lama meeting with scientists to discuss consciousness, the debate over teaching intelligent design versus evolutionary theory in US schools, applying quantum physics to 'prove' mysticism, and the conferences sponsored by the John Templeton Foundation.

These different points of contact between science and religion highlight another reason why this discussion is so energized: everyone has a different meaning of 'science' and a different understanding of 'religion'. As we will see, there are *at least* three common though different meanings of the terms 'science' and 'religion'.

We believe an Integral approach can sort through the different definitions and understandings of 'science' and 'religion' and honour the partial truth claims made by every perspective in this crucial exploration. With an Integral approach we can begin to untangle the Gordian knot of traditional religion and modern science in a post-modern world. In other words, the Integral approach provides a way of truly integrating the many aspects and understandings of science with the many facets and perspectives of religion. And it does this in a way that speaks to traditional, modern, and post-modern understandings of both science and religion. The integral approach that we are aware of that is most capable of this task is *Integral Theory*: a post-metaphysical understanding that relies on the AQAL (all-quadrant, all-level) framework and Integral Methodological Pluralism (IMP).

Integral Theory provides a comprehensive means of integrating the four dimension-perspectives of objectivity, interobjectivity, subjectivity, and intersubjectivity (and their respective levels of complexity). Integral Theory also includes the major methodological families in a way that avoids postulating the existence of pre-existing ontological structures of a Platonic, archetypal, Patanjali, or Yogachara-Buddhist variety.

The goal of this chapter is to outline the ways in which Integral Theory, applying IMP, can provide a successful approach to integrating the disciplines of science and religion. We introduce the Integral approach and the application of IMP. Then we draw on IMP to explain some of the important features of both Integral Science and Integral Religion. Finally, we identify some key considerations for integrating science and religion.

An Integral Approach

Integral Theory is an inclusive approach to today's world, which is often characterized by disciplinary turf wars and clashes between traditional, modern, and post-modern perspectives. Integral Theory offers a framework that is the result of over thirty years of cross-cultural and post-disciplinary scholarship and application (Wilber 1999–2000; 2000*a*, *b*). The Integral model is post-disciplinary in that it can be used successfully in the context of approaches considered *disciplinary* (e.g. helping

to integrate various schools of psychology into Integral Psychology), *multidisciplinary* (e.g. helping to investigate ecological phenomena from multiple disciplines), *interdisciplinary* (e.g. helping to apply methods from political science to psychological investigation), and *transdisciplinary* (e.g. helping numerous disciplines and their methodologies interface through a content-free framework).[1] As a result of its applicability across and within disciplinary boundaries, Integral Theory has received a wide embrace from individuals associated with a variety of fields: art, business, ecology, medicine, finance, consciousness studies, religion, correctional education, criminology, education, psychology, health care, nursing, politics, sexuality and gender studies, social services, future studies, and sustainability, to name just a few.[2]

Often represented by the acronym AQAL, Integral Theory's signature phrase 'all-quadrants, all-levels' is shorthand for the multiple aspects of reality recognized in an Integral approach. There are at least five recurring elements that comprise an Integral approach: quadrants, levels, lines, states, and types. These five components represent the basic patterns of reality that repeat in multiple contexts. To exclude any element in any given inquiry or exploration is to forgo a truly comprehensive understanding. By including these basic elements, an Integral practitioner ensures that they are considering the main aspects of any phenomenonon: all-quadrants, all-levels, all-lines, all states, and all-types.

The first element, *all-quadrants*, refers to the basic perspectives an individual can take on reality: the interior or exterior of individuals and collectives, which is often summarized as the four dimensions of experience (subjectivity), culture (intersubjectivity), behaviour (objectivity), and systems (interobjectivity).[3] Each of these perspective-dimensions is irreducible; each has its own validity claim (truthfulness, justness, truth, and functional fit) and modes of investigation, as indicated in Figure 31.1.

[1] The main distinction between interdisciplinary approaches and transdisciplinary ones is best captured by Julie Klein (1990) when, drawing on Erich Jantsch's work, she argues: 'Whereas "interdisciplinary" signifies the synthesis of two or more disciplines, establishing a new metalevel of discourse, "transdisciplinarity" signifies the interconnectedness of all aspects of reality, transcending the dynamics of a dialectical synthesis to grasp the total dynamics of reality as a whole' (p. 66). For additional information on interdisciplinary and transdisciplinary approaches consult Klein (1990, 1996); Moran (2002); and Nicolescu (2002).

[2] For examples of the many fields that Integral Theory has been applied to, see *AQAL: Journal of Integral Theory and Practice* <www.aqaljournal.org> and Integral University <www.integraluniversity.org>, where more than twenty-five centres (e.g. Integral Art, Integral Medicine, Integral Science, and Integral Religious Studies) are devoted to exploring Integral approaches in their respective disciplines.

[3] The quadrants can represent both the basic perspectives that any individual can take on something (this is called a *quadrivium*—four views) and the basic dimensions of an individual. So while artefacts such as tables and chairs do not have four quadrants (dimensions), they can be looked at from the four quadrants (perspectives).

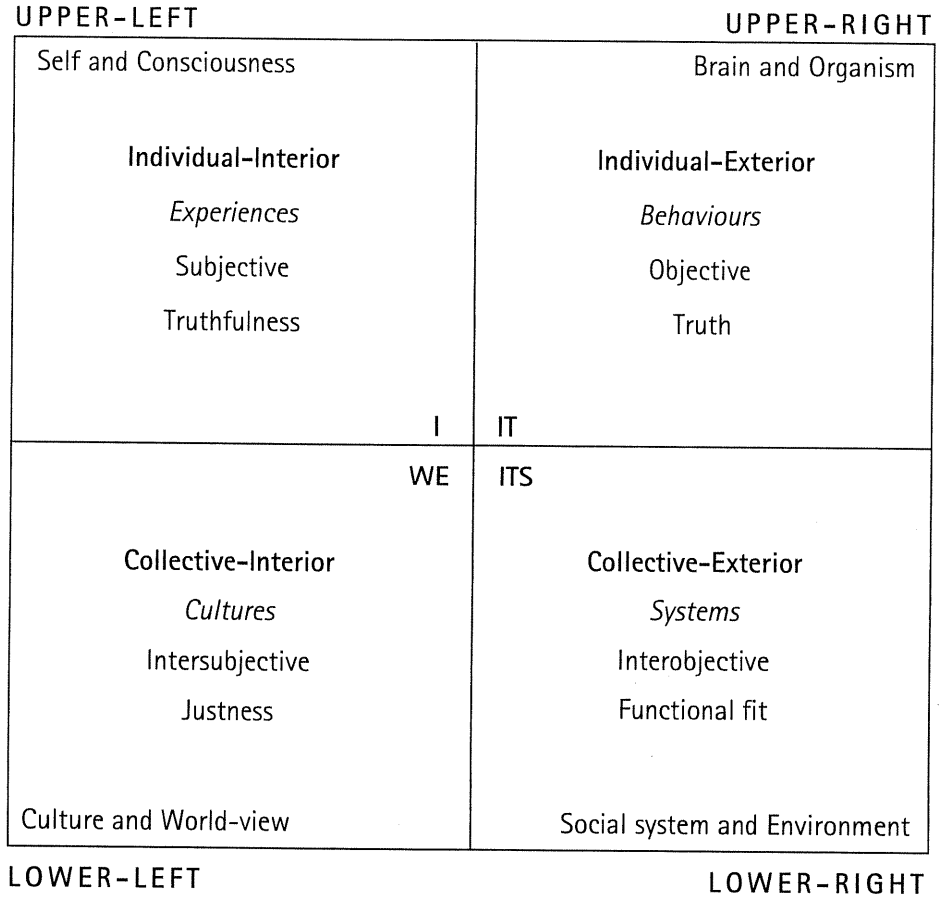

Fig. 31.1. Some aspects of the four quadrants.

The next four elements of the Integral model all arise in each of the four quadrants. *All-levels* are the occurrence of complexity within each dimension (e.g. the levels of physical complexity achieved by evolution in the behaviour quadrant);[4] *all-lines* are the various distinct capacities that develop through each of these levels of complexity (e.g. the developmental features of cognitive, emotional, and moral capacities in the experience quadrant); *all-states* are the temporary occurrence of any aspect of reality within the four quadrants (e.g. the occurrence of weather states in the systems quadrant); and *all-types* are the variety of styles that aspects of reality assume in the various domains (e.g. types of festivals in the cultural quadrant). These five elements are often represented by the AQAL diagram represented in Figure 31.2.

Integral Theory posits that if an approach to science or religion excludes any of these components, it falls short of a truly Integral approach, even if it includes more

[4] Within Integral Theory 'levels' are most commonly used to refer to either the general altitude of complexity in any of the quadrants or specific levels within various lines of development. The context will indicate the usage.

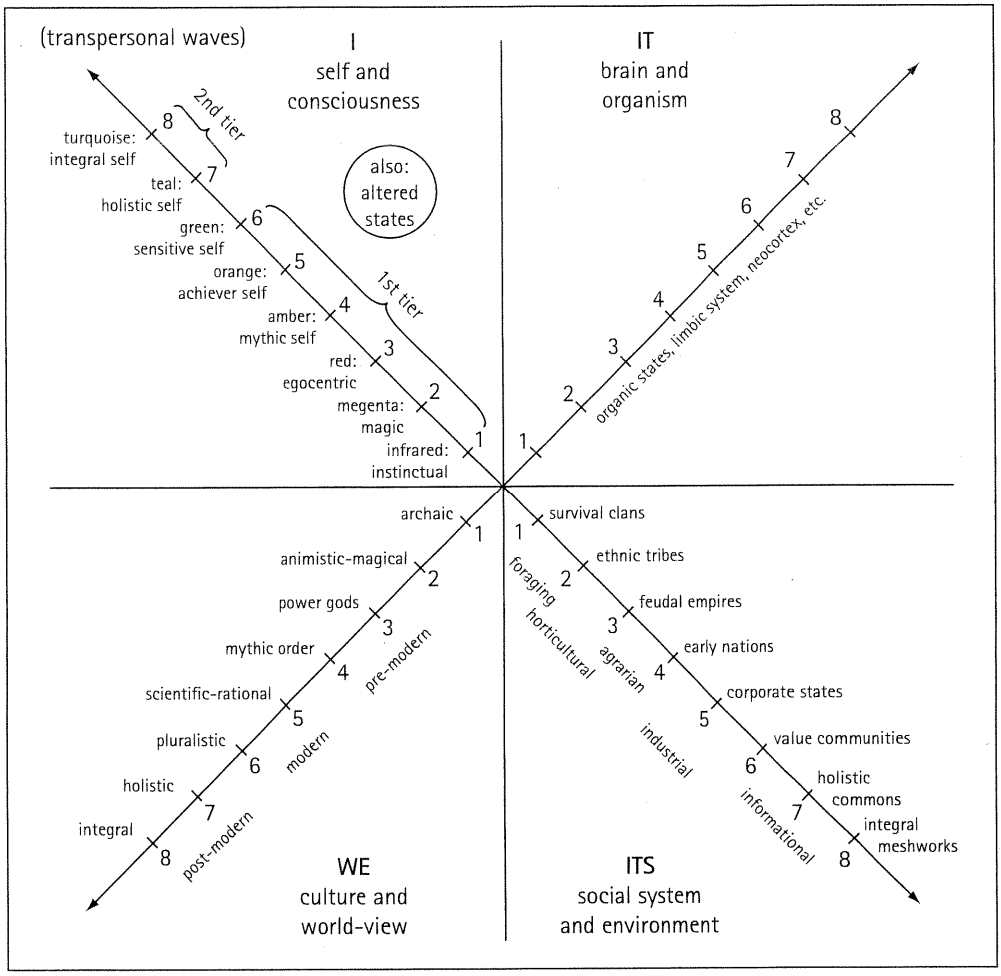

Fig. 31.2. Some aspects of AQAL as they appear in humans.

than other approaches, because each element is understood to be part of each and every moment. Integral Theory assigns no ontological or epistemological priority to any of the elements, because they are understood to co-arise and 'tetra-mesh'.

To integrate these all too often contentious disciplines, Integral Theory uses an Integral Post-metaphysical approach and its corollary, Integral Methodological Pluralism (IMP).[5] This post-metaphysical approach is important for many reasons. First and foremost, any system (scientific or religious) that does not reckon with modern Kantian and post-modern Heideggerian thought cannot survive with any intellectual respectability (agree or disagree, they have to be addressed). That means that any attempt to integrate science and religion must be post-metaphysical in some sense. Second, just as Einsteinian physics applied to objects moving slower than the speed of light collapses into Newtonian physics, so too an Integral Post-metaphysics can

[5] For another discussion of the importance of post-metaphysics consult Habermas (1992).

contain all pre-modern, modern, and post-modern religious and scientific thought and systems *without postulating pre-existing ontological structures.*[6]

With a post-metaphysical approach, such as IMP, science and religion can find a common ground of understanding by recognizing the different *and* valid methods of inquiry that each use. Through IMP we can see that they each procure reliable and verifiable insight into the nature of reality.

[6] For more information on this Integral approach to post-metaphysics consult Wilber (2003), which consists of five excerpts (for a total of approximately 600 pp.) from the forthcoming book tentatively titled *Kosmic Karma and Creativity* (*KKC*). *KKC* is to be the second volume in the *Kosmos Trilogy*. The task of *KKC* is to fully develop the post-metaphysical position that Wilber has been championing explicitly since the issue of volumes i–iv of his *Collected Works* in 1999. Consult in particular the 'Introduction' of vol. ii and *Integral Psychology* in vol. iv. While building on previous material and positions, *KKC* introduces a number of new concepts, such as tetra-meshing, AQAL space, eight fundamental perspectives of any individual, and IMP.

One of the defining characterizations of this phase is its position on the nature of 'pre-givens'. Integral Theory's major criticisms of the perennial philosophy are numerous and too detailed to summarize here. But one of the strongest criticisms is that we can no longer conceive of 'levels of reality' in a separate ontological sense. Integral Theory rejects entirely the notions of levels of reality as separate ontological existents (as explained in many endnotes in *Integral Psychology*). Rather, any levels of reality must be conceived of in a post-Kantian, post-metaphysical sense, as being inseparable from the consciousness that perceives them. This consciousness is investigated not by metaphysical speculation, but by empirical and phenomenological research.

To summarize, this post-metaphysical position holds that there are a few involutionary a prioris, which are laid down as Spirit becomes manifest. These include Eros (an impulse towards higher unities, i.e. wider identifications), Agape (an impulse towards embracing all forms, i.e. more inclusion), a morphogenetic field of developmental potential called 'The Great Nest of Being and Knowing' (formerly referred to as the Great Chain of Being when conceived as containing pre-given ontological levels of reality), and a handful of prototypical forms (i.e. the twenty tenets detailed in Wilber (1995)). Everything else in the manifest realm that appears as a pre-given is to be understood as an *evolutionary* a priori, or a 'Kosmic memory habit' (i.e. a probability wave); that is to say, the form or pattern under question was laid down in time and then inherited by subsequent moments. Thus, today's a posteriori is tomorrow's a priori! This implies that today's potentials will become tomorrow's constraints.

As a result of this stance, levels/stages/waves of being and knowing cannot be conceived as involutionary a priori, but rather are evolutionary a priori to the extent that they have been enacted by communities of intersubjects and a Kosmic memory habit or morphogenetic field has been established. The more a particular form has been enacted, the stronger that form becomes, and the more subsequent forms inherit that form. In short, this is a theory of karma: how the past influences the present.

Consequently, the 'lower' levels of psychological development are relatively fixed, while the 'higher' levels, often referred to as soul and spirit, remain as potentials with slight imprints (resulting from the consciousness pioneers of saints, shamans, yogis, sages, and mystics across all traditions). Consequently, the post-rational 'stages' are anyone's 'game'. In other words, the transpersonal realms are understood as potentials and not as fixed realities.

Integral Methodological Pluralism

IMP is a collection of practices and injunctions guided by the observation that 'Everyone is partially right!' Each practice or injunction associated with either science or religion enacts and therefore discloses a different aspect of reality. No method discloses reality in its entirety, but each offers some truth and some useful perspective. Integral Theory proposes three principles to uncover and include the partial truths of all perspectives: *non-exclusion* (acceptance of truth claims that pass the validity tests for their own paradigms in their respective fields); *enfoldment* (some sets of practices are more inclusive, holistic, and comprehensive than others); and *enactment* (various types of inquiry will disclose different phenomena, depending in large part on the quadrants, levels, lines, states, and types of the inquirer). These three principles serve to include the greatest number of various forms of truth disclosed by different methodologies.

The essential point is that any truly Integral approach touches bases with as many important areas of research as possible before returning to the specific issues and applications of a given practice. An Integral approach means, in a sense, the 'view from 50,000 feet'. It is a panoramic look at the modes of inquiry (or the tools of knowledge acquisition) that humans use, and have used, for decades, and sometimes centuries. This inclusion of various methodologies and perspectives is based on the idea that no human mind can be 100 per cent wrong. Or, we might say, nobody is smart enough to be wrong all the time. And this means, when it comes to deciding which approaches, methodologies, epistemologies, or ways of knowing are 'correct', the answer can only be, 'All of them'. That is, all of the numerous practices or paradigms of human inquiry—including physics, chemistry, hermeneutics, collaborative inquiry, meditation, neuroscience, vision quest, phenomenology, structuralism, subtle energy research, systems theory, shamanic voyaging, chaos theory, developmental psychology—all of those modes of inquiry have an important piece of the overall puzzle. Since no mind can produce 100 per cent error, this inescapably means that all of these approaches have at least some partial truths to offer an Integral conference, and the only really interesting question is: What type of framework can we devise that finds a place for the important if partial truths of all of these methodologies? To say that none of these alternatives is 100 per cent wrong is *not* to say that any is 100 per cent right. Integral approaches can be very rigorous in standards of evidence and efficacy, a rigour that many holistic approaches let go of too quickly in an attempt to be 'all inclusive'.

One result of the three aforementioned principles is that within each of the four quadrants there are two major types or families of methodologies: those that examine the *inside* aspects of that particular quadrant and those that examine the *outside* aspects of that quadrant.

Consequently, given that the quadrants represent the basic perspectives that an individual can take on any occasion, each individual contains at least eight fundamental perspectives: the inside and the outside view of each of the four

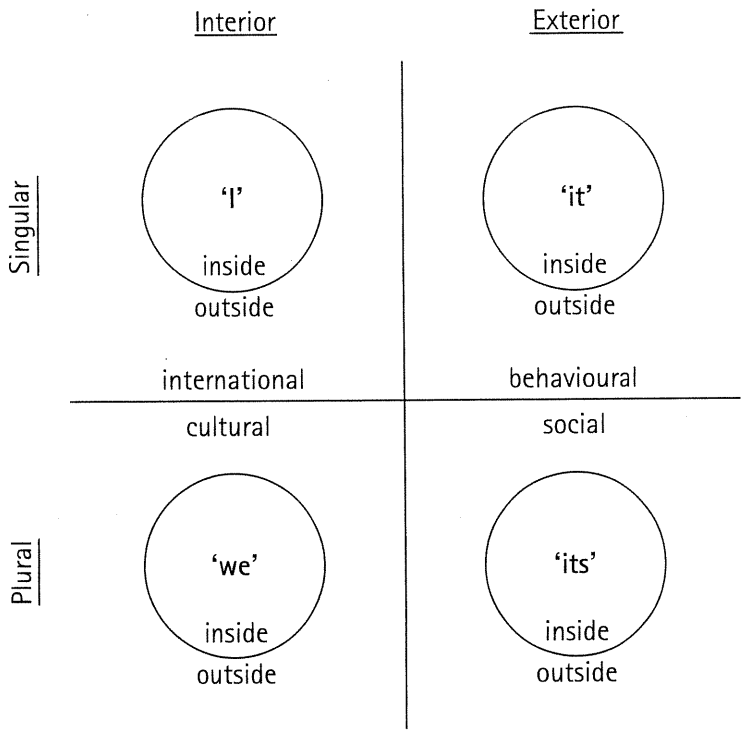

Fig. 31.3. Eight fundamental perspectives.

quadrants of any occasion. Eight fundamental methodologies have arisen out of these eight basic perspectives. They have developed practices, injunctions, and techniques to gain reproducible knowledge (or verifiable repeatable experiences) for each perspective. Some of the better known of these methodologies are summarized in Figure 31.4.

The eight methodological families are *Phenomenology*, which directly explores experience (the insides of individual interiors); *Structuralism*, which explores formal patterns of direct experience (the outsides of individual interiors); *Autopoiesis Theory*, which explores self-regulating behaviour (the insides of individual exteriors); *Empiricism*, which explores observable behaviours (the outsides of individual exteriors); *Social Autopoiesis Theory*, which explores self-regulating dynamics in systems (the insides of collective exteriors); *System Theory*, which explores the functional fit of parts within an observable whole (the outsides of collective exteriors); *Hermeneutics*, which explores intersubjective understanding (the insides of collective interiors); and *Ethnomethodology*, which explores formal patterns of mutual understanding (the outsides of collective interiors). In short, individuals contain all of these dimensions (as disclosed by these respective modes of inquiry) in each and every moment. These methodologies taken together are referred to as 'Integral Methodological Pluralism'.

IMP has important and beneficial consequences for integrating science and religion because it honours each unique approach to reality while recognizing that each uses

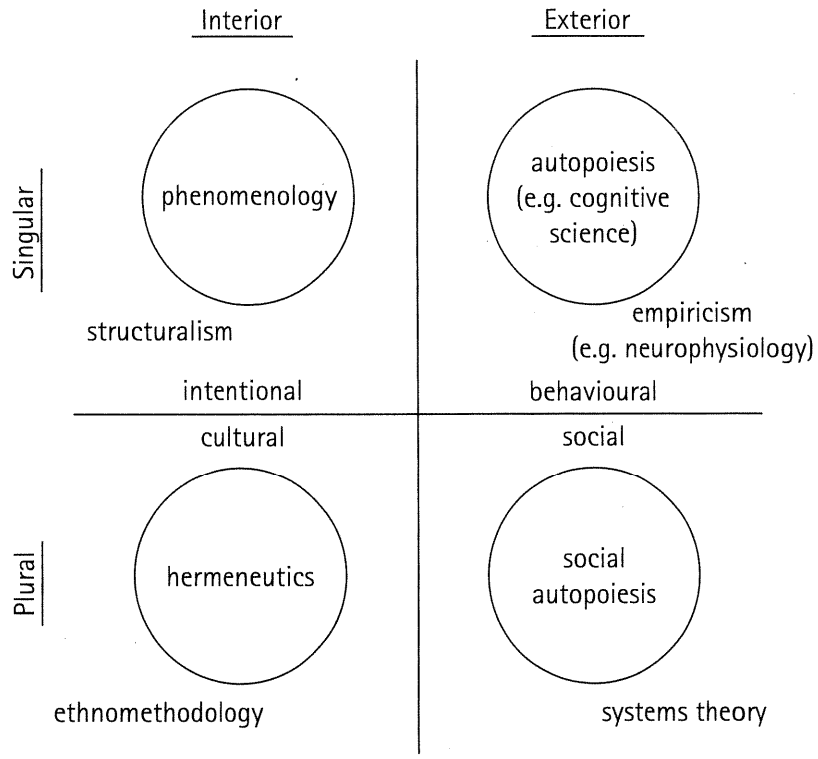

Fig. 31.4. Eight methodologies.

various *partial* perspectives and methodologies to disclose reality. Clearly certain approaches to science or religion prefer different methodological zones. Yet in principle both disciplines can apply all eight methods (all eight perspectives) to investigate reality. Now let's examine how IMP creates an Integral Science and an Integral Religion.

Integral Science

As we will demonstrate, science can be defined along a continuum from narrow empiricism to broad or deep empiricism. Integral Theory provides a number of important distinctions useful in defining the multiple meanings of 'science'. What, if anything, is the common denominator between hard, soft, social, life, hermeneutic, and contemplative sciences? In what way are they all concerned with empirical reality? If we begin with the quadrants and IMP, 'science' often means those disciplines that study the outsides of exterior phenomena associated with the Right-Hand quadrants: for example, physics, chemistry, biology, and neurology in the UR and ecology, geology, astronomy, systems theory, chaos, and the complexity sciences in

the LR. In all these cases the objects of investigation are the outsides of exterior phenomena described from a third-person perspective, which can be represented by (3p × 3-p × 3p).[7] The only distinction is whether the investigation is aimed at individual or collective occasions. Similarly, disciplines such as cognitive science and social autopoiesis are concerned with describing exteriors from a third-person perspective, but they focus on the insides of those exteriors—providing complex maps of the 'view from inside' (3p × 1-p ×3p). These approaches are often labelled the 'hard' sciences, because they all describe *exteriors*, insides and outsides from a third-person perspective: sciences of exteriors. The life sciences typically focus on a particular level of complexity: namely, biology as opposed to physics, which deals with the laws of matter. Similarly, the social sciences, such as economics, generally focus on the level of human complexity in the LR quadrant.

These 'hard' sciences are often contrasted with the 'soft' sciences, or sciences of interiors that focus on the Left-Hand quadrants from a third-person perspective. For example, there are those disciplines that focus on the UL, such as developmental psychology and developmental structuralism, and those that focus on the LL, such as ethnomethodology and cultural anthropology. These approaches describe the outside of interiors from an objective vantage-point (3p × 3-p × 1p). Presumably, their study of outsides (3-p) of interiors from a third-person perspective (3p) is what constitutes a 'soft' scientific approach. They are not soft in their commitment to third-person description or in their investigation of outsides. Rather, they have been labelled 'soft' because they investigate interiors (1p), which do not manifest in the sensorimotor world. So while the hard sciences examine *exteriors* from a third-person perspective, the soft sciences examine *interiors* from a third-person perspective. They are all 'scientific' according to proponents of the soft sciences, because they all examine objects using third-person descriptors and focus on those objects' outsides (in fact, proponent of the 'soft' sciences have pointed out that their disciplines should be labelled the 'harder' sciences, since their (1p) object of investigation is more elusive than objects sitting around in the external world (3p)). This is often not convincing enough to 'scientists' of the hard sciences. For them it is not enough to provide a third-person perspective, even if it is of the outside of phenomena; one must investigate exterior reality—not interiors.

[7] The perspectives of perspectives of perspectives approach of IMP leads to a new type of mathematical notation that replaces traditional variables with perspectives. Using the shorthand of first person (for the inside in general) and third person (for the outside in general), then meditation is 1p × 1-p × 1p (or the inside view of the interior awareness of my first person). Cognitive science is 3p × 1-p × 3p (a third-person conceptualization of a first-person view from within the third-person or 'objective' organism). This 'integral math' can get much more complicated than this, with many more terms, but those are some examples for a start (one can actually build a type of mathematics here, with the equal sign representing 'mutual understanding or resonance'). In this chapter we are using the following three-variable notation: first person (1p) or third person (3p) × inside (1-p) or outside (3-p) × interior (1p) or exterior (3p). Integral math works best with four variables, but for our purposes three will suffice.

If the hard sciences study the insides and outsides of exteriors, and the soft sciences study the outsides of interiors, are there sciences that study the insides of interiors? Not surprisingly, yes! Hermeneutics—often defined as the 'science of interpretation'—studies the LL. Phenomenology and the contemplative sciences study the UL. Edmund Husserl (1970), the founder of phenomenology, was deeply committed to science, and wanted to provide a methodology for disclosing the essential structures of experience, including what is experienced and how it is experienced. These disciplines are characterized by their first-person perspective on the insides of interiors in both individuals and collectives (1p × 1-p × 1p). Unlike the other 'sciences' we have considered, the methods of hermeneutics and phenomenology do not directly involve a third-person perspective, often considered the hallmark of science—hard or

Individual-Interiors Soft (Mind) Sciences Developmental psychology (1x3x1) Developmental structuralism (1x3x1) Interior phenomenology (1x1x1)	**Individual-Exteriors** Hard (Natural) Sciences Physics (3x3x3) Chemistry (3x3x3) Cognitive (3x1x3) Molecular biology (3x3x3) Botany (3x3x3) Neurology (3x3x3) Behaviourism (3x3x3)
Collective-Interiors Soft (Cultural) Sciences Ethnomethodology (3x3x1) Anthropology (3x3x1) Cultural studies (3x3x1)	**Collective-Exteriors** Hard (Natural) Sciences Astronomy (3x3x3) Geology (3x3x3) Ecology (3x3x3) Environmental (3x3x3) Soft (Social) Sciences Political science (3x3x3) Economics (3x3x3) Sociology (3x3x3) Linguistics (3x3x3)

Fig. 31.5. Some common fields of science.

soft, exterior or interior. As a result, these disciplines have been excluded from so-called scientific investigation. If we include them as scientific enterprises, then we do so based on criteria other than the use of a direct third-person perspective.

Common to all these sciences (e.g. hard, soft, and contemplative) is their drive for repeatable empirical evidence that can be confirmed by other experts in their field. They follow what Integral Theory refers to as the three strands of good science: *instrumental injunction, direct apprehension, communal confirmation or rejection* (Wilber 1983*a*, 1998). Instrumental injunction refers to an actual practice, an exemplar, a paradigm, an experiment, or an ordinance. It is always of the form 'If you want to know this, do this'. Direct apprehension refers to an immediate experience of the domain brought forth by the injunction: that is, a direct experience or apprehension of data (even if those data are mediated, at the moment of experience they are immediately apprehended). William James pointed out that one of the meanings of 'data' is direct and immediate experience, and science anchors all of its concrete assertions in such data. Communal confirmation or rejection is a checking of the results—the data, the evidence—with others who have completed the injunction and apprehensive strands adequately. Thus all kinds of science are in fact empirical in the broadest sense of experiential. This is a much broader definition of science than the narrow definition of sensory experience usually associated with it.

An Integral approach recognizes both horizontal and vertical empiricism: horizontal, in that researchers can use the three strands of good science (*instrumental injunction, direct apprehension, communal confirmation or rejection*) in any domain explored by the eight methodologies; vertical, in that there are many levels of experience, and therefore many levels of empiricism. In vertical empiricism there is *sensory empiricism* (experience of the sensorimotor world), *mental empiricism* (including logic, mathematics, semiotics, phenomenology, and hermeneutics), and *spiritual empiricism* (experiential mysticism, contemplative spirituality, and transpersonal experiences—confirmed by the community of practitioners who have performed the appropriate injunctions). This means that there is evidence seen by the *eye of flesh* (e.g. intrinsic features of the sensorimotor world), evidence seen by the *eye of mind* (e.g. mathematics and logic and symbolic interpretations), and evidence seen by the *eye of contemplation* (e.g. satori, *nirvikalpa samadi*, gnosis). Each of the three eyes of knowing is natively attuned to its correlative realm of data: sensibilia, intelligibilia, and transcendelia, respectively. However, the eye of mind (or reason) can focus on both the realm of sensibilia and transcendelia. Thus, there are, broadly speaking, at least five different types of empiricism or experientialism (see Figure 31.6).[8]

[8] Kurt Koller (2005*b*) notes that 'There can also be examples of contemplation looking at mind, contemplation looking at body, and likewise flesh looking at both mind and Spirit. Wilber covers these modes briefly when articulating several historical "category errors". A category error is the attempt of one or another eye of knowing to interpret other realms of data in terms of its native realm' (cf. n. 17). See also Koller (2005*a*, 2005*c*) for more exploration of Integral Science.

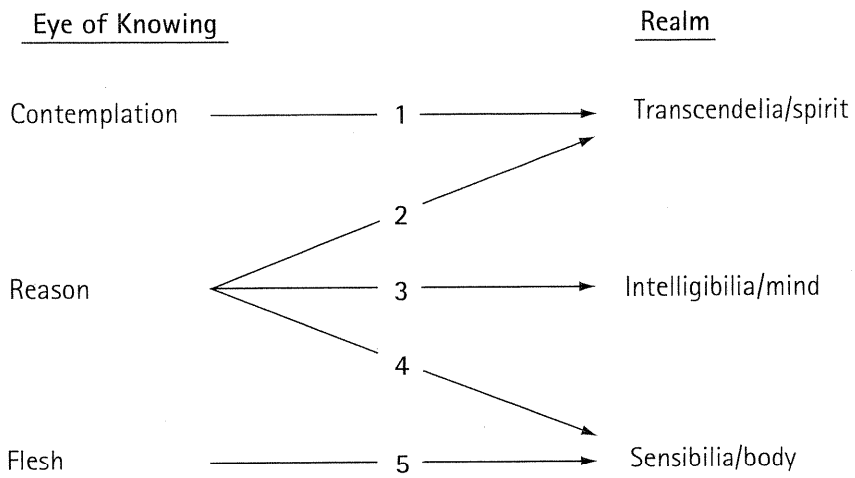

Fig. 31.6. Five types of empiricism.

In addition, an Integral approach to science recognizes that these three strands can be used within various world-views, from magic (impulsive) to mythic (conformist) to rational (conscientious) to systems (autonomous) to transpersonal (ego-aware) (Cook-Greuter 1999). In other words, there are levels of science. Each developmental world-view will define science based on its own perspective. The three principles of Integral post-metaphysics include and honour the context of each level while also judging and discriminating as to the partial value of each. For example, magical science such as various folk sciences (voodoo) or mythic science (creation science) can both follow the three strands even though they are pre-rational, and can therefore properly be considered empirical in the broad sense within their world-view. However, in a larger context the limits of such a naïve empiricism are evident. Likewise, rational sciences like physics and systems sciences like ecology, which are what most people have in mind when they think of science, are also expressions associated with a particular world-view, which are limited from a larger Integral context. Lastly, transpersonal or contemplative sciences such as centring prayer or Mahamudra also follow the three strands and are empirical in a broad sense. One reason why it has been difficult for modern science to accept transpersonal methodologies of investigation is because they appear suspiciously similar to pre-rational forms of science due to their non-rational modes (Wilber 1983*a*: ch. 8). But as we have explained, non-rational is not anti-empirical when empiricism is understood in the broad sense.

As we have detailed, there are a number of logical movements in shifting from a narrow definition of science to a broad and inclusive definition. Each of these turns is important to understand if we are to integrate science and religion. First, in its most narrow form, science is understood as empirical investigation of exteriors from the

outside (3p × 3-p × 3p) or the inside (3p × 1-p × 3p). This definition of science tends to deny the validity of religion, and often pits modern, rational science against traditional, superstitious religion. Next, we see that in some contexts science expands to include interiors, but only those couched in third-person language (3p × 3-p × 1p). Embedded in this definition, scientists investigate religion from a scientific, third-person perspective via disciplines such as cultural anthropology. Third, Integral Theory expands science even further to include the study of interiors from a third-person perspective *and* a first-person perspective as long as we apply the scientific method of the three strands of valid knowledge. At this point religious traditions such as Mahamudra, Zen, and Christian mysticism become scientific insofar as they provide reliable practices for accessing various transpersonal aspects of reality.[9] Thus, the next turn on the road to integrating science and religion is the use of the Integral approach, which answers the concerns of science *and* post-modernism regarding the nature of interiors individually and collectively. The Integral approach recognizes the partial truth in all of these understandings of science from narrow to broad. The application of IMP gives all of their definitions a place in the science and religion dialogue. We emphasize that we must be clear and concise about what we mean by 'science' and 'religion' for fruitful and generative dialogue. Integral Science recognizes that science can be understood as a *data domain*, such as the Right-Hand quadrants, a *method* such as the three strands of good science, and as a *level* of understanding such as the rational world-view.[10]

Having provided an overview of the many meanings of science, we now turn to the many meanings of religion.

[9] Ironically, it is at this point also that interiors come under attack—not by science as much as by post-modernism, which points out that these interiors are shot through with intersubjective structures and backgrounds and therefore do not exist in any independent sense. Thus Alan Wallace's (2000) defence of subjectivity against the scientific establishment (objectivity) is not as important as defending subjectivity from post-modern deconstruction (intersubjectivity). See also Ch. 2 above.

[10] It can also be understood as a *judgement* such as a third-person cognitive discrimination. Likewise, religion is often associated with the judgement of moral discrimination—and at times aesthetic discrimination. While the eight methodological families reveal phenomena, it is important to realize that they do not determine the type of judgement an individual can take up in relationship to the phenomena disclosed. There are three broad judgements that a person can perform: cognitive ('is it real or true?'), moral ('is it ethical or good?'), and aesthetic ('is it attractive or beautiful?'). In other words, even though science is often associated with the True and religion with the Good, there is the True, the Good, and the Beautiful of both science and religion. Science is usually associated with cognitive judgement, and religion with moral (and to some extent aesthetic) judgement. If one recognizes that all three judgements are important, one is involved in another way of integrating science and religion.

Integral Religion

There are few areas that have as many different associations, connotations, and definitions as religion and spirituality. This diversity of meaning highlights the important role that religion and spirituality play in people's lives and communities and explains why there is so much disagreement in this area. In a general sense 'religion' tends to refer to LL cultures of meaning, symbolism, and theology about God or Spirit. 'Spirituality', on the other hand, usually refers to UL direct felt experiences of insight, love, wisdom or compassion, presence, and grace of the Absolute or the Divine. Interestingly, in terms of levels of psychological development, 'religion' is more often associated with traditional values, whereas 'spirituality' is often connected with post-conventional values. And modern values find both suspect—though there are attempts at providing rational proofs for the existence of God.[11] Additionally, Integral Theory has identified nine different, often exclusive, meanings of 'religion' and five distinct uses of 'spirituality'.[12] Each of these uses is legitimate—we are free to define religion and spirituality any way we wish, and clearly we have—but we *must specify that meaning*. Many scholars and practitioners of both religion/spirituality and science have several implicit but often very different definitions in mind, and they slip between them in a way that generates pseudo-conclusions. The AQAL model recognizes the context in which each definition is accurate and meaningful, and allows each and every one of those definitions to have its place in the interface between science and religion.

In addition to sorting through the multiple uses of terms like 'religion' and 'spirituality', the AQAL model provides a space for Integral Religion (and Spirituality) to emerge. It does so by identifying a number of key issues that have dogged religion for some time. Each quadrant contains phenomena that are crucial for a more comprehensive, balanced, and Integral approach to reality, to the universe, to God and Goddess, and to Spirit. In effect, the four quadrants represent the four hands of God in the manifest realm—leave any one of them out, and one compromises one's relationship with Radiant Spirit.

Let us unpack the different developmental understandings of God, as it is a defining element of Integral Religion. To integrate science and religion, it is necessary to recognize that there is no single God of which religion speaks and which spirituality experiences. A leading developmental theorist, Jean Gebser (1985), found that human beings evolve through at least five major levels of development, which he called archaic, magic, mythic, mental, and integral. If we accept that those stages are more or less right, then there is an archaic God, a magic God, a mythic God, a mental God, and an integral God (with possible higher stages and experiences of God to come).

[11] The four most common rational proofs are known as the ontological argument, the cosmological (first cause) argument, the teleological (design) argument, and the moral argument. Consult Rowe and Wainwright (1998).

[12] The nine definitions of 'religion' can be found in Wilber (1983*b*). The five definitions of 'spirituality' can be found in Wilber (2000*a*).

An *archaic God* sees divinity in strongly instinctual forces. A *magic God* locates divine power in the human ego and its magical capacity to change the animistic world with rituals and spells. A *mythic God* is located not on this earth but in an other-worldly heavenly paradise, entrance to which is gained by living according to the covenants and rules given by this God to his chosen peoples. A *rational God* is a demythologized Ground of Being that underlies all forms of existence. And an *integral God* is one that transcends and embraces all of the above. Thus Integral Religion recognizes that there are multiple versions of God, and that all of them are worthy of worship and devotion (in their healthy expressions). All of these understandings of God are important because they each capture an irreducible dimension of the Divine in its multidimensional glory. Each 'higher' stage of development actually builds upon and includes the lower, so the lower stages are more fundamental, whereas the higher stages are more significant. Exclude or repress any one of them, however, and one is in trouble. As a result, one ends up with a broken picture of God while claiming that the part one is holding in one's hand is what deserves a nice frame. Tracing that development—while honouring each and every stage as an equally crucial component of that development—is an important part of any Integral approach to religion and spirituality.[13] Moreover, this understanding is crucial for bringing science and religion together under the post-metaphysical umbrella.

Unlike traditional religion's embrace of various metaphysics, Integral Religion embraces an Integral post-metaphysics. This is essential for integrating science and religion, because both science and post-modern theory have produced some devastating critiques of pre-modern metaphysics. As a result, Integral Post-metaphysics replaces *perceptions* with *perspectives*. Thus, for example, the Whiteheadian and Buddhist notion—that each moment is a momentary, discrete, fleeting subject that apprehends dharmas or momentary occasions—is itself a third-person generalization of a first-person view of reality in a first person (3p × 1-p × 1p). Each moment is *not* a subject prehending an object; it is a perspective prehending a perspective—with Whitehead's version being a truncated version of that multifaceted occasion, a version that actually has a hidden monological metaphysics (Wilber 1995, 1997, 2000*a*). Integral Post-metaphysics can thus generate the essentials of Whitehead's view, but without assuming Whitehead's hidden metaphysics.

The same is true for the central assertions of the great wisdom traditions: an Integral Post-metaphysics can generate their essential contours *without* assuming their extensive metaphysics. The incredibly important truths of the great traditions could not easily withstand the powerful critiques offered by both modernity and post-modernity. Modernist epistemologies demanded evidence, which the pre-modern traditions were ill prepared to provide, even though traditional contemplative practices offered ample verifiable evidence in favour of claims about Spirit

[13] Interestingly, the God of one level often becomes the devil of the next level. For example, the pagan gods of the mythic level become the devil (e.g. Pan) at the mythic level. The mythic God of the Judaeo-Christian religion becomes the devil to the rational God of the Western Enlightenment, and so on.

(contemplation was always a modern epistemology ahead of its time in a pre-modern world). Concluding that no evidence was available to support truth claims about spiritual reality, modernist epistemologies rejected pre-modern religious traditions more or less in their entirety.

Not that it mattered too much, because post-modernity rejected both pre-modernity and modernity. The truth advanced by post-modernist epistemologies is that all perceptions are actually perspectives, and that *all perspectives are embedded in bodies and cultures*, and not just in economic and social systems (which modernist epistemologies from Marx to systems theory had already asserted). If modernity flinched and recoiled in face of these post-modern critiques, one can imagine how the pre-modern traditions fared.

IMP highlights an array of fundamental perspectives, some of which the post-modernist epistemologies would emphasize. In particular, AQAL insists that every occasion has a Lower-Left quadrant (intersubjective, cultural, contextual), and that the quadrants 'go all the way down'.[14] In simpler terms, all knowledge is embedded in cultural or intersubjective dimensions. Even transcendental knowledge is a four-quadrant affair: the quadrants do not just go all the way down; they go all the way up as well.

Modernity focused on the Right-Hand quadrants of objective exterior evidence, while post-modernity focused on the Lower-Left quadrant of intersubjective truth and the social construction of reality. But there was one area that the great traditions specialized in, an area not yet understood, or even recognized, by modernity and post-modernity, and that was the interior of the individual—the Upper-Left quadrant with all its states and stages of consciousness, realization, and spiritual experiences. By situating the great wisdom traditions in an Integral framework, we can salvage their Upper-Left experience and wisdom. Virtually the entire Great Chain of Being fits into the Upper-Left quadrant. Shorn of its metaphysical structures, the wisdom of the pre-modern traditions fits into an Integral framework that allows room for modern and post-modern truths as well.

Just as a Post-metaphysics approach and IMP broaden and deepen narrow science into Integral Science, so they also broaden and deepen narrow religion into Integral Religion, while honouring all the partial truths in between. Like Integral Science, Integral Religion recognizes that religion can be understood as a *data domain* (such as the Left-Hand quadrants), as a *method* (such as those approaches that use the three strands of valid knowledge), and as a *level* of understanding such as a traditional (ethnocentric) world-view or a trans-rational (theocentric) world-view.

Previously we tracked the expansion from narrow science to broad science to Integral science and the ways in which each of those moments contributed (or did not contribute) to an integration with religion. Likewise, when we examine this progression in the context of religion, we see a similar pattern.

[14] Whereas the quadrants as perspectives go all the way down (e.g. to the atomic level), the eight methods do not, because they involve a level of self-reflection that is a developmental achievement even among humans.

Narrow religion, often considered religious fundamentalism, is an all too prevalent understanding of religion. This ethnocentric (and sometimes egocentric) expression of religion has the same psychological developmental structure as scientism![15] Integration of science and religion in this context occurs only to the extent that science is placed in service of dogmatic views of understanding divine law. Second, there are rational and world-centric understandings of religion, where someone recognizes that all religious traditions can liberate people from selfishness and provide a context for an intimate relationship with God. It is within this broader understanding of religion that people often attempt to use modern science to prove the Torah, or use brain imaging to map mystical states, and so on. They emphasize the Right-Hand correlates of Left-Hand dimensions. Next, post-modernism interprets religion and science as a series of power/truth claims and places them all on an equal footing (thereby negating development and depth), but does very little to integrate them.

A more inclusive view sees religion as an esoteric core to the great traditions—often called the Great Chain of Being or the perennial philosophy. All too often, in the context of this understanding of religion, science turns to quantum physics to demonstrate the underlying quantum grid of reality. Unfortunately, this is a disaster, a reduction of Spirit in the worst sense (Wilber 1982, 1983*a*, 1984). Finally, Integral religion recognizes the validity of these previous understandings of religion through a post-metaphysical embrace. In addition to jettisoning the unnecessary ontological pre-givens of traditional metaphysics, this embrace uses IMP to legitimate reproducible spiritual experience and knowledge so that they can be scrutinized by the appropriate community of the adequate (those who have the necessary training in any particular methodology or set of methods). At this level of understanding, science is satisfied that religion is not saddled with unnecessary ontological structures and that religion is following the three strands of valid knowledge.

Integrating Science with Religion

Having provided an Integral overview of both science and religion, we can now turn our attention to the salient issues involved in integrating them. One key to understanding these various attempts is to recognize that different world-views have different versions of science and religion, and thus have a different way of trying to

[15] It is important to keep in mind that there are many ethnocentric expressions of science; rationalism, technology, and research can all be appropriated by individuals and organizations with fundamentalist and dogmatic perspectives, using science to further their own ethnocentric goals.

integrate them (Wilber 1998). Thus, each world-view discloses a different valid understanding of both science and religion and their relationship (see Figure 31.7).

With different understandings, different attempts at integration occur. Within a magical world-view science and religion are undifferentiated, and local 'folk' understandings of science, such as causal relationships and taxonomies, support local religious practices (voodoo, witchcraft). The boundary between science and religion is largely absent. A mythic world-view unites science and religion through dogmatism, as in creation science, in which religion accounts for science. In rational world-views, logic and rationality integrate science and religion. Here God becomes a proof. Now science proves religion/God. The post-modern world-view emphasizes plurality in both science and religion, through interdisciplinary research and interfaith dialogue respectively. Transpersonal world-views have not emerged on any large cultural scale, but to the extent that they exist, science and religion are integrated in trans-rational knowing. It is only with Integral perspectivalism that all these forms of integration are recognized and included, integrating science and religion in their methodological nature (see Figure 31.8).

If we start with traditional religion and modern science and then look at the zones of inquiry of IMP, we notice that all the zones that involve a third-person perspective are represented by science, and the two zones that involve a first-person perspective are often viewed as the domain of religion. In other words, science is often associated with those methods that examine the outsides of the exteriors, and religion is usually associated with those methods that deal with the insides of the interiors. In this sense these two disciplines hold opposite methodological poles. No wonder they are often at odds with one another (see Figure 31.9).

It becomes clear with the IMP approach that while religion has often been confined to the insides of interiors for individuals and collectives (Phenomenology of Religion and Hermeneutics of Religion) there are scientific (i.e. third-person) disciplines that take religion as object of investigation in all the other methodological zones. Thus, all eight methodological families can investigate religion. Let us start

Science	Religion
Transpersonal science: Meditation	Transpersonal religion: Mysticism
Post-modern science: Systems Theory	Post-modern religion: Religious pluralism
Rational science: Physics and Biology	Rational religion: Deism
Mythic science: Scientism	Mythic religion: Fundamentalism
Magic science: Folk science	Magic religion: Voodoo and Paganism

Fig. 31.7. Levels of science and religion and some examples.

Transpersonal mysticism: Science and religion are always already.
Post-modern relativism: Science and religion are equally valid narratives.
Modern rationalism: Science proves religion.
Traditional Fundamentalism: Religion proves science.

Fig. 31.8. Levels of integration between science and religion.

with the outsides of exteriors and move toward the insides of interiors. One of the main fields that studies the outside of the individual exteriors is Neurotheology, or what is sometimes called Neuroreligion, which documents the neurological basis of spiritual experience (e.g. McKinney 1994; Austin 1998; Newberg, d'Aquili, and Rause 2001). There are also genetic and biological approaches (e.g. Alper 2001; Pearce 2002;

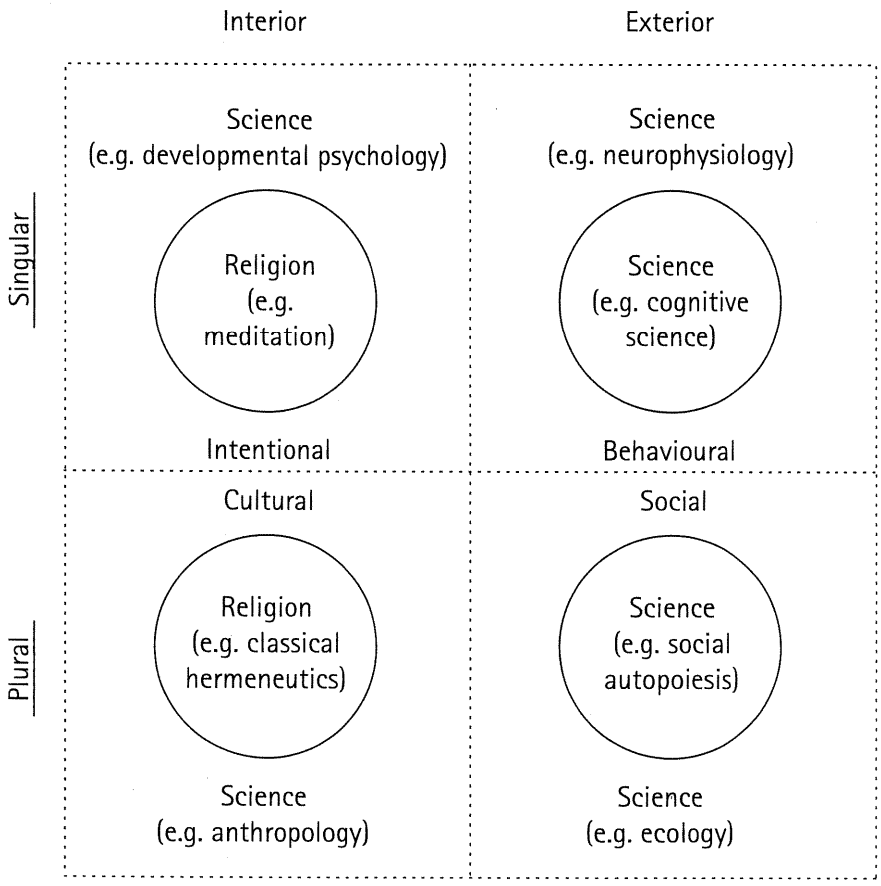

Fig. 31.9. Typical methodological domains of science and religion.

Hamer 2004). The main field associated with the outside of the collective exteriors is Sociology of Religion, which often focuses on institutional dimensions (e.g. Lenski 1963; Wilber 1983*b*; Weber 1993; Durkheim 1995). The inside of individual exteriors is investigated by the field of Cognitive Science of Religion, which looks at the cognitive mechanisms underlying religion (e.g. Andresen 2001; Pyysiainen 2003). Within this approach there are those who situate cognitive mechanisms within an evolutionary context (Boyer 1994; Atran 2004, also Chapter 25 above). At the collective level, Niklas Luhmann's (2000) work on religion and communication explores the inside of collective exteriors. Moving to the Left-Hand quadrants we find the fields of Psychology of Religion (e.g. Fowler 1981; Wilber, Engler, and Brown 1986) and Anthropology of Religion (e.g. Eliade 1958; Lévi-Strauss 1963; Berger 1969; Geertz 1976; Wilber 1981; Foucault 1986), both of which study the outside of individual and collective interiors to identify structural patterns of personal experience and cultural meanings of the Divine. This leaves the fields of Phenomenology of Religion (e.g. Bettis 1969; Twiss 1992; Waardenburg 2001) and the Hermeneutics of Religion (e.g. Osborne 1991; Gadamer 1999; Kearney 2001; Phillips 2001), both of which focus on the insides of the interiors, exploring the individual experience and mutual understanding of the sacred. These last two are empirical in the broad sense of following the three strands of valid knowledge (see Figure 31.10).

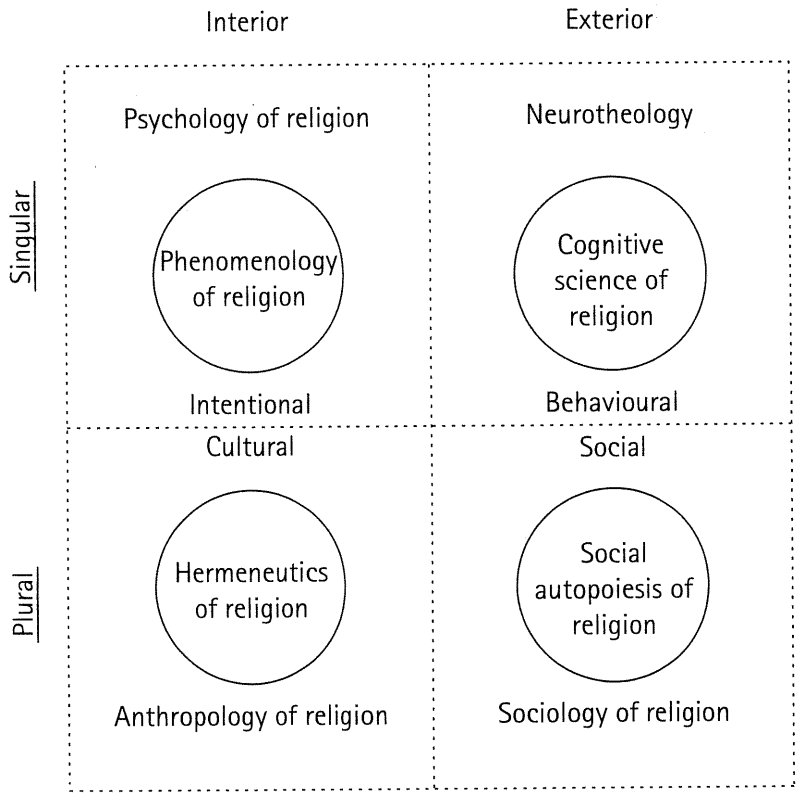

Fig. 31.10. Study of religion scientifically.

Clearly IMP allows science and religion to be integrated by recognizing which methodological zones various approaches are most qualified to inhabit. Those zones inhabited by religion (i.e. phenomenology and hermeneutics) can be understood as scientific, through broad empiricism. It also shows how the third-person zones can be used to study religion to create a more Integral understanding of religion. Again, as we have demonstrated, one reason why the integration of science and religion has been so difficult is that science and religion can be many things to different people.

Not only does the Integral approach recognize the important truths in the many possible ways to integrate science and religion; it also provides a post-disciplinary framework that illustrates their true but partial nature. IMP unlocks the many meanings and reveals the common post-metaphysical language that unites science and religion. Through its guiding principles of *non-exclusion*, *enfoldment*, and *enactment*, IMP can integrate science and religion regardless of the meaning one has in mind.

If one defines science and religion as *domains of inquiry*, the Right-Hand exterior quadrants versus the Left-Hand interior quadrants, the Integral approach points out that all four quadrants co-arise and are different aspects of the same occasion. Thus, science and religion are inseparable sides of the same Integral coin. If they are defined as *methods*, the Integral approach points out there are eight fundamental methodological families that both science and religion can use to investigate reality: either with disciplines of science being used to study religious phenomena, or with religious practices (broad empiricism) investigating aspects of reality. If they are defined as *levels*, the Integral approach points out that even though religion is often associated with the ethnocentric level and science with a world-centric level, world-views at different developmental levels generate distinct understandings of both science and religion, and therefore take unique approaches to integrating them. Clearly, as a result, science and religion can and must be integrated at multiple levels of understanding.[16] So no matter how we define science and religion, the Integral approach brings them together in an inclusive embrace.

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[16] And if science and religion are defined as a *judgement* (i.e. 'What is real' and 'What is good' respectively), the Integral approach points out that the three judgements of the Good, the True, and the Beautiful can each be made in the context of science or religion.

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