

Running head: INNER AND OUTER EMPIRICISM

Advancing the dialogue between inner and outer empiricism:
A comment on O’Nualláin

Michael J. Hogan

National University of Ireland, Galway.

Address correspondence to:

Michael J. Hogan, PhD,
Department of Psychology,
NUI, Galway,
Ireland.

Email: michael.hogan@nuigalway.ie

Hogan, M. J. (2008). Advancing the dialogue between inner and outer empiricism. *New Ideas In Psychology*, 26(1), 55-68

Abstract

In a recent contribution to *New Ideas in Psychology*, Seán O’Nualláin draws out a distinction between inner and outer empiricism, and suggests that consciousness research can benefit from analysis in both directions, that is, via the exploration of facts and relations that facilitate a third-person understanding of consciousness (by reference to an analysis of the structures, processes, and functions of the brain) and via the direct exploration of conscious experience itself, both in terms of its computational (content filled) and non-computational (content empty) aspects. In positing a substrate of subjectivity independent of the contents of consciousness (and, more specifically, a state of “nothingness”), O’Nualláin follows a long tradition deeply rooted in mythical, religious, and esoteric schools of belief and practice. Although there is considerable debate amongst philosophers, psychologists, and neuroscientists as to whether or not a non-computational view of consciousness is viable, O’Nualláin accepts that such a possibility does exist. Further, he suggests that a dialogue between the inner and outer empiricists will be fruitful. In this comment I critique O’Nualláin’s initial thoughts on the subject and draw out a series of useful distinctions that will help to advance the dialogue between inner and outer empiricism. Critical amongst these distinctions is explicit reference to 1) ontological and epistemological interdependencies in consciousness research, and 2) states of consciousness that describe the transition from “mindfulness” through “nothingness” to “no-mind”.

The creative is successful; this is beneficial if correct.

I Ching

In a recent contribution to *New Ideas in Psychology*, Seán Ó'Nualláin suggests that consciousness research will benefit if we allow for the distinction between inner and outer empiricism (Ó'Nualláin, 2006).

“Consciousness studies and cognitive science are two distinct, if overlapping areas. Cognitive science studies that aspect of mind which can be informationally described; consciousness studies attempts also to provide a framework that can do justice to phenomenal experience.” (p. 32)

Fundamentally, the distinction is an epistemological one -- inner and outer empiricism, or subjectivity versus objectivity, have to do with different ways of knowing and experiencing the world. Ó'Nualláin is concerned that by disqualifying introspective data scientists will fail to handle all the phenomena of mind.

The distinction between inner and outer empiricism is useful and important. Although it is philosophically defensible to state that a first person account of conscious experience is not necessary to explain consciousness (Dennett, 1988), much like it is philosophically defensible to state that a description of mental processes is not necessary to explain human behaviour (Chiesa, 1994), few of us out walking the streets would deny our phenomenal experience, or the impression that manipulating phenomenal experience somehow allows us a measure of control over our action state (Carver & Scheier, 1998). And although some psychologists describe phenomenal experience as a computational mystery and thus engage little with the problem (Pinker, 1997), others have attempted to synthesise what it is we currently know in an effort to explain consciousness (Rose, 2006).

However, upon reading the modern synthesis, we soon recognise that it is not a synthesis of inner and outer empiricism at all: the two ways of knowing consciousness are rarely given equal treatment in the same text. At the same time, from the perspective of outer empiricism, the different accounts of consciousness developed by different thinkers are shaped by sentiments (what is considered good or bad), which in turn influences the facts and relations included in different objective accounts of consciousness. From a broad systems science perspective, we cannot ignore the fact that subjectivity permeates objectivity (J. N. Warfield, 2006).

Ó'Nualláin notes that *“consciousness studies has become a canvas on which we project all the problems of the cognitive sciences....(and it is time to consider)...a possible new perspective on methodology in this area, between “inner” empiricism, an attempt to isolate exact conditions and methodology for a science of experience, and “outer” empiricism, a projection of the methodology of Galilean empirical science onto phenomenal space.* (p. 30)

For those who embrace a neo-Piagetian view on cognitive development (i.e., we are actively involved in constructing our own mental models of reality) it is reasonable to assume that human development involves the acquisition of two inseparable ways of seeing, looking in and looking out. *Insight* looks to consciousness, and sees what wisdom, enlightenment, and skill can be found from mastering the contents of

consciousness; *outsight* looks to the system – to reduce the facts and relations of the universe to system - and sees what wisdom, enlightenment, and skill can be found from mastering the system (Siu, 1957). The way we look influences what we see, and our perspective shifts in time as we strive to adapt to Nature. To the extent that mental models of self, other, and world can become progressively complex and integrated over time (Fischer & Bidell, 2006; Labouvie-Vief, 2005), it is reasonable to assume that an active mind (or a collection of active minds) might eventually construct an account of consciousness that embraces those aspect of mind which can be informationally described while also doing justice to phenomenal experience.

But the question remains, if we are to pursue inner empiricism (the path of insight), and expect that it can contribute in some way to the understanding of consciousness acquired via the application of outer empiricism (the path of *outsight*), how will this work? In order to advance the dialogue between inner and outer empiricism Ò'Nuallàin calls for, it is necessary to examine his perspective and intentions. Importantly, if a collection of active minds are to work to construct an account of consciousness that does justice to both the dynamics of brain activity and the dynamics of phenomenal experience, then the perspectives and intentions of each participant in the dialogue needs to be considered by the group (Bohm & Nichol, 1996).

Why consider inner empiricism?

Ò'Nuallàin's point of entry into consciousness studies involves directing our attention to the consciousness behind the content of consciousness:

"... it is the practical work of religion to make it possible for natural man truly to experience his own nothingness, his own lack of being" (Needleman, 1982a, p. 36)...This experience is the first step on the royal road to consciousness...The distinction between the content of consciousness and consciousness itself becomes paramount here... The only justification for the existence of a science of consciousness is the existence of a distinction between its contents, the subject matter of cognitive science, and consciousness itself... The imperative is to distinguish the experience from the content of experience. Why do this? Essentially, because like techniques in conventional science, it leads us to ever more valuable insights. What's being argued, then, is that inner empiricism is a discipline, a "science," and that it has been practiced with great sophistication in the past. The results of these explorations are codified in religious traditions..." (p. 32 – 34)

Ò'Nuallàin's reasons for drawing this distinction between the content of consciousness and consciousness itself (starting with the experience of "nothingness") are made clearer on p. 35.

"More specifically, we wish to investigate the possibility of creating a science of consciousness that can do justice to the myriad findings emerging from neuroscience and the cognitive sciences on one hand, and the knowledge carried by the religious traditions on the other. We ultimately wish to confront an even more awesome question: how can I use the findings of outer empiricism and the exercises of inner empiricism to be more fully myself?"

On the one hand, Ó'Nualláin is clearly calling for a constructive dialogue between inner and outer empiricism. Part of what he is hoping for is a “*union in which...absolute objectivity and absolute subjectivity are again one absoluteness*” (p. 38). However, because the facts and relations of cognitive neuroscience are ignored in his piece, and because he hopes the findings of outer empiricism will allow him to become more fully himself, the reader is left with the impression that Ó'Nualláin is willing to sacrifice absolute objectivity in an effort to elevate the status of subjectivity (or inner empiricism) in consciousness studies. The following passage illustrates the problem:

For the advaitin, consciousness is the fundamental reality. It is the wave function just before breakdown, or the observer just before consciousness, which are the same thing. It is spread throughout the entire universe, and contains infinite possibilities. What we know as the world, and the events of our lives, are mere superimpositions on it. The metaphor Ramana Maharshi uses is that of the blank cinema screen, which remains the same as the movie is projected on it. In meditation in a correct setting, this reality is allowed to reoccupy those parts of the psyche from which the ego customarily bars it. Ultimately, there is no distinction between subject and object. (p. 37)

While this is a good example of metaphorical thinking, we are soon asked to consider the metaphor more deeply and, more specifically, consider the relationship between experimental observations made by quantum physicists and the subjective experience (and metaphors) of those who practice meditation.

The square of the modulus of the wave function at any point represents the probability that the particle is (found) at that point once an observation is performed. However, before observation, the particle is, as it were, smeared all over the cosmos, containing infinite potential for any measurable property. For example, we might decide to measure its momentum property, rather than position. Lucille's major insight is that this pre-observation state of the particle is identical with what Advaitins call consciousness. Moreover, this state is identical with the state of the observer just prior to observation....The idea central to Vedanta, that Atman and Brahman are one, finds a correlate at the physical level.” (p. 38)

To say that the *idea* corresponding to the *state* described by Advaitins finds a correlate at the physical level is misleading, and it is at this point that the dialogue between inner and outer empiricism might start to run into difficulties (see Rose, 2006, for an excellent critique of theories that jump from quantum levels of analysis to psychological levels without consideration of the levels in between).

When we consider ontological levels applicable to models of human consciousness (as described by scientific disciplines: physics, chemistry, biology, psychology, sociology, ecology, and so on) we might assume that when Ó'Nualláin talks about content empty consciousness as a ‘thing’ he is suggesting that it can be found at the psychological level and that it is functionally linked to mechanisms operating at the biological (neural) level. But he is not explicit in this regard; he bypasses biology and chemistry and jumps directly to physics in an effort to support his metaphors.

More generally, Ó'Nualláin believes there will be a “Copernican” revolution soon after “a substrate of subjectivity is posited as existing independently of the contents of consciousness” (p. 36). In positing a substrate of subjectivity independent of the contents of consciousness, Ó'Nualláin follows a long tradition deeply rooted in mythical, religious, and esoteric schools of belief and practice, and he is aware of this tradition. However, his attitude toward scientific modes of thinking (as applied to the study of consciousness) appears biased and simplistic. For example, by assuming that the scientific study of consciousness has focused solely on studying the ‘contents of consciousness’ he fails to recognise that modern cognitive neuroscience also attempts to answer the question: how do different brain states correlate with (or cause) different *states* of consciousness, including the “nothingness” state experienced by those in deep meditation (Cahn & Polich, 2006; Coward, 2005)¹.

At the same time, we have to consider the dialogue that Ó'Nualláin calls for. Being pragmatic, we have to assume that *getting the dialogue started between inner and outer empiricism* is the primary goal in this context, as no new learning will take place without dialogue. But in order for there to be a meaningful dialogue between inner and outer empiricists, there needs to be some *content* to their language (i.e., they need to clearly describe the phenomena under empirical investigation; and they need to establish coherence as a group of speakers, such that meaning can be shared and collective knowledge advanced). This implies consideration of (and eventual consensus as regards) the epistemological levels (or levels of description) that will be necessary to support thinkers working together. Pinpointing epistemological levels may be more problematic for Ó'Nualláin and others with an interest in content empty consciousness than it is for those who focus solely on describing the content of consciousness (i.e., the experience of objects, events, intentions, and so on).

This is not to say that content empty consciousness does not exist as a ‘thing’, only that a common language used to frame the levels of description best suited to an analysis of the thing may be difficult to pin down. And, naturally, even if participants in a dialogue agree that there is good reason for a distinction between consciousness and the contents of consciousness, the cognitive neuroscientists sitting in the room are going to want to introduce levels of description that detail the brain “hardware” and “software” involved (M.J. Hogan, 2006), and it is questionable whether or not inner empiricists will value their contribution. Because inner empiricism works directly with subjective data, the facts and relations at the psychological level of analysis appear most relevant.

Moreover, it is difficult to know how an inner empiricist might respond when asked the question: What kind of empirical analysis do you use to describe your own “nothingness”? The experience of nothingness may be the first step on the royal road to consciousness, but the problem of moving from a “nothingness” (or “no-mind”) state to a description of the state has long been recognized. The opening lines in some translations of Tao Te Ching run as follows: *Those who know do not speak; those who speak do not know* (Huang, 1973). If one assumes there is no content to

¹ A proposed relation between brain states and states of consciousness does not imply a one-to-one correspondence, such that certain brain states always correspond to certain states of consciousness (see Rose, 2006, for a critique of this idea). A more realistic view given our current understanding of brain systems is the homoncular functionalist view, which assumes that different states of consciousness emerge from different functional states regulated by multilevel hierarchically organized brain systems.

consciousness when in the “nothingness” state, one might also assume (like a stubborn Zen master) that there is nothing to talk about, or that it is better not to talk about ‘it’ because talk about it introduces content, which conflicts with the idea that it is the ‘content empty consciousness behind the content of consciousness’. This is not to say that dialogue between inner or outer empiricism is impossible in this context, only that some members of the inner empiricism camp who advocate exploration of the content empty consciousness behind the content of consciousness might not see the purpose of dialogue with the external empiricists and vice versa.

Dialogue bridging the two camps requires a specific focus that will help everyone develop understanding. One example is the ongoing work by Davidson and colleagues, who study the brain and immune system functioning of people who have developed a very high level of skill in the practice of meditation (Davidson & Kabat-Zinn, 2004). This research is of great interest to the Dalai Lama, who visits Davidson to engage in dialogue about research findings. Having said that, some neuroscientists object to the Dalai Lama presenting at neuroscience conferences, because he is a religious leader and not a neuroscientist (Adam, 2005). This suggests that the dialogue between inner and outer empiricism will be contentious if it mixes religion with philosophy and science. It is possible that a more acceptable merger of inner and outer empiricism will be observed when there emerges a critical mass of people with both a deep understanding of phenomenology and cognitive neuroscience (Metzinger, 2003).

Accepting that a dialogue between inner and outer empiricists *will* produce benefits, any effort to bridge the two camps will need to be a little more specific about the potential crossover of benefits. If we assume an equitable cross-over of benefits, the dialogue should help outer empiricists solve problems by supporting their thinking about the design of new methods of analysis, the specifics of which Ó’Nualláin does not make clear. The dialogue might also help outer empiricists to become better inner empiricists and thus gain some personal benefits, the specifics of which Ó’Nualláin does not make clear. Naturally, the dialogue might also help inner empiricists become better outer empiricists, and the strategy by which this can be achieved needs to be specified.

To reiterate, Ó’Nualláin assumes that content empty consciousness exists as a ‘thing’, and while it may be of great value for inner empiricists to experience this thing, the dialogue between inner and outer empiricism needs to consider the levels of description best suited to an analysis of the thing. Notably, subjectivity and objectivity may correspond to different ways of knowing and experiencing the world, but we can both subjectively experience and objectively analyse experience from many different levels of description². Therefore, in advancing the dialogue between inner and outer empiricism, it is useful to shed some light on ontological and

² By reference to the idea that perception itself never involves the experience of single quale, but rather complex wholes, and by reference to the idea that the brain analyses stimuli using multilevel hierarchically organized modular brain systems, it is reasonable to consider perception (or phenomenal consciousness) as multilayered. For example, at a low level of analysis a stimulus might be experienced as a patch of green; at the next higher level it is the surface of a table, and at the next higher level it is table in your kitchen. And one can go further: it is the table your parents gave you when you got married. (As David Rose notes, the term ‘levels of analysis’ can be meaningfully applied not only to the scientific study of reality -- the levels within hierarchically organized systems -- but also to subjective experience, and we need to be careful to distinguish these two meanings here).

epistemological issues of relevance to consciousness studies. I advance upon Ó'Nualláin in two ways. First, I suggest that the search for meaning in consciousness studies will involve consideration of levels of description best suited to the analysis of phenomena. Second, I suggest that, in future efforts to understand content empty consciousness it will be useful to differentiate various states of consciousness, for example, “mindfulness”, “nothingness”, and “no-mind”.

Ontological and epistemological interdependencies and the search for meaning

Let us assume, like Ó'Nualláin, that there is a substrate of subjectivity that exists independently of the contents of consciousness, and let us call this substrate “no-mind”. Let us next assume that it is our clear and specific intention to facilitate the merger of inner and outer empiricism such that no-mind can be understood more fully. How should we go about analysing no-mind as psychological scientists?

Detailed understanding of consciousness will involve using hierarchies of description which make it possible to describe causal relationships within a phenomenon on many different levels of detail (Coward, 2005). For example, when considering the path from neurons to consciousness, we must embrace the challenge of thinking about how the intricately designed, detailed parts of an evolved living system can produce experiences like the perception of “being one” (M.J. Hogan, 2006). And even if we explore from the perspective of inner empiricism a quality of thinking where *absolute objectivity and absolute subjectivity are experienced as one absoluteness*, we cannot neglect as outer empiricists the hierarchies of description that make it possible for others to describe our experience.

Psychological scientists gravitate toward different levels of description, often called models, which span the realms of biological, behavioural, and social sciences. Prior to the birth of scientific thinking (and the ability to represent the relation between self and other by reference to an ‘objective’ theory), historical artefacts suggest that human consciousness was *undifferentiated* (Gebser, 1985). Gebser describes what he calls the *magical* period, where self and other were experienced as *one-and-the-same* (i.e., consciousness was one-dimensional). Later, with the development of language as a form of communication, self and other were differentiated, and a narrative, non-scientific account was constructed outlining the “reasons” why the world is alive. In this *mythical* era, elements of reality and experience are named, and creation myths are passed from generation to generation. Here, Gebser describes consciousness as two-dimensional (2D). With the birth of science, reasoning became grounded in observation and description of functional relations in the concrete world. *Hypothetico-deductive reasoning* (where ‘theories’ are constructed as a means of understanding the relation between self and other, i.e., 3D consciousness) emerged as a significant force. Different levels of reality were slowly differentiated, and there came about a rapid, expanding cycle of analysis and synthesis in effort to arrive at an objective account of phenomena, including consciousness (see Figure 1)³. With the slow expansion of scientific analysis and synthesis the physical, chemical, biological,

³ The long established dualism separating the immaterial from the material was challenged from the Renaissance on, and the major debate in the philosophy of mind was between monism and dualism; the debate was, and still is, anchored by reference to religious belief systems (Stewart, 2006).

psychological, social, ecological, and cosmic levels of analysis gravitated toward greater integration.

In the hierarchy of order from non-living to living systems we can assume the objects and causal relationships at higher levels can be defined as combinations of more detailed objects and causal relationships⁴. However, we cannot assume that the objects and causal relationships at a higher level of description can be easily understood by reference to combinations of more detailed objects and causal relationships. Living systems are unique in the sense that novel, coherent structures and properties can emerge during the process of self-organization, and these higher-order structures and properties cannot be predicted by reference to simple linear or additive functional relations operating at lower levels of analysis (Kauffman, 1993). Furthermore, all scientists must accept that *any* account of *any* phenomenon is limited by the number of parts within the whole that we consider (J.N. Warfield, 2003). We cannot reduce *all* the facts and relations of the universe to system. And because everything in the universe is connected, complexity can always be increased by inclusion of more aspects of the system, but this is not always useful. As such, many scientists proceed with the assumption that there is ontological unity without “consilience” (Wilson, 1998).

Working to integrate levels of description relevant for a complete understanding of human psychology involves describing functional relations that cross levels of description in the hierarchy of living systems; it involves working *upward* and *downward* in the hierarchy of ordered relations, describing ways in which observations at a lower level of description account for (or supplements) description of phenomena at a higher level, and how levels interact – bottom-up and top-down. In this sense -- and converse to De Bono’s meaning (De Bono, 1990) -- *vertical* thinking and modelling works to *synthesise levels* of description, whereas lateral thinking works to *model relations within a level* of description (see Figure 1).

For the inner empiricist, the assumption that no-mind exists is relatively easy to accept: it is a decision based on an observation in the realm of private action. Furthermore, inner empiricists do not need to make their observations public (the level above), nor do they need to speculate about neural dynamics (the level below) in order for their observations to be deemed true. For the inner empiricist, the truth of the state can be found in the state itself, and the extent to which it is defined as a distinct state depends on whether or not it is experienced as a distinct state in the realm of private action.

However, the merger of inner with outer empiricism in efforts to advance consciousness research will involve the synthesis of three levels of description: the description of nervous systems (where consciousness arises), systems of private action (where consciousness is experienced, one way or the other), and systems of public action (where the results of both internal and external empiricism are reported

⁴ At the same time, the functional relations (both between and within) each of these levels are very different, and I do not take seriously the idea that ‘self-organization’ implies that there are ‘rules of emergence’ or ‘isomorphisms’ that capture the dynamics of system change at every level of analysis. The search for isomorphism has produced little of lasting value. On the other hand, the careful application of systems science to real world phenomena at different levels of analysis has produced much of lasting value (Fischer & Bidell, 2006; Kauffman, 1993; J. N. Warfield, 2006).

in a language). When applied to the study of consciousness, these three levels of explanation are synthesised by different psychologists in different ways (Austin, 2000; Cahn & Polich, 2006; Davidson & Kabat-Zinn, 2004; Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004). For example, we know from many verbal reports what the experience of “nothingness” or “no-mind” is like for those who have mastered the art of meditation, and we know something of how the brain changes as a consequence of arriving at this state.

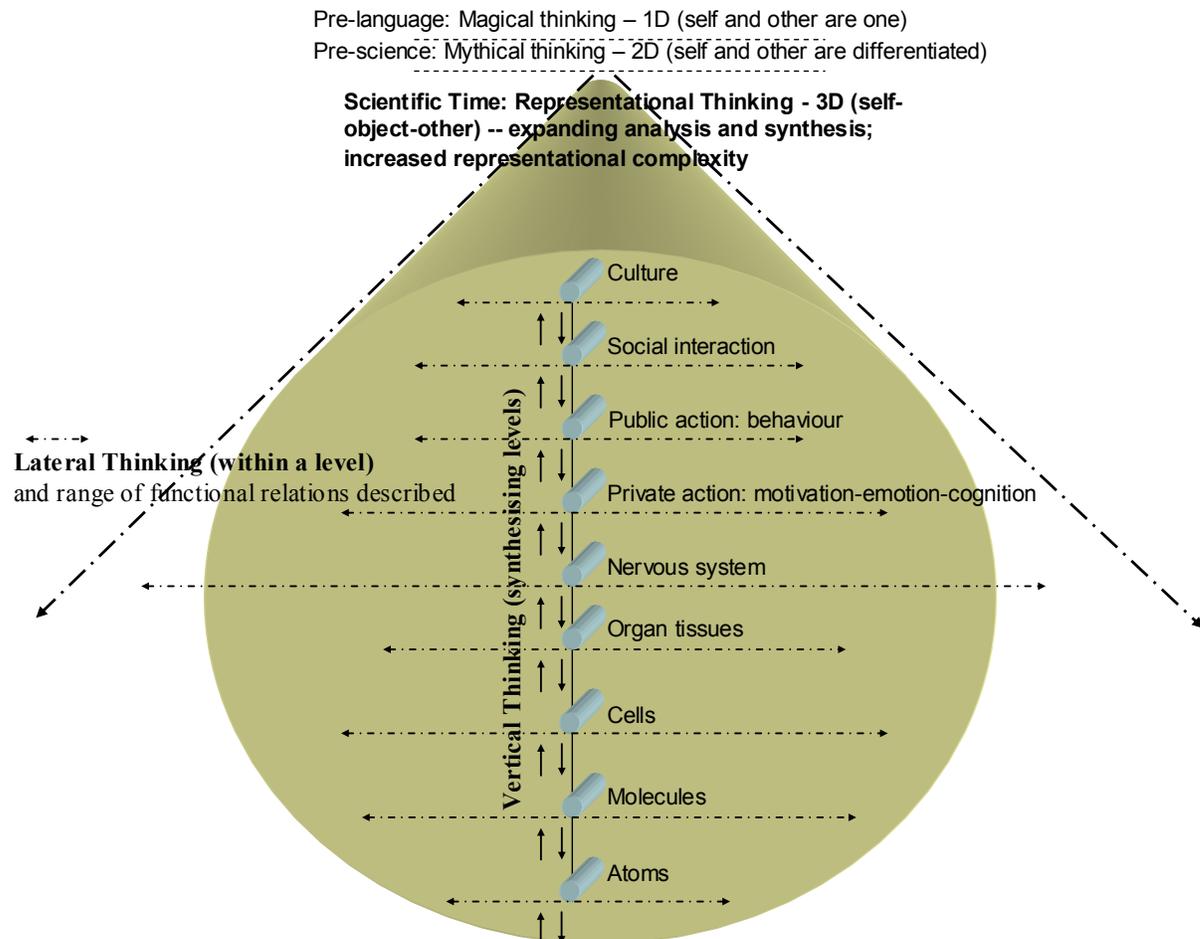


Figure 1. Levels of analysis in human systems and functional interactions within and between levels that can be represented in models of reality.

We might assume that the analysis of consciousness from a combined neural/private action/public action systems perspective can produce an equitable cross-over of benefits in the exchange between inner and outer empiricists. For example, if outer empiricists have access to participants who can reliably access, describe, and distinguish alternative states, through a process of classifying and activating different states and measuring the brain dynamics associated with the states, it may be possible for outer empiricists to map subtle distinctions using fMRI, EEG, and MEG technologies and construct increasingly refined neural models of consciousness. The dialogue between inner and outer empiricists might also help inner empiricists become better practitioners of science, particularly if the process of talking with outer

empiricists forces them to describe their states with evermore subtle degrees of specificity, thus facilitating their understanding of previously unrecognised distinctions. Working with outer empiricists might also help inner empiricists better understand their brain state during practice (e.g., if EEG feedback is provided during meditation). Furthermore, by communicating their findings with clarity to the scientific community, outer empiricists might facilitate greater understanding and acceptance of practices designed to activate various esoteric (or non-normative) states of consciousness, including “no-mind”. The alternative (i.e., doing no analysis of esoteric states) leaves the population open to a barrage of magical and mythical beliefs, thus reinforcing the idea that we are not interested in establishing the truth (Frankfurt, 2005).

At the same time, using highly trained inner empiricists as participants changes the nature of cognitive neuroscience research. One major difference between this strategy and the more common strategy used in cognitive neuroscience (i.e., of controlling stimulus conditions and modelling brain dynamics by reference to human computer interactions) is that it relies quite heavily on the ability of participants to report accurately their state. Experiments in this area are open to a whole host of unique reliability and validity issues (e.g., is the state the same state from session to session; is the description of the state accurate; do different participants use the same language to describe the same state; and so on). If the merger of consciousness research and cognitive neuroscience is going to succeed, issues of reliability and validity associated with a cognitive neuroscience analysis of consciousness states will need to be a central part of the dialogue between inner and outer empiricists.

There is already a substantial body of research in this area that offers us ample scope for testing of novel hypotheses. For example, the research by Richard Davidson and colleagues suggests that deep meditative states (of non-referential compassion) can induce high levels of gamma wave synchronization in the brain. Gamma is a frequency associated with the binding of gestalts and the integration of distal systems of the brain during learning (Miltner, Braun, Arnold, Witte, & Taub, 1999; Pulvermuller, Lutzenberger, Preissl, & Birbaumer, 1995). Therefore, we might speculate that internal empiricism, if it is successful in producing these heightened gamma power brain states, may facilitate increased cognitive power. While such a view may be consistent with some research findings (Cahn & Polich, 2006), returning to the issue of reliability and validity of reported states, we have to be careful at this point to distinguish different states of consciousness being analysed by different researchers (Austin, 2000).

Distinguishing no-mind from mindfulness

In describing a substrate of subjectivity that exists independently of the contents of consciousness (and “nothingness”), Ò’Nualláin describes something both very general and very ambiguous. At the same time, by pointing to the Advaitin and Yogic traditions, Ò’Nualláin recognises that one path to “nothingness” is through the practice of meditation. Following Austin (2000), we can highlight a number of levels (or states) of consciousness that connect “mindfulness” (Bishop et al., 2004) to “nothingness” and “no-mind”.

Bishop and colleagues describe mindfulness “*as a kind of nonlaborative, nonjudgmental, present-centered awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted as it is.... Mindfulness begins by bringing awareness to current experience—observing and attending to the changing field of thoughts, feelings, and sensations from moment to moment—by regulating the focus of attention. This leads to a feeling of being very alert to what is occurring in the here-and-now. It is often described as a feeling of being fully present and alive in the moment*”. (p. 232)

Critical to the practice of mindfulness is sustained attention (the ability to maintain a state of vigilance over prolonged periods of time) and attention switching (the ability to bring attention back, for example, to the breath once a thought, feeling or sensation has been acknowledged). Bishop et al. distinguish their definition of mindfulness from other definitions (Langer, 1991) which emphasise an explicit focus on external (environmental) stimuli rather than the variety of thoughts, feelings, and sensations that arise when attempting to focus on the breath for a sustained period of time.

In describing what he calls shallower meditative modes, Austin (2000) argues that novice practitioners do not necessarily distinguish external from internal focus. In other words, the first stage of meditation may involve a mode of mindfulness where recurrent thoughts and sensations are linked to both external and internal stimuli. It is only when practitioners move to a deeper meditative mode that they can truly choose whether or not they will focus selectively on external or internal stimuli (i.e., practice “inner” or “outer” mindfulness). At a deeper level of meditation practice, Austin points to a movement from transient thoughts and sensations linked to the focus of attention (be it internal or external) to “no thoughts” (p. 300). It is this capacity for no thoughts that is essential to the experience of “nothingness” as distinct from “mindfulness”, and consistent with Ó’Nualláin’s point of entry into consciousness studies, Austin’s scheme highlights how different types of “nothingness” experience act as important steps on the royal road to “no-mind”.

Specifically, Austin (2000) notes that states of consciousness during meditation differ by reference to the intensity of awareness the practitioner can attain, maintain, and use, with higher intensity states allowing for deeper levels of experience, at least until a final stage is arrived at where a very high intensity state of awareness is no longer needed to maintain a stable, trait-like type of awareness that is unbounded.

For example, during the early stages of practice, as intensity of awareness increases from moderate to maximal, practitioners of meditation report significant changes in the experience of 1) a bounded self, 2) a sense of time and place, 3) sensate perceptions registered, 4) positive affect, and 5) detachments from cravings/aversions. For example, Austin describes a moderately advanced state called “absorption with sensate loss: internal absorption” (p. 302), where there is temporary awareness of awareness itself permeated by silent space. In this state, which characteristically lasts from seconds to minutes, there is no bounded self experienced, no sense of time or place, and no sensate perceptions registered; levels of positive affect are high and are retrospectively described using words like “enchantment”, “bliss”, “rapture”, and so on. Importantly, this state of consciousness is the 5th level in Austin’s 8-level scheme, which transitions from shallow states of meditation (level 1), through internal

absorption (level 5), and on through to the “stage of ongoing enlightened traits” (level 8).

Although “nothingness” could be used as a summary term to describe Austin’s 5th level (“absorption with sensate loss: internal absorption”), there is a higher-level state that is a *fuller* type of “nothingness”. Specifically, after internal absorption (level 5) has been experienced, the practitioner can focus attention again on external stimuli and, with a maximal intensity of awareness, experience a sense of oneness with *external* stimuli. At this level (level 6: “Insight-Wisdom”, p. 303) there is no bounded self experienced, no sense of time or place, but *maximal* sensate perceptions registered. This state of consciousness comes before the state of “Ultimate being” (level 7, p. 303), which is the fuller type of “nothingness” mentioned above. According to Austin, “Ultimate Being” involves the experience of emptiness with a maximal intensity of awareness linked to no bounded self, no sense of time or place, no sensate perceptions, and an inexpressible emotional experience. Austin uses the footnote description “pure being, beyond subject and object” (p. 303).

Notably, “Ultimate Being” is a state of consciousness that is sustained for seconds to minutes at best. In other words, “nothingness” (both at level 5 and at level 7) is not long retained and, ultimately, it is a non-functional state (in the sense that it is not linked to any adaptive goals)⁵. My own experience of level 7 states is best described as “being white light”: it is a state that one must ‘let happen’ and then ‘let be’ (M.J. Hogan, 2002).

Having experienced all these state of consciousness, the practitioner can move to the final stage in Austin’s scheme, “The Stage of Ongoing Enlightened Traits”. The unique aspects of this state are 1) it is ongoing, and thus better described as a trait rather than a state⁶, 2) it is linked to a moderate (rather than maximal) intensity of awareness and thus can better sustain itself alongside an unbounded external and internal awareness, 3) it allows for free access to an unbounded sense of self, and 4) it is “so in the flow of events that positive things happen with the lightest touch” (p. 303).

I use the term “no-mind” to refer to this final state. No-mind is a new *normal* (and thus *trait-like*) state of consciousness that is experienced after level 7 states have been repeatedly experienced for a sufficient period to time to allow for new automatic patterns of sensorimotor experience to be consolidated in the brain, thus acting as a relatively stable background state during the pursuit of day-to-day goals. Consistent

⁵ The final drawing in the Zen oxherding drawings is the drawing of a man greeting another man on a woodland path. It is sometimes called ‘Return to the World’. It is necessary to return to the world after “nothingness” has been experienced such that everyday goals can be pursued.

⁶ Austin asks: what could explain this staying power? And he answers: “Ultimately, it could reflect the stability of a whole new simplified neurophysiological baseline” (p. 309). Consistent with Bishop et al.’s (2004) view that mindfulness is a *mode* or “the manner in which a thing is done... a psychological process... a skill that can be developed with practice” (p. 234), I assume that consistently accessing level 7 states will reconfigure and make automatic patterns of sensorimotor experience that are instantiated in the neocerebellum and the frontal cortex (M. J. Hogan, 2004), thus altering the nature of goal pursuit behaviour considerably, that is, outside of level 7 states and inside of normal day-to-day states of consciousness. At the same time, having experienced level 7 states consistently for a time, normal day-to-day states of consciousness are readily connected to an unbounded external and internal awareness. But regular practice of meditation (or Taijiquan) is needed to maintain automaticity.

with Austin's description, I assume that the growth of "no-mind" as a skill significantly increases selfless compassion. How this occurs precisely has yet to be properly investigated. Longitudinal studies that record practitioners' brain function, private action, and public action over time will be needed to understand how the transformation occurs. Having said that, there is a long tradition of analysis suggesting a connection between feelings of oneness and feelings of potent positive emotions (Csikszentmihalyi, 1990; James, 1985; Peterson, 2006). From a purely pragmatic perspective, learning to project positive emotion outside of oneself and on to others may help neutralize the tendency to interpret behaviours negatively, mirror the negative emotion of others, become frustrated when goals are blocked, or compete unnecessarily with others (Lyubomirsky, King, & Diener, 2005). Also, non-referential compassion and a trait-like tendency toward altruism are very beneficial in the sense that they help to maintain the positive emotion supporting broad thought-action repertoires (B.L. Fredrickson, 1998; B. L. Fredrickson & Losada, 2005), and it is possible that a sense of unbounded external and internal awareness hinges upon our ability to maintain these broad thought-action repertoires.

It is my view that 6 to 10 years of *quality* practice mixing sitting and moving meditation (e.g., Taijiquan), repeatedly experiencing level 7 states in the later years while testing the consequences associated with the pursuit of different goals *in and around the state* is sufficient to entrain no-mind as a relatively stable background state during the pursuit of day-to-day goals (M.J. Hogan, 2002). This view is consistent with the body of literature suggesting that the development of expertise in many domains skills (music, tennis, academia, chess, and so on) takes approximately 10 years of intense practice (Hayes, 1989). Ultimately, this process of moving toward "no-mind" involves acting as an inner empiricist, following the age-old tradition of practicing meditation and allowing for the growth of an increasing intensity of awareness, such that one can move through levels of consciousness and stabilize at a new level of dynamic equilibrium.

In conclusion

I agree with Seán O'Nualláin: the distinction between inner and outer empiricism is useful, and consciousness research can benefit from analysis in both directions, that is, via the exploration of facts and relations that facilitate a third-person understanding of consciousness and via the direct exploration of conscious experience itself. However, in positing and working to understand a substrate of subjectivity independent of the contents of consciousness (and, more specifically, a state of "nothingness"), the dialogue between inner and outer empiricism will only bear fruit if the issues surrounding ontological and epistemological interdependencies in consciousness research are openly discussed. In this comment I have critiqued O'Nualláin's initial thoughts on the subject, pointing to the danger of jumping from quantum physics to private action without reference to the levels in between. I have pointed out that there are levels of description and interdependencies between levels of analysis we need to consider when searching for meaning in consciousness studies. I have noted that there are issues of reliability and validity that need to be considered if the reported experiences of inner empiricists are to be analysed using the methods of outer empiricism. I have suggested that there are distinct states of consciousness that describe the transition from "mindfulness" through "nothingness" to "no-mind", each of which can potentially be analysed as a separate product of inner empiricism.

Finally, I am optimistic: I have suggested that the analysis of consciousness from a combined neural/private action/public action systems perspective can produce an equitable cross-over of benefits in the exchange between inner and outer empiricists if both groups are willing to instruct and learn from one another.

- Adam, D. (2005, July 27). Plan for Dalai Lama lecture angers neuroscientists. *The Gaurdian*.
- Austin, J. (2000). *Zen and the Brain*: MIT Press.
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology-Science and Practice, 11*(3), 230-241.
- Bohm, D., & Nichol, L. (1996). *On dialogue*. New York: Routledge.
- Cahn, B. R., & Polich, J. (2006). Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychological Bulletin, 132*(2), 180-211.
- Carver, C. S., & Scheier, M. (1998). *On the self-regulation of behavior*. Cambridge, UK; New York, NY, USA: Cambridge University Press.
- Chiesa, M. (1994). *Radical behaviorism: the philosophy and the science*. Boston: Authors Cooperative.
- Coward, A. (2005). *A System Architecture Approach to the Brain*. New York: Nova.
- Csikszentmihalyi, M. (1990). *Flow: the psychology of optimal experience* (1st ed.). New York: Harper & Row.
- Davidson, R. J., & Kabat-Zinn, J. (2004). Alterations in brain and immune function produced by mindfulness meditation: Three caveats - Response. *Psychosomatic Medicine, 66*(1), 149-152.
- De Bono, E. (1990). *Lateral thinking: a textbook of creativity*. London; New York: Penguin Books.
- Dennett, D. (1988). Quining qualia. In A. J. Marcel & E. Bisiach (Eds.), *Consciousness in comtemporary science*. Oxford: Oxford University Press.
- Fischer, K. W., & Bidell, T. R. (2006). Dynamic development of action, thought, and emotion. In W. Damon & R. M. Lerner (Eds.), *Theoretical models of human development. Handbook of child psychology* (6th ed., Vol. 1, pp. 313 - 399). New York: Wiley.
- Frankfurt, H. G. (2005). *On bullshit*. Princeton, N.J.: Princeton University Press.
- Fredrickson, B. L. (1998). What good are positive emotions? *General Review of Psychology, 2*(3), 300 - 319.
- Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist, 60*(7), 678-686.
- Gebser, J. (1985). *The ever-present origin*. Athens, Ohio: Ohio University Press.
- Hayes, J. R. (1989). *The complete problem solver*. Hillsdale, NJ: Erlbaum.
- Hogan, M. J. (2002). *The Spirit of Joykungtai: Returning to Mood, Method, and Reality*. Unpublished manuscript, Galway.
- Hogan, M. J. (2004). The cerebellum in thought and action: A fronto-cerebellar aging hypothesis. *New Ideas in Psychology, 22*(2), 97-125.
- Hogan, M. J. (2006). Consciousness of brain. *The Irish Psychologist, 33*(5,6), 126 - 130.
- Huang, A. C.-I. (1973). *Embrace tiger, return to mountain: the essence of t'ai chi*. New York Bantam Books.
- James, W. (1985). *The varieties of religious experience*. Cambridge, Mass.: Harvard University Press.

- Kauffman, S. A. (1993). *The origins of order: self-organization and selection in evolution*. New York; Oxford: Oxford University Press.
- Labouvie-Vief, G. (2005). Self-with-other representations and the organization of the self. *Journal of Research in Personality*, 39(1), 185-205.
- Langer, E. J. (1991). *Mindfulness: choice and control in everyday life*. London: Harvill.
- Lutz, A., Greischar, L. L., Rawlings, N. B., Ricard, M., & Davidson, R. J. (2004). Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. *Proceedings of the National Academy of Sciences of the United States of America*, 101(46), 16369-16373.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, 131(6), 803-855.
- Metzinger, T. (2003). *Being no one: the self-model theory of subjectivity*. Cambridge, Mass.: MIT Press.
- Miltner, W. H. R., Braun, C., Arnold, M., Witte, H., & Taub, E. (1999). Coherence of gamma-band EEG activity as a basis for associative learning. *Nature*, 397, 434-436.
- O'Nualláin, S. O. (2006). Inner and outer empiricism in consciousness research. *New Ideas in Psychology*, 24, 30 - 40.
- Peterson, C. (2006). *A primer in positive psychology*. Oxford: Oxford University Press.
- Pinker, S. (1997). *How the mind works*. New York: Norton.
- Pulvermuller, F., Lutzenberger, W., Preissl, H., & Birbaumer, N. (1995). Spectral responses in the gamma-band physiological signs of higher cognitive processes? *NeuroReport*, 6(2059-2064).
- Rose, D. (2006). *Consciousness: philosophical, psychological, and neural theories*. Oxford; New York: Oxford University Press.
- Sim, D. S.-V., & Gaffney, D. (2002). *Chen Style Taijiquan: The Source of Taiji Boxing*. Berkeley, CA.: North Atlantic Books.
- Siu, R. G. H. (1957). *The Tao of science; an essay on Western knowledge and Eastern wisdom*. [Cambridge]: Technology Press.
- Stewart, M. (2006). *The courtier and the heretic: Leibniz, Spinoza, and the fate of God in the modern world*. New Haven, CT; London: Yale University Press.
- Warfield, J. N. (2003). A Proposal for Systems Science. *Systems Research and Behavioral Science*, 20, 507 - 520.
- Warfield, J. N. (2006). *An introduction to systems science*. Singapore: World Scientific.
- Wilson, E. O. (1998). *Consilience: the unity of knowledge* (1st ed.). New York: Knopf: Distributed by Random House.