NEO-PIAGETIAN TRANSPERSONAL PSYCHOLOGY: A NEW PERSPECTIVE

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ABSTRACT: Transpersonal aspects of development show potential to complete Piaget's project. At both the beginning and the end of his career Piaget showed an interest in transpersonal themes, which he approached through the theory of "immanentism;" in the present age he would have been classed amongst transpersonalists. In Piaget's genetic epistemology both evolution and development progressed in Hegel-like manner towards an ever-increasing ultimate value, in a manner which foreshadowed "participatory" approaches to transpersonal psychology. Neo-Piagetian psychology argues that an individual could be at different stages of development for different tasks. Echoing this trajectory, it is suggested that lines of meditative development pass through shared stages at independent rates. Lines of meditative development also aid the unfolding of aspects of ordinary ego development. The article identifies an alternative to the hierarchical neo-Piagetian transpersonal psychology offered by Alexander, Commons, Kohlberg, Sinnott, and Wilber.
KEYWORDS: transpersonal, transpersonal development, neo-Piagetian, Piaget, meditation, contemplation.

Piaget is perhaps one of the most influential figures in the history of psychology. His model of the development of the stages of representational cognition (described later in the article) has provided the basis for educational curricula around the world.[1] Yet his focus was really something much greater: in fact, his project had plenty in common with today's transpersonal paradigm, but this aspect of his work was never completely fulfilled. This failure was due in large part to a lack of a developed transpersonal paradigm in the literature for most of his career. Piaget was in no position to benefit from the integration of Eastern and Western thinking that began approximately in the 1970s, but only intensified in the 1990s, and has intensified again since the year 2000.

The transpersonal nature of Piaget's vision might be unknown to researchers who are nonetheless conversant with parts of his approach. For the young Piaget (1916, 1918, 1928, 1929, 1930), as well as for the later Piaget (e.g., 1983), especially in informal discussions (e.g., Bringuier, 1980), the development of the individual was considered to be concomitant with the growth of the felt experience of "value." Evolution and ontogeny constituted a progression towards something like the Hegelian Absolute or the Platonic Good (though this was most often expressed through the philosophy of Bergson, who identified the traditional notion of God with the evolutionary process of life itself.) This trajectory culminated in the experience of "immanence," a self-transcending absorption into the stream of life. About this experience, Piaget (1929, p. 39) wrote "whenever the unifying action of love overcomes the ego,

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then the conscience has the experience *sui generis* of harmony with thought which is the mystical experience supreme." God was immanent in the world, and came into being concomitantly with human self-knowledge (especially the higher forms of self-knowledge).

Successful development involved more than the development of the logico-mathematical truths of representational cognition and science, for which he is well known; in fact, Piaget's interest in representational cognition was a subset of his interest in the development of the experience of value (Chapman, 1988; Müller, Carpendale, & Smith, 2009). Piaget's early writing (e.g., 1918) was concerned with the reconciliation of truth and value in the individual and the reconciliation of their cultural forms—science and religion—in wider society. The ideal equilibrium that the individual could attain was the experience of ultimate value, which inspired religiously or mystically flavoured language. The Absolute or the Good constituted the realisation of ideal equilibrium in the individual. This wider concern situates Piaget more comfortably in the company of Plato, Kant, and Hegel than with other twentieth century psychologists including Skinner and Freud.

In 1918 Piaget was writing, "to struggle for the good and the true is thus, in the fullest sense of the word, to collaborate with God" (Piaget, 1918, p. 85). Although Piaget toned down the use of spiritual sounding language in his writing at later dates, still he stated in informal discussions with Bringuier, "to believe in the subject is to believe in the spirit" (Piaget in Bringuier, 1980, p. 51). Expression of these spiritual themes was by now explicitly divorced from theological terminology, a position underlined in Piaget (1971, 1983), where a teleological view of evolution was rejected in favour of contemporary teleonomy, and the unfolding of life and consciousness into truth and value was explained in terms of the on-going emergent properties of complex biological systems. Piaget's 1952 autobiographical essay (Piaget, 1952) dismissed his early interest in religion per se, but still stated that the early writings contained the central ideas of his life work. It seems that, despite his success, Piaget asked greater questions than he could answer.

BACKGROUND AND THEMES

The aim of the article is to outline a synthesis of Piagetian, neo-Piagetian, and transpersonal themes with the hope of both extending the range of issues to which Piagetian theory can eloquently contribute, while suggesting some new hypotheses concerning the nature of transpersonal development. The article explores three hypotheses (I will describe these briefly, and then define the terms in them over subsequent paragraphs): First, that lines of contemplative development echo the form and the dynamics of lines of neo-Piagetian development and consequently that much overlap exists in the growth of the two. (There are many forms of contemplation, but for the purposes of this article the focus will be on meditation.)[2] Secondly, the lines of meditative development affect the development of other lines so that the development of the whole individual can be aided through the practice of meditative exercises.

Third, the individual converges on greater knowledge of a shared spiritual reality across life, in an extension of the convergence of the individual on knowledge of physical reality.

Stages, Tasks, Contents, and Lines

Piaget is usually presented in a simplified general form involving four stages of cognitive ability, through which all or most individuals pass. These are the *sensorimotor stage* (understanding the world primarily through physical action), the *preoperational stage* (understanding the world primarily through the use of basic language), the *concrete operational stage* (understanding the world primarily through relations between concrete entities), and the *formal operational stage* (understanding the world primarily through relations between abstract entities). Both "contents" and "tasks" could advance through these stages. Contents refer to general cognitive areas like number, quantity, weight, etc. Tasks are more specific and refer to processes which are conducted using apparatus. For example the balance beam task involves predicting changes in the balance of the beam following the movement of weights positioned on the beam; hence the general content of weight is investigated through the balance beam task. Similarly, the water container task involves predicting the level of water in a container when water is poured in from a second container of differing shape; hence the general content of volume is investigated through the water container task. Contents and tasks are specific forms of the general notion of a "line." A line in psychology is any developmental facet which undergoes progression over time. Mathematical ability, moral reasoning skills, musical ability, or sporting skills can all be considered examples of lines of development. Piaget's interpreters generally presented him as believing that the same child would be at the same stage for all lines of development at a particular age, and hence development was said to progress in "synchrony" across contents and tasks. I say that this was his interpreters view rather than his own, as there is debate as to what Piaget really believed (see below).

Asynchronous Development and Neo-Piagetian Psychology

Piaget's work was highly influential, but underwent considerable challenge beginning in the 1970s and intensifying in the 1980s. This challenge was based around the idea that different areas of knowledge progressed at different rates, rather than all areas of knowledge passing through the stages in age-synchronised fashion. Important texts included Fodor (1983) and Gardner (1983), both of whom proposed that different modules existed and that modules developed at different rates. "Modules" are forms of intelligence; for example Gardner identified linguistic intelligence, musical intelligence, logico-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence. The term "module" is a synonym with "line" (and line was a phrase that Gardner also used). Modularity was a concept borrowed from computer design and applied to the brain: different areas of the circuit board in a computer performed different

tasks, and the human brain, it was argued, performed in much the same way. There was no reason, therefore, to expect different modules to develop at the same rate, as their functions were not related (Rumelhart & McClelland, 1986). In the evolutionary psychology of the 1980s and 1990s, which relied heavily on cognitive science and therefore on modularity, Piagetian theory was only considered relevant to psychology from a historical perspective. Many evolutionary psychologists, for example Cosmides (1989), were of the position that Piaget's work had no relevancy to evolutionary psychology, and was an outdated approach.

Neo-Piagetian psychology was the response by Piagetian scholars to the challenge from the cognitive science and evolutionary psychology paradigms to the original Piagetian framework. Neo-Piagetian psychology has been described as a synthesis of the original Piagetian theory with cognitive science/evolutionary psychology (Case, 1992). The modular basis of evolutionary psychology was upheld, but the different modules or lines of development were found to each unfold through Piaget's stages (though at different rates), and so important aspects of Piagetian theory were upheld as well. Classic examples of this approach include Case (1992) and Fischer, Kenny, and Pipp (1990). Development was therefore ''asynchronous'' across lines, rather than synchronised. While Piaget is generally taken as having believed that change was age synchronised across different lines of development so that the different Piagetian stages are achieved at (or close to) the same time for different lines of development, neo-Piagetian research showed that the same individual could be at different Piagetian stages for different lines at the same point in time, and thus development was asynchronous. As an example, a fifty year old university professor taking up the guitar will initially approach the guitar from a sensorimotor/preoperational perspective by learning how to hold down the strings effectively, then they will develop to a concrete operational level through learning set chords and pieces of music, and then they will develop to a formal operational level in which they apply the same generalised musical principles through novel situations and so learn to ''improvise'' or ''jam.'' Such a person will likely be operating at a formal operational level for the lines of development they use in their job and in their life in general (numerical reasoning, moral reasoning, interpersonal intelligence, etc) but will *still* have to begin from a sensorimotor level when they begin learning the guitar. Hence, as argued in neo-Piagetian theory, different lines of cognitive development progress through Piaget's stages at different rates.

There is debate as to what extent the development of one line can exceed another, but all neo-Piagetian child development theorists emphasise asynchrony as a core assumption. Some of the best known of the original group of neo-Piagetian scholars who have focussed on the independent development of lines include Robbie Case, David Feldman, Kurt Fischer, and Annette Karmiloff-Smith.[3] Authors including Flavell (1971) and Jamieson (1973) have argued that the neo-Piagetian versions are closer to the model Piaget actually described, and that the focus on asynchrony across tasks and contents was a simplified and inaccurate version of his theory in the first place.

For example, Piaget argued for "decalage"—the uneven spread of new developmental levels between different tasks and contents, an aspect of his work that is generally underemphasised, at least in undergraduate level treatments of Piaget's work. If this is the case, then neo-Piagetian theory actually represents a return to the original Piagetian form.

Postformal Development and Neo-Piagetian Psychology

A related but different group of neo-Piagetian scholars have investigated *postformal* development, including Labouvie-Vief (1980), Richards and Commons (1990), and Sinnott (1998). These scholars are said to be neo-Piagetian as they use Piaget's stages in their theory, but they build on the formal operational stage which is often considered to be the highest stage Piaget recognised.[4] Some neo-Piagetian scholars address transpersonal themes (e.g., Kohlberg, 1986; Fowler, 1981). Within transpersonal circles, Wilber and Alexander might be the best exponents of this post-formal form of neo-Piagetian psychology. Wilber (1980) for example suggested that subtle, causal, and non-dual stages followed on from psychological stages, while Alexander et al. (1990) described the possibility of stages of cosmic consciousness, refined cosmic consciousness, and unity consciousness forming a progression from earlier psychological stages. But this approach is different to the present article which looks specifically at the independent development of meditative lines through Patanjali's stages (or their cross-cultural facsimiles) at different rates.[5] This differential development between individuals and cultures was not a part of Wilber (1980) or Alexander et al. (1990).[6] The article proposes an alternative form of neo-Piagetian transpersonal psychology, based around the asynchronous development of meditative lines, in contrast to these postformal neo-Piagetian transpersonal psychologies. (But the two forms are by no means incompatible, as discussed as the article progresses.)

Genetic Epistemology

As well as the neo-Piagetian aspects, there are some other aspects of Piaget's original work which contribute to the ideas in the article: specifically Piaget's "genetic epistemology," a term which may not be familiar to all readers, which Piaget used to describe his theory of human development. The International Centre for Genetic Epistemology, the central institution of Piaget's research project, was founded in Geneva in 1956. The word "genetic" meant developmental and was derived from "genesis" (as in, the genesis of knowledge), rather than from "gene." Piaget's work in child psychology for which he is best known is just one aspect of his general study of knowledge in organisms from single cellular genre upwards. The biological base was important to Piaget, a qualified biologist, who continued to publish in biology journals throughout his career. Genetic epistemology was based around the mutual coalescence of subject and object, in a way which echoed the changing reflections of Ultimate Reality, described in participatory transpersonal theory. Neither the individual (or subject) nor the external world (or object) were fixed

or "given"—changes in one produced changes in the other, and vice versa, so that individual and world flowed into being together.[7] Piaget precursed this participatory turn: the creation of reality by the subject in his genetic epistemology was essentially participatory in nature, though Piaget could not fully extend his system into transpersonal territory in the way that his peripheral work suggested he would have liked. The similarities between participatory approaches and genetic epistemology have received little attention. The analogues that exist with genetic epistemology can reinforce a participatory approach to spirituality; likewise, transpersonal theory can potentially complete Piaget's original project in a manner which remained beyond Piaget.

<center>CONTEMPLATIVE LINES AND ASYNCHRONOUS DEVELOPMENT</center>

Like representational cognition, contemplative cognition also follows an asynchronous neo-Piagetian dynamic. Different lines of contemplative development (defined below) are developed to different degrees by different spiritual cultures, in proportion to the intensity of training that is put into each line, and this differential development contributes to explaining variability in the world's literatures of mystical phenomenology. This application of the asynchronous aspect of neo-Piagetian psychology to transpersonal themes is the core expansion that the article makes of the more regular neo-Piagetian transpersonal work, which focuses on postformal development.

Stages and Lines of Contemplative Development

Patanjali's Yoga identifies three stages of meditative development, *dharana*, *dhyana*, and *samadhi*. These represent successive stages of union with the object of meditation. Both concentrative meditation or "CM" and reflective meditation or "RM" styles of meditation pass through these stages (Washburn, 1978, 1995). CM progresses through concentrative awareness in which a focus is maintained on a particular object, and RM progresses through reflective awareness in which all objects arise and pass away in cognisance without grasping and in an uninhibited manner. Both CM and RM involve attention: CM involves mirror-like attention and RM involves laser-like attention (Washburn, 1995). Washburn (1995, 2000) traces Hindu, Buddhist, and Christian contemplative techniques through three stages. Although Patanjali and Washburn have used the dharana, dhyana, and samadhi terminology to refer only to CM, I have used them as generic terms that apply to stages of meditation commonly encountered in all three traditions. CM and RM can both be considered to pass through stages of attention (whether "mirror-like" or "laser-like") and in this sense Patanjali's terms are considered appropriate for both CM and RM. (In fact, many techniques generally considered to be RM, including Vipassana, actually combine both CM and RM. For example in Vipassana narrow or laser-like concentration on the object of the breath is used to stabilise general reflective of mirror-like awareness of all aspects of the mind and body as they arise and pass away

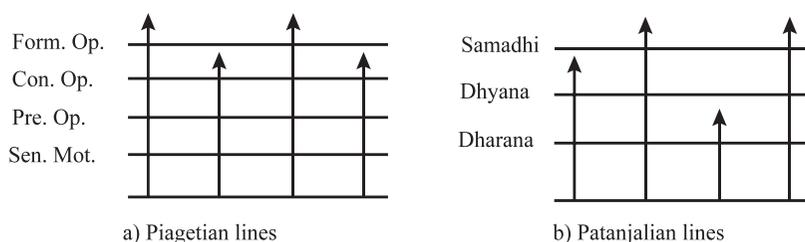a) Piagetian lines   b) Patanjalian lines

Figure 1. Neo-Piagetian psychologies, personal and transpersonal.

without grasping. In this and other respects the two techniques are not as distinct as is often imagined; general stages unifying the two techniques are to be expected.)

Numerous other lines of introverted transpersonal development can also be identified. ("Introverted" refers to eyes closed, motionless, meditative experience, "extroverted" to ordinary, eyes-open, waking consciousness.) These lines might include the gross, subtle, and causal contents of Vedantic psychology. As these Vedantic terms are usually associated with hierarchical frameworks these lines can be renamed *tactile*, *imagistic,* and *voidic* lines respectively. The gross line (tactile) reflects an increase in the tactile aspects of experience and is related to altered experiences of the body and the manifest world. The subtle line (imagistic) reflects an increase in the visual contents of experience and is related to an intensification of inner imagery. The causal line (voidic) reflects an increase in contentless experience or pure awareness, which is often described as an infinite expanse.[8] Alternatively, lines of meditative development might be delineated through correspondence to particular techniques of meditation, so that there is a *Vipassana* line, a *Zen* line, a *TM* line, etc.

The tactile, imagistic, and voidic lines show a parity with Piagetian *contents*. The specific meditative techniques—the Vipassana, Zen, TM lines, etc—show a parity with Piagetian *tasks*. So in both neo-Piagetian psychology and neo-Piagetian transpersonal psychology, lines exist which correspond to both contents and tasks.[9] Collectively the lines which develop through Patanjali's stages, or facsimiles, including both contents and the tasks, can be referred to as *Patanjalian lines*. In figure 1, the independent unfolding of lines through Piaget's and Patanjali's stages is shown. It is thus possible to identify a form of neo-Piagetian transpersonal psychology from the stages and lines identified, based around development asynchrony. Each of the lines of meditative development identified passes through Patanjali's stages at independent rates, in an echo of the progression of the tasks and contents of neo-Piagetian psychology through Piaget's stages at independent rates.

The Asynchronous Development of Meditative Lines Across Cultures

Asynchronous development of meditative lines determines differences in contemplative experiences across cultures. Research shows that different cognitive skills, including different contents and different tasks, develop at

independent rates which are dependent on the level and quality of training involved (Case, 1992; Demetriou, Spanoudis, & Mouyi, 2010; Ferrari & Vuletic, 2010; Fischer, Kenny, & Pipp, 1990; Pascual-Leone, Johnson, & Agostino, 2010). Meditation works no differently: the variable literatures of the world's meditative traditions result from the differential emphasis in the training of different meditative skills. For cultural reasons, phenomenologies of imagistic light, for example, are sometimes preferred to phenomenologies of inner darkness (Happold, 1970) and the development of preferred lines is encouraged in students. Cultural polarisations of mysticism therefore exist between different traditions, in line with inherited cultural and religious frameworks. I suggest—using further principles derived from neo-Piagetian research which are discussed more fully shortly—that it is exposure to domain specific stimulus, practice with it, and quality of teaching that determines the level of development of one line in relation to another.

More specifically, the neo-Piagetian author Case (1992) identifies (a) a rich knowledge base, (b) a large exposure to the task, (c) a high level of motivation towards the task, as factors promoting the rapid development of a particular cognitive skill through Piaget's stages. These circumstances are also echoed by Fischer, Kenny, and Pipp (1990). Individual tutoring is also known to rapidly advance an individual line (Feldman, 1994), and this one-to-one relationship is often present in the relationship between the pupil and teacher of a meditative technique (even when a group is taught, individual time with a teacher, exemplified in the Zen mondo or personalised meeting session, is often available). An individual who practises imagistic meditation, like Sikh surat shabda Yoga, will be exposed to this particular content, will practise with it, and will receive specific instructions from a spiritual teacher (traditionally called a guru or master), and so the development of this line will exceed that of other meditative lines. A Buddhist will not emphasise the purposeful cultivation of these states and instead will focus on the nirvanic void, and for her this line will exceed the development of others. The different characters of the world's mystical literature—the voidic line which is the focus of Sunyavada Buddhism, the imagistic line which is the focus of surat shabda Yoga meditation, the tactile line which is the focus of Kundalini Yoga and the chakra system—are explained by the different cultural emphases on techniques which develop different lines.

The differential development of the lines will only occur when techniques are used that actively seek to develop one content ahead of another. Many popular contemporary meditative techniques—including Zen and certain Vipassana meditative techniques—do not do this. Vipassana or "insight meditation" for example, involves an observation of whatever experience is arising and cultivates no line specifically, in contrast to visualisation meditations that focus on the cultivation of the imagistic line, or kundalini chakra exercises which focus on the tactile line. (Indeed, Vipassana and Zen can be considered to develop a general *witnessing line*, which is not a content as such, but the ability to observe any and all contents through RM.) Again, things might come into starker relief when tasks are considered: as an anecdotal observation, a decade of practice at focussing on the breath in Zen practice will not automatically

mean a person can perform Tantric visualisation to the same level, or even close. When effort *is* made to cultivate specific lines, however, those lines develop independently.

The Question of Stages in Meditative Development

One criticism of stage-like approaches is that meditation students often report feeling that, although they progress, they do not experience stages to their progression (Rothberg, 1996). A neo-Piagetian perspective can explain this. Evidence reported in Fischer, Kenny, and Pipp (1990) has shown that performance on cognitive tasks will rapidly accelerate towards a new peak under *ideal learning conditions* in which one-to-one tuition is present. But under *suboptimal learning conditions* a gradual progression rather than a series of more discrete jumps to new ceilings followed by plateaus is to be expected. It is likely that in ideal learning conditions like those found in ashrams the stages of meditative development will be more noticeable than in modern Western "lay" conditions. New ceilings are reached in neo-Piagetian development quickly in ideal learning conditions, while a continuous rather than discrete developmental pattern applies in other circumstances. In the learning conditions of the modern West, without daily one to one tuition, and with meditation just one activity competing for time and focus with other activities (like work and family responsibilities), learning conditions are sub-optimal, and a gradual rather than discrete development might be the norm. In monasteries or ashrams, in ideal learning conditions, with intense effort and with expert tuition on hand on a daily basis, development is more likely to evidence discrete stages, and this is why a number of traditions marked out the path in terms of stages.

The classical texts often describe more stages than the three stages focussed on in this article. This discrepancy is explained by considering insights from neo-Piagetian theory. Both different Piagetian tasks and different meditation techniques involve different sub-stages. Even the four stages usually used in the text books (sensorimotor, preoperational, concrete operational, and formal operational) were not always, or even usually, the standard presentation that Piaget used. Often Piaget (e.g., 1941) spoke of six stages—reflexive activity, perception and habit, sensorimotor intelligence, intuitive intelligence, concrete operations, and formal operations. The number of stages or sub-stages identified is a function of degree of detail specified. Piaget, Fischer, and Case all break down the solving of specific tasks like balance beam exercises into specific steps. Piaget (1941) identified three particular areas in which decalage might occur: content, grouping, and task: the nature of sub-stages encountered in the solving of different cognitive tasks is often *compelled* to differ from one task to another as the tasks themselves are different. If different meditation techniques are considered different tasks, then the differences in the number of stages of practice that are identified in different meditation techniques strongly parallels the Piagetian development of specific tasks.[10] The Buddhist term jhana, for example, is the Pali equivalent of the Sanskrit term dhyana, and the Buddhists often identify around eight different levels of jhana to meditation

practice (Buddhaghosa & Nanamoli, 1975). The existence of often very different numbers of stages of meditation in the literature is not a problem for neo-Piagetian views of meditation, and finds corollaries in the original Piagetian frameworks. Much as four Piagetian stages are useful in basic accounts but the actual number of stages and sub-stages varies between tasks, so three broad stages of meditation (dharana, dhyana, and samadhi) are helpful as a general orientating framework, but the actual number of stages and sub-stages varies from one meditation technique to another.

A weaker, though still neo-Piagetian, hypothesis would expect a gradual rather than discrete movement through stages, and only a little differentiation in the development of lines. In practice, especially in the modern West, this might be what is most likely to occur; and this description of development might feel more intuitively correct for contemporary Western meditators. This weakened hypothesis might also be the best description of how conventional Piagetian lines develop in practice as well: without specialist training to accelerate a particular capacity, lines of development are usually closely related (Case, 1992), and without specialist training to rapidly accelerate performance to a new developmental ceiling, growth of lines is usually gradual rather than discrete (Fischer, Kenny, & Pipp, 1990). But that both distinct lines and discrete stages of meditation are very prominent in the traditional literature, shows that in non-Western developmental environments a stronger form of neo-Piagetian transpersonal dynamics holds. In fact, development of transpersonal lines show a *greater* potential for disparate development than personal psychological lines: all children come into contact with number, quantity, volume, and weight, etc., and so it is practically impossible to completely isolate an individual line for specific training. But introverted transpersonal contents and tasks are often only encountered through specific training and therefore show a greater potential for isolation.

Some authors question the relevance of stages to the meditative literature, claiming that traditional stage-based compendiums are not intended to be used as practical guides; see for example Sharf (1995). A neo-Piagetian transpersonal psychology would embrace the stage-based meditative literature as expressive of beliefs about how meditative development actually happens in ideal learning environments. That meditative traditions wrote about stages because—in the ideal learning conditions of monasteries at least—they believed that stages were real and important aspects of practical development might be a more natural explanation of why stage-based descriptions are common. But further debate and research is needed to clarify this issue.

SOME FURTHER RELEVANT ISSUES FOR TRANSPERSONAL THEORY

The attainment of meditative states is not just a goal in itself for the spiritual seeker; meditation stimulates changes that resonate around multiple aspects of the individual. In addition to this matter, the important issue is still outstanding: the relationship between the two main aspects of neo-Piagetian theory that are relevant to transpersonal discussion (asynchrony in meditative

lines, and post-formal competencies). The suggestion, explored in more detail below, is that meditation is one activity that can stimulate postformal understandings of the world. Characteristics of postformal development—for example an autonomous moral conviction in the worth of all beings and a willingness to aid them (Kohlberg & Power, 1981), an awareness of multiple realities and the transcendence of Kantian notions of space and time (Commons, 2003), and wisdom in relation to the inherent paradoxes and contradictions in interpersonal relationships (Sinnott, 1998)—are drawn out in the first place, or subsequently enhanced, by the practice of meditation. As well, additional themes are discussed relating to the interface of Piagetian theory—especially genetic epistemology—and transpersonal psychology.

The Role of Meditation in Development

Meditation can aid the development of many aspects of the individual: neo-Piagetian *transpersonal* psychology can contribute to more conventional developmental issues. A discussion of presentational aspects of life can help explain why. The term *presentational* might not be familiar to readers: presentational development is the term used by Langer (1942), Edelson (1982), Haskell (1984), Hunt (1995), and Shanon (2008) among others, and refers to the so called "felt meanings" or aspects of cognition which involve knowing through non-representational means. Representational cognition involves mathematical symbolism, logical symbolism, or written and spoken language: presentational cognition involves expression which is felt through poetic imagery, music, dance, and stage-performance, or inner mental imagery in the manner of dream, day dream, free-drawing, and similar activities, as well as in interpersonal relationships. Presentational cognition also captures the synesthetic unity of the individual, involving the unification of thought and feeling which grows as the individual matures leading to a potential strengthening of conviction in causes and beliefs across the life time (see Erikson, 1982; Pascual-Leone, 1990). Presentational meanings might involve or be expressed through representational thought and language, but also involve a significant affective component, in a way which pure representational thought, like solving a mathematics problem, does not. Presentational cognition acquires the lessons the arts can teach, rather than the sciences. Meaning is derived through absorption in the medium of presentation itself—in the act of mesmerisation or enchantment derived from an appreciation of poetical, artistic, or dramatic performance. The felt meaning of art or literature—and the strength of conviction derived from the truths about the world it depicts—changes over the course of the life in a way which mathematical proofs do not.

A criticism of Piaget's work is that it lacked a treatment of the affective aspects of development. Although this criticism might not be entirely true (see Piaget, 1981), it is fair to say that Piaget's work did not treat these aspects of development as comprehensively as it treated representational cognition. A transpersonal approach can therefore inform and complete Piaget's project. A principle of Piaget's (1975/1985) model is that the representational lines of development equilibrate to the physical world (the slightly unusual word

"equilibrate" was Piaget's choice in term). Representational cognition can be tested against the physical world. Likewise, facets of "presentational development," including affective aspects of development, appear to equilibrate to the interior world of meditative experience.

The practice of meditation creates a point of stability from which calm waves radiate outwards and stabilise experience outside of meditation. This transformation of consciousness, sometimes called sahaja is, according to Vivekananda (1901), the aim of Raja Yoga, and is typical of other meditative techniques. It is echoed, for example, in the permanent changes in consciousness which have been observed in TM practitioners in the contemporary world (Alexander et al., 1990). Temporary experiences of altered states of consciousness eventually produce permanent changes in the equilibrium of the self. The openness and spaciousness of meditation moulds the development of an increasingly open and spacious personal presence. Presentational development equilibrates to the openness of meditative experience, much as representational development equilibrates to the physical world. The openness of meditative absorption—the enjoyment and inherent freedom of the experience—provides a cross-modal metaphor to which the personality in non-meditative states is drawn (c.f. Hunt, 1995). It is for this reason, perhaps, that meditation has been associated with the maturation of the personality. If Piagetian and neo-Piagetian psychology fail to address aspects of affective development adequately, then a neo-Piagetian transpersonal psychology can begin to address this. A neo-Piagetian transpersonal psychology would more comprehensively address affective as well as transpersonal aspects of development, in comparison to conventional neo-Piagetian psychology, as it would draw on meditation induced changes in the personality.

Much as the physical world provides an external point of equilibration for representational cognition, the presentational lines equilibrate to the intense felt-meanings attained in introverted mystical experiences. Synesthetic unity in meditative samadhi discloses a felt-certainty in spiritual realities which have inspired the great mystico-philosophical treatises. Affective and moral lines equilibrate to this intense, synesthetic, centre of experience; awareness of "God" as inner stillness traditionally translates into the outward motion of charity; the openness of introverted absorption becomes the guiding symbol to which the affective aspects of the personality equilibrate. Internal structures of concern, self-transcending care, and presence more adequately reflect the openness of introverted meditative experience much as logical structures based around object permanence more adequately reflect the nature of the external world than earlier logical stages. The choice to engage with meditation is a later life continuation of the processes of "reality testing" (Piaget, 1947/1950a) through which the child's construction of reality unfolds. This intense form of reality testing creates a personality increasingly in line with classical spiritual values, moulded into the image of the open expanse of absorption, which increasingly becomes a part of the individual's reality.

Motionless absorption achieved in meditation is expressed outwardly as care, concern, and presence. In this way, to use Piaget's own phrase, the emerging

introverted structure is stabilised because it is "reversible," finding expression both internally and externally. An increasing awareness of unity solidifies the immanence and continuity of consciousness: much as the constancy of the external world is crystallised in object permanence, "subject permanence"—an awareness of the inseparability of consciousness and its objects—crystallises the unity of consciousness and world. A constant sense of consciousness of the subject—a constant presence—cycling through both waking and sleeping experience results, as described in the *Mandukya Upanishad*. Such a continuous mode of present awareness is observed in empirical studies of advanced meditators (Alexander et al., 1990).

Meditation can aid the growth of lines of development which involve the synthesis of thought and feeling like moral development and ego development. This observation has been demonstrated among disadvantaged populations, including prison populations.[11] The early stages of moral development appear to be constrained by logico-mathematical cognition: Kohlberg's (1986) higher stages presume a formal operational notion of the abstract equivalency of all humans (and the equal rights subsequently deserved). When moral development, however, does not achieve the ceiling made available by the development of logico-mathematical cognition, meditation can unfreeze development and raise these lines to an average level, as described by Orme-Johnson (2000).

Meditation, in summary, issues in changes which extend to many aspects of the individual. The result can be the emergence of a transpersonal equilibrium, best demonstrated in Alexander et al.'s (1990) studies. Meditation can contribute to the development of the individual towards the experience of spiritual value which Piaget (1930) described. Neo-Piagetian dynamics can help describe the development of meditative lines within the individual. There is a mutually complementary relationship between Piaget's work, its neo-Piagetian variants, and transpersonal psychology.

The Relation between the Contemplative and Postformal Aspects

A possible relation between postformal neo-Piagetian transpersonal psychologies and the asynchronous neo-Piagetian transpersonal psychology described earlier is this: contemplative absorption is a synesthesia of postformal representational cognition. (A synesthesia is the experience of one sensory or cognitive modality in terms of another.) That is, representational cognition and contemplative cognition express knowledge of the same reality but through different mediums. Meditative insights translate back into the openness and wisdom that is one hallmark of postformal thought. Indeed, in psychedelic experiences in particular, individuals claim that they are *experiencing* the realities that are described in postformal theories of physics: they are experiencing the relativity of space-time, and other postformal, post-Newtonian constructions (Masters & Houston, 1966/2000). Intense meditative experiences are a synesthesia of postformal representational cognition, and produce similar insights. Contemplative development and the development of representational cognition can be considered parallel developmental facets;

in their highest stages they both open out into recognisably similar, and recognisably spiritual, forms.

Phylogenetically, there has been a large decalage in the rate at which representational and contemplative forms of cognition have unfolded. The products of postformal representational cognition, including relativity theory, Kaluza-Klein theories, quantum mechanics, and dynamical systems theory have only blossomed since the late nineteenth century onwards, while a high level of development in contemplative lines has been achieved much earlier, probably from Paleolithic times. For this reason, there are many similarities between the universe as described by twenty-first century physicists and the universe described by shamans and other mystics (Laughlin & Throop, 2003). Of course, this is not to say that indigenous characterisations of the cosmos are the same as those in modern physics; they are not the same but they do share recognisable similarities (for example, both Kaluza-Klein theories and shamans describe travel through multiple dimensions) because both of these world views involve postformal understandings of how the world operates. In summary, postformal representational cognition can be considered a synesthesia of contemplative absorption which produces similar insights. Moreover, contemplative absorption can help trigger and cement postformal cognitions. The relationship between contemplative and postformal neo-Piagetian transpersonal psychology is complementary.

Genetic Epistemology and Transpersonal Psychology

Genetic epistemology was concerned with the genesis of knowledge through the process of reality construction—that is, with the coalescence of the individual and the environment across ontogeny to produce knowledge of the world. Neo-Piagetian approaches are more concerned with Piaget's psychological theory (with describing the acquisition of skills over time) than with the dynamics of epistemology itself. But an increasing knowledge of reality is a shared aim of neo-Piagetian psychology, genetic epistemology, and transpersonal psychology. Much investigation has taken place into the way that knowledge of physical reality is created (e.g., Piaget., 1937/1970), and it is a small step to extend those findings into transpersonal territory.

There is much in common between Piaget's work in genetic epistemology and the participatory approach to transpersonal development, a situation which both reinforces the theoretical validity of participatory theory, and enriches genetic epistemology. In genetic epistemology perception and thought organise the world, but increasingly accurate knowledge of the world changes the logical structures which govern thought and perception, which in turn changes the appearance of the world (Piaget, 1972). Thus, reality is *constructed,* as Piaget (1950b) has said, or *cocreated,* as Ferrer (2002) has said, over the course of ontogeny and phylogeny. Reality is always open to change with further evolution and development. In a synthesis of genetic epistemology and transpersonal themes the reality that appears material in earlier equilibriums comes to appear spiritual in later equilibriums. The self-transcendence of which Maslow (1971) spoke, or the sixth stage of faith in Fowler's (1981) framework,

which have recognisable transpersonal components, typically unfold in the second half of life, as the nature of reality becomes more obviously spiritual.[12] Material reality flows into spiritual reality as ontogeny progresses: there is only ever spiritual reality, but reality is usually only recognised as spiritual later in life.

Recent work in transpersonal psychology and religious studies (Ferrer, 2002; Rawlinson, 1997; Schlamm, 2001) has perhaps shown fairly conclusively that there is no universal series of phenomenological states encountered in spiritual development. The progression from gross to subtle to causal for example, only applies to the Vedantic tradition, or more likely only to certain texts in that tradition. But at the same time some shared aspect—something objective or universal in spiritual development—is possible. Different spiritual paths converge on increasing knowledge of spiritual reality. Spiritual traditions reflect the universal religious value, which Piaget described in his early work (Piaget, 1918), in different ways. The expression of religious value is an expression of the same reality, and so it has an objective component, but religious value is expressed in different ways by different traditions. Universal values (tolerance, understanding, respect) often emerge across religions and across humanistic forms of investigation because they *converge* on the same reality. The similarities between the results of scientific and contemplative investigation described above suggest that these two general domains also converge as they progress towards infinity. Knowledge sources mutually confirm one another as they progress, because they produce knowledge of the *same* reality.[13]

There is no "given" spiritual reality, for reality is created through the mutual coalescence of subject and object. There is no end point to the spiritual path of any tradition, for there is no final form of reality at which cognition can arrive. Knowledge of the nature of (spiritual) reality can always increase from an initial starting point of ignorance, and that increase is unending. Like the progression of iterations of irrational numbers, different spiritual paths never reach a final endpoint and converge on increasing knowledge relative to an initial starting point of ignorance. Because spiritual paths progress towards knowledge of a shared reality, the paths tend to converge the further from the initial starting point of ignorance they progress. One simple example of this might be the increasing religious tolerance which has motivated discussion in the twentieth and twenty-first century, relative to previous historical ages. This is not to suggest that there is a universal shared ultimate: the spiritual ultimates of different traditions are different, but they still have some recognisable similarities; a general drive towards love, or compassion, or respect, for fellow beings is present in the ideologies of many, and perhaps all religions. Realisation in Hindus, Muslims, and in indigenous/shamanic cultures has *something* in common, though the expression of that commonality is focussed through culturally specific lenses. This, at least, should be the finding which is expected, if knowledge of other areas of epistemology is applied to the growth of spiritual cultures and individuals.

For Katz (1978), there was no unity of religions as all was cultural construction. Certain versions of the perennial philosophy (Schuon, 1953; Wilber, 2000) have been accused of being overly monolithic and of ignoring

cultural variety. Piaget provided a large amount of evidence that there are both objective and culturally specific aspects to conventional human development. If the same processes are involved in spiritual development then the convergence on a shared spiritual reality, nonetheless expressed in pluralistic ways, is to be expected and a vision of spiritual and religious development which preserves both unity and diversity appears justifiable through analogy with well confirmed processes of psychogenesis.

For Piaget (1950b) evolution led upwards from the lowest biological units of cells, and progressed towards the highest expressions of value, in which human conviction reaches heights which often converge on mysticism. Piaget's system was reminiscent of Koestler's (1978) later theory of holons, though more widely encompassing: from as early as 1916, Piaget (1916, 1918) was identifying the meaning of life with the drive of evolution. Comparisons with Bergson and Hegel are apt, and Piaget acknowledged Bergson in particular as a profound source of influence. In contrast to the view of Teilhard de Chardin (1965), there was no omega point to evolution, only the continued upward drive into "new possibilities," which were ever-surpassing (Piaget, 1950b). There was no pole towards which evolution grew, only new emergent levels issuing from new structures of organisation. In this respect Piaget precursed by many decades the "participatory turn" in transpersonal studies (Ferrer, 2002) and "integral post-metaphysics" (Wilber, 2006), in which spiritual ultimates are not considered to be fixed but instead are constantly open to revision through further evolution. Piaget's model of development was open towards the future: there was no upper limit to the quality of value the individual could experience. His theory was, in this respect, angled towards the possibility of a transpersonal future for both the individual and the species in a way reminiscent of Maslow. Spiritual value was not an aspect of human development, but the future condition towards which all aspects of human development were driving.

These higher evolutionary possibilities eventually lead to the postformal world views that are beginning to emerge in Western culture through the development of representational cognition, and which existed long ago in indigenous cultures due to the development of contemplative cognition. Meditation, an asynchronous activity involving neo-Piagetian dynamics, can stimulate the growth of postformal representational cognition by synesthetic transfer between modalities, and so fuel the increasing convergence of the subject on reality, which can be considered the goal of the spiritual quest. It is in this respect that asynchronous/contemplative and post-formal aspects of neo-Piagetian theory relate. Meditation and other contemplative techniques are one tool among others which can help the individual converge on the knowledge of spiritual reality which Piaget sought to describe in his genetic epistemology, but was unable to investigate comprehensively.

CONCLUSION

Piaget set out on what would now be called a transpersonal project, as detailed in Piaget (1918). The result of this was his "immanentism" theory (Piaget,

1930)—an exploration of the development of thought towards ultimate values that transcend both the individual and the limits of individual thought, which had both Hegelian and Gödelian overtones. Arguably Piaget's transpersonally motivated work failed to completely fulfil the aims of his project adequately. Although Piaget maintained an interest in spirituality as indicated in his informal recorded conversations (Bringuier, 1980), he generally toned down his academic interest in spiritual themes as his career progressed, perhaps because he was unable to adequately substantiate them with the same precision as his other work. The search for spiritual value that Piaget (1918) began can be completed through dialogue with the contemporary transpersonal project in the future. The addition of the asynchronous development of contemplative lines to postformal aspects of neo-Piagetian transpersonal psychology is a step in this direction, and the fresh contribution of the article.

NOTES

[1] Representational cognition concerns understanding that is completely derived from the meaning of the symbols involved, like mathematical or logical notation. This is contrasted with presentational cognition in which the meaning is conveyed through absorption in the medium of expression itself, for example in the appreciation of music, or of interpersonal emotions.

[2] But the three stages identified also apply to mystical prayer (Washburn, 2000) and Lewis-Williams and Pearce (2005) have argued that a three stage formula describes shamanic trance.

[3] For more recent examples of neo-Piagetian psychologies please see Demetriou, Spanoudis, and Mouyi (2010), Ferrari and Vuletic (2010), Pascual-Leone, Johnson and Agostino (2010).

[4] Again, it is actually doubtful that Piaget did not incorporate postformal themes into his work. For example, as early as 1950, Piaget (1950a) was writing about "axiomatic operations," which transcended formal operations in the same way that formal operations transcended concrete operations. It is inaccurate to say that Piaget ignored postformal thought, much as it is inaccurate to say that Piaget lacked an awareness of asynchrony. But still, it is generally taken in psychology that postformal thought was a later addition to the Piaget corpus, provided by subsequent researchers.

[5] I use the term "Patanjalian" as a generic term for meditative stages, much as "Piagetian" is used as a generic term for the stage-like development of representational cognition, including instances when different numbers of stages to Piaget's four stages, are used.

[6] In later work Wilber (e.g., 2000, 2006) followed Gardner and used the notion of lines, but the different lines emerged in an invariant order; it was still the case that causal led on from subtle and subtle led on from gross.

[7] Piaget used the term "subject" as an abbreviation of his phrase "epistemic subject" which was an abstraction of individual subjects, rather like species constitute abstractions of biological individuals. In general, I use the term individual rather than subject, to avoid confusion.

[8] The practice of language mysticism might also be added as another line; Lancaster (2000) described a form of language mysticism based on Hebrew practices. This is a very detailed exposition of the mysticism of a linguistic or auditory line (related to the processing of sound) which could be added to the tactile, imagistic and voidic lines. Evidence for olfactory and gustatory lines is rare, but existent, especially in Tantra (Gyatso, 1991).

[9] Contents and tasks were the two main sources of "decalage," that is, of uneven or asynchronous development across lines. Procedural decalages were also identified (e.g., Piaget & Inhelder, 1956) in which asynchronies in development between different versions of the same task were studied (for example, different exercises which could be performed on the balance beam). The analogue of procedural decalages in meditative development might be different versions of the same meditative technique, like the different ways in which Vipassana can be performed.

[10] The practice of the task involved in Vedic meditation, which conforms to Patanjali's three stages, is different from the tasks of the complex meditations of Yoga Tantra in which many stages are identified. But arguably both result in recognisably similar states of subject-object union: the samadhi state of Vedic meditation produces the same union of subject and object as the higher stages of the process of melding bliss and emptiness in "clear light"

as described in Yoga Tantra. Both Vedic and Tibetan traditions are correspondingly grounded in non-dual philosophical systems (see Radhakrishnan, 1927; Bapat, 1956).

[11] See Kela (2003), Orme-Johnson & Moore (2003), Samuelson, Carmody, Kabat-Zinn, & Bratt (2007), Perelman, Miller, Clements, Rodriguez, Allen, & Cavanaugh (2012). For counterviews to the claims that meditation results in moral development see Barnard & Kripal (2002).

[12] Spiritual development can happen at any point in life, but evidence suggests it is more likely to happen later in life (see Dale, 2011).

[13] This idea is reminiscent of Piaget's (1950b) circle of sciences in which the main sciences of mathematics, physics, biology and psychology mutually confirmed each other as they advanced, but Piaget did not develop his circle of sciences to include contemplation.

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