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From causal thinking to wisdom and spirituality

Some perspectives on a growing research field in adult (cognitive) development

This article concentrates on the latest international trends in the field of the psychological development of adults, and especially on the development of cognition. This field of research has become very fragmented as researchers have continued to create new models, one after another, in order to describe their own lines of thought and also as they have sought empirical evidence to back these up. This has resulted in a rather ambiguous picture of the phenomenon itself. The present article attempts to identify the historical roots of study in the field, and introduces descriptive factors that could determine the conceptual gist of the phenomenon. In this context we will discuss, mainly, research going back to Jean Piaget (1896–1980) and William Perry Jr (1913–98), and subsequent neo-Piagetian advances: epistemological development, the integration of emotion and cognition, as well as psychological research in the fields of wisdom and spirituality. The *principal claims* made here are that these neo-Piagetian models are actually based on various different psychological traditions, and the term ‘neo-Piagetian’ can no longer be seen to give an appropriate representation of the complexity of the phenomenon. The theories of Erikson, Jung and Maslow, plus Eastern and Western wisdom traditions are assimilated into Piagetian notions. The study of wisdom has overlaps with adult cognitive developmental models. Spirituality as the higher advancement in adulthood may be understood in various ways; for example, either as a representational or non-representational phenomenon. ‘Sceptical’ spirituality and atheistic and agnostic wisdoms should also be taken into account in future research. There is also an unsolved question concerning the relationship between chronological age and the mentioned thinking forms, which may be merely understood to be a life-long developmental issue.

A fast growing research area

It is an almost trivial fact of developmental psychology that both genetic inheritance and social upbringing play a significant role in a person’s psychological growth. These two fundamental principles are seen as basic elements for individuals’ development throughout their lives. Our living environment is complex and globally interdependent, an ever influential factor in our actions. New developmental challenges related to adulthood, such as work, couple relationships, starting a family, bringing up children, living as a single person, the influence of the social media and plenty of other factors also have an impact on adult development (Hoare 2011). According to Urie Bronfenbrenner’s (1979) terms and ecological system-theoretical language, every individual’s life is nested in the midst of a number of micro-, meso-, exo-, and macrosystems.

Although genetic and educational factors, together with sociocultural ones, are essential aspects of adult development, they are also involved in an interplay with the selective and directive role of the person’s individuality.¹ According to the Western

1 The view that self and ego actually exist is a philosophical-metaphysical assumption and culturally-bound phenomenon as such. The assumption of a self has been found to be problematic in some narrative approaches, for instance McAdams and McLean (2013). The definition of self-identity is considered to be part of narration as appropriate in each situation, that is, context-specific identity construction. We can ask whether this kind of approach presupposes the permanent existence and continuity of self. We may consider the issue of cultural binding when, for instance, a religion does not presuppose such an existence or continuity of self or ego (e.g. Buddhism)



The astronomical clock (detail) at the Lund Cathedral, Sweden.

psychological tradition, the development of the self (or ego) is a lifelong process in which the person creates and defines his or her own limits and choices (Kegan 1982, 1994). At the same time and at many levels, cultural conceptions also play major role in individual development (Bronfenbrenner 1979).

It is only in the past thirty or forty years or so that developmental psychologists have become aware of the need to enquire into how adult thinking differs qualitatively from adolescent thinking. The pessimistic view according to which adulthood ceases to include any radical change or innovations has given way to more optimistic notions. For example, one fashionable trend in the discussion is the assertion that cognitive development in adulthood and old age is not about a gradual deterioration of capabilities, but rather about the generation of some new modes

(Gallagher 2011). This article nevertheless takes into account (but does not take the assumption to be a given) the premise that a personal self can be hypothesized to exist, irrespective of its presupposed mode of existence (physical, spatial-temporal, conceptual, experiential or hypothetical).

of thinking (Hoare 2011). Within academic psychology the concept of thinking is generally defined in terms of phenomena pertaining to the processing of information. Cognitive psychology examines, for example, sensory perception, memory, learning, and thinking; that is, all the ways in which knowledge is acquired (Verhaeghen and Hertzog 2014). Developmental psychological research on cognition is interested in how qualitative changes in this process of knowledge-acquisition are facilitated in the course of a human life. One strong feature in the development of adult thinking is that an adult's wide-ranging basis of experience makes it possible for them to form an integrated view drawing independently on different frames of reference. On the one hand, the emphasis is thus on the individual, but also on the complex interactions of relationships involved in adult life (Hoare 2011).

Research building on and diverging from Jean Piaget's theory: causal thinking as the highest reach of development

Piaget's theory of cognitive development (Inhelder and Piaget 1958, Piaget and Inhelder 1969, Muller *et al.* 2015) has bound scholars in recent decades when it comes to research on thinking skills, and it still has huge impact on scientific discussions within the neo-Piagetian perspective (Hoare 2011, Labouvie-Vief 2015). It may have been seen as a kind of universal theory to describe the development of thinking 'in general'; Piaget himself has called it a theory of genetic epistemology, that is to say, how knowledge develops in ontogenesis.² Its most widely known aspect, *developmental stage theory* is, however, focused on one specific cognitive domain only; namely on causal-logical thinking. Piaget was interested in how natural scientific thinking develops ontogenetically as a process involving interactions between the subject and physical reality. The famous theory of developmental stages ranging from sensorimotor operations up to

2 Genetic epistemology is a theoretical construct with many aspects and dimensions (Vuyk 1981). Piaget has studied moral development, the development of figurative (visual) thinking, memory, and cognizance of action. The most celebrated and well known aspect of this general epistemological theory is the developmental stage theory of causal thinking mentioned here, which will be briefly described in this article (see Muller *et al.* 2015).

formal operations concerns specifically the study of cause-and-effect reasoning regarding physical reality.³

To claim, however, that this is a universal theory of all cognitive development is questionable; there is in fact considerable confusion in the field. In devising a theory of development for causal thinking Piaget has used methodology applicable to the natural sciences (physics, chemistry), a fact which in itself indicates the points of departure of his studies and also has implications for the interpretation of the results. Such tasks are so-called 'well-defined problems' (Schraw *et al.* 2005), as the problem structure includes all the premises which must be taken into account in order to make logical conclusions. There are thus not any intermediate variables in the testing situation, which may enhance confusion in the reasoning process. (See e.g. Inhelder and Piaget 1958; see also von Wright 2004, for problems relating to this assumption.)

In its essence, Piaget's theory of genetic epistemology is complex. Regarding the aspect we are interested in – the development of causal thinking – the psychological description includes both developmental-structural and dynamic factors. Any action is schematized, structured and is nested sooner or later within some logical structure, as during its development, an infant's outer sensorimotor actions are slowly internalized through symbolic function, and manifest as schemes and later as mental logical structures. Factors of change refer to variables that bring about development such that we can talk about transformations in the form of the emergence of new qualities in reasoning, which are always hierarchical in nature (Piaget and Inhelder 1969, Kallio 1998, cf. Kallio and Marchand 2012). Structure and change always appear in complex interdependence in the course of development, and this relationship is continuously constructing anew – it is essentially a dialectical relationship (Vuyk 1981, Kallio and Marchand 2012).

3 The developmental stages of causal reasoning are: 1) the sensorimotor stage (chronologically from birth to about 2 years old; 2) the preoperational stage (2 to 7 years of age); 3) the concrete operational stage (7–12 years of age), and the highest stage; 4), the formal operational stage (from 12 years onwards). Each of these major stages include minor sub-stages, and transitional periods in between. (Piaget and Inhelder 1969, Inhelder and Piaget 1958 and 1951; see also Muller *et al.* 2015)

According to Piaget, development advances through stages of wider control over the physical environment. It is not, however, the only dimension of action. Human action always takes place within some limits: we can only act under certain constraints. What keeps development going is that we are forced to change and modify our actions. Pressure for change is thus like a compelling driving force that promotes development. We have to change our operational patterns and schemes when we find ourselves in a situation that is beyond our understanding in terms of existing knowledge. This, seemingly, is a matter of two qualitatively different phenomena, one of which is relatively stable while the other one is a destabilizing element. Piaget describes these elements by means of the concepts of accommodation and assimilation. Development is possible only when an existing thing gives way and at the same time the phenomenon is reshaped. Every structure of activity, as of thinking, needs to be seen as a specific



Jean Piaget at the University of Michigan campus in Ann Arbor, 1967 or 1968.

Nbmachado, Wikimedia Commons

form of balance, which is more or less constant in its own limited area, but deemed to lose this constancy when the limits of this area are reached. (Piaget and Inhelder 1969)

Grasping reality is therefore a process involving operational expansion and limitation, with a continuous striving for a higher state of organization. However, Piaget was pessimistic with respect to the development of causal thinking: according to him, there is no further development after formal thinking, though he modified his opinion later as he formulated that probably the highest thinking forms are possible only in one's areas of expertise (Vuyk 1981). Even though formal thinking can become increasingly complex and conscious, this does not justify a hypothesis about a further developmental stage, *if* the original criteria concerning stages according to Piaget are used (Inhelder and Piaget 1958; Piaget and Inhelder 1969; Kallio 2011, 1995; Kallio and Helkama 1991). New, neo-Piagetian models have been created to refine the complexity of actions or skills, explicating more or less dependency on the Piagetian theory (e.g. Commons *et al.* 2014; e.g. Mascolo and Fischer 2015).

In summary, Piaget's theory has a teleological assumption that the development of causal thinking has a final endpoint, and that this line of development does not allow any exceptions, different developmental routes, or other than deterministic changes. A premise of this theory is, therefore, that there is *a telos* towards which causal thinking inevitably proceeds, although it is assumed at the same time that it is basically a *constructive, dialectical* process. Unilinear development is assumed, and there are no exceptional multilinear routes. Empirical findings seem to show that formal thinking is not a universal form of cognition, either in youth or in adulthood, even amongst groups of academically trained Western (i.e. European and Anglo-American) subjects (Kallio 1998, Seppälä 2013, Krettenauer 2011).

Postformal thinking: relativistic-dialectical thought

Piaget's theory of cognition (as part of genetic epistemology, 'how knowledge-formation develops') still enjoys strong support (Muller *et al.* 2015). For example, Philip Adey and Michael Shayer, along with their research teams, have designed both psychometrically precise indicators for the modes of formal thinking and a development training programme

(Adey *et al.* 1989, Kallio 1998; used lately also by Seppälä 2013). Adherence to Piaget's developmental theory brings up some problems, however, if it is understood as and supposed to be an all-inclusive theoretical description of cognition. There is plenty of criticism of the theory – an example of this in recent decades has been the introduction of models for so-called 'postformal' thinking in adulthood.

Criticism regarding formal thinking has focused on the limited applicability of causal thinking to other domains and fields: the tasks used are non-social and impersonal. For example, we might ask in what terms causal thinking would be the most suitable form for resolving socio-emotional issues. How could we solve, merely by means of causal thinking, a problem that calls for creativity, for instance, or an issue of the affections? Or is it the case that causal thinking can be applied only in situations where the problem is well-defined and exact, and where the reasoning can lead only to a certain set of conclusions drawn from the given premises? Problems with foggy premises, such as emotional or metaphysical issues, do not automatically get solved by means of logical reasoning – these kinds of problems are described as 'ill-defined' by scholars (Schraw *et al.* 2005).

After Piaget, William Perry Jr (1999) was the next most important scholar to define new topics to be studied in the field of adult cognition. He was the first to study thinking processes from another viewpoint than that of Piaget: he was interested in how *conceptions* were constructed, not logical reasoning processes. He found that conceptions of knowledge changed qualitatively in a group of university students as they progressed in their studies. At the beginning of studies students believed that there exist either truths or non-truths, a position which has been since called a dualist (or absolutist) stance. After some years of academic studies, belief in a given, absolute truth collapses and there is transition to relativistic thinking; that is to say that there always exist many viewpoints on the same phenomenon, and nobody knows the exact truth. In the later years of study these two positions are integrated in the sense that epistemic relativism is accepted, but one is able to evaluate different viewpoints and make one's own judgement – this is called the 'committed relativism phase' (see also Kramer 1983). Perry's impact on the research of adult cognitive development, with the aforementioned absolutism-relativism-commitment classification of thinking forms, has been mas-

sive (Barzilai and Eshet-Alkalai 2015, Seppälä 2013). It has inaugurated a totally new era in research.

Perry's research and the problems and weaknesses in Piagetian theory outlined above have brought up many new models, and a new adult developmental stage, known as 'postformal thinking', has been assumed to exist.⁴ Besides the already mentioned Mascolo and Fischer (2015) and Commons (Commons *et al.* 2014) models, the most important of these new models currently are those put forward by Michael Basseches (1984), Gisela Labouvie-Vief (2015), Robert Kegan (1982, 1994) and Sinnott (2011, 2013 – see also Young 2011). Each of them has essentially its own definition and constructions, but scholars claim they basically share a similar three-phase assumption of development following Perry's model (absolutism, relativism and dialectical thinking) (Kramer 1983, Marchand 2001). One example of how to define adult thinking according to the phases or levels mentioned here is described as follows. Sinnott has summarized the core idea like this:

Postformal thought is a type of complex logical thinking that develops in adulthood when we interact with other people whose views about some aspect of reality are different from ours. It allows a person to deal with everyday logical contradictions by letting that person understand that "reality" and the "meaning" of events are *co-created*. Both objectivity and a necessary subjectivity are useful in our epistemological understanding of the world. Postformal thought lets adults bridge two contradictory, "scientifically" logical positions and reach an adaptive synthesis of them through a higher-order logic. The adult then goes on to live the larger reality. So the larger reality eventually *becomes* "true" and noncontradictory with the passage of time. Postformal thought includes a *necessary subjectivity*, which means that the knower understands that "truth" is partially a creation of the one who makes those choices. Postformal operations presume somewhat necessarily subjective selection among logically contradictory formal operational systems, each of which

4 I leave aside puzzling questions such as how to assume higher postformal thinking, if most do not even manage lower stage, formal operations, see e.g. Kallio 1995, 1998; Kallio and Helkama 1991.

is internally consistent and absolute. So it allows us to *organize multiple mutually contradictory systems of (scientific) logical thought*. These are the two main principles of this complex logic. ...The operations include metatheory shift, problem definition, process/product shift, parameter setting, multiple solutions, pragmatism, multiple causality, multiple methods, and paradox. (Sinnott 2011: 256, italics in the original)

Briefly, 'postformal' thinking is thus basically a combination of two research traditions – Piaget's and Perry's. It is surely a neo-Piagetian advancement. However, the term has met with critical opposition. The term has been suggested to be changed (Kramer 1983, Marchand 2001, Kohlberg 1990, Kallio and Liitos 2009) as there are both theoretical and empirical problems associated with it. I have suggested (Kallio 2011) that the common feature across the models claimed to be 'postformal' can be interpreted and replaced with term *integrative thinking* (for usage of this term see also Cavanaugh and Blanchard-Fields 2015: 203; Robinson 2012: 60; Paletz *et al.* 2015: 12).

Next we will take a closer look at one model of adult thinking in which the integration process is seen as being essential, concerning a merger of reason and emotions. The designer of this model, Gisela Labouvie-Vief (1994) lately has summarized it as lasting across the lifespan, based on empirical evidence from various sources (2015).

Mythos, Logos and their integration

In her work Labouvie-Vief (1994) begins with the statement that in the whole tradition of Western thinking a pervasive theme has been a dualistic view concerning the nature of human thinking. Sigmund Freud's (1962) psychodynamic theory speaks of humans' primary and secondary thinking, in other words, that humanity incorporates both irrational and rational thinking. Freud describes the logico-rational mode as a secondary process of the psyche, a form of thinking that develops later than primary processing. This derives from the classical period and especially from the thought of the philosopher Plato (or interpretations of Plato). A key concept here is the *Logos*. The *Logos* is something that can be expressed in rational terms, and on the basis of which thinking can lead to objective knowledge and

truth. In its ideal form, thinking would be flawless once any subjective or other obfuscatory elements are removed. Labouvie-Vief (*ibid.*) refers to this type of thinking with such terms as rational, analytical, conscious, abstract, and formal-logical thinking. Plato's philosophy of ideas in its purest form represents this dominance of reason and concepts in relation to the material, physiological and physical domains, as well as mythic-irrational aspects. Logos thinking is also the kind of thinking to which so-called average, normal development should lead in adulthood (a kind of *telos*; an ideal final point of development). In some sense, Piaget's idea of the teleological and inevitable course of logical thinking towards formal, hypothetic-deductive, causal thinking as a pure, most highly developed form is a good example of the highlighted significance of Logos thinking.

On the other hand, in the Western tradition there is another strong line of thinking, which Labouvie-

Vief calls *Mythos* thinking. This type of thinking is concrete, as opposed to Logos thinking. Practical everyday thinking is a good example of this. Mythical thinking also includes the imagination and, generally speaking, involves all the personal and subjective aspects that cannot be included in Logos thinking. This area encompasses the perceived privacy of the inner self, which cannot be verified by objective methods. It is also represented by emotions, sensations, myths, fairy tales, and dreams. In Freud's (1962) terms, this is thinking that depends on primary processes, involving the earliest modes of thinking, which are predominant at the early stages of development.

Labouvie-Vief argues that in Western culture these two modes of thinking have had and still have a paradoxical and contradictory interrelationship. According to her, this interrelationship can be understood in two ways: 1) as vertical and hierarchical,

Wikimedia Commons



Philosopher in meditation, Rembrandt, 1632. Louvre Museum.

or 2) as dialectic and lateral. The supporters of the vertical-hierarchical hypothesis are inclined to see Logos thinking as the most mature form of thinking, while Mythos thinking is regarded as a less developed form which is subordinate to it. Thus Logos in a way should and does control Mythos: Logos thinking is more advanced and normatively at a higher level than Mythos thinking. Piaget follows this rationalist trend, which is strongly present in the so-called Western academic tradition. According to this view, Logos, reason, represents the highest developmental achievements. Piaget is not the only one who has interpreted the relationship between these modes of thinking in this way, as Freud also argues that secondary processes are a more advanced element of mental activity than primary processes. Forms of mythical thinking (the imagination and mental imagery in general) are also part of Piaget's theory, in a way that they represent preoperational thinking, which emerges between 2 and 7 years of chronological age.

In rationalist terms, mature thinking can be described conceptually: it searches for universal ideas and principles, regularities. The concept of truth is then universal, something that can be reached by means of certain methods or logical reasoning. The concept of intellectuality has often been related to this kind of rational thinking which seeks generalizations. The intellectual is assumed to be higher in the hierarchy than the felt, sensed or sensory/bodily character.

This trend also leads to underestimating the significance of the inner, subjective and experiential reality. In growing up, child-like features diminish and give way to adulthood. Hence, this often means that people try to deny and suppress the role of the imagination and emotions as they grow up. If an adult displays childlike personal features and childlike thinking, the phenomenon is called regression, which is considered undesirable except for special cases.

What is essential, therefore, is the interrelationship between these two types of thinking. Are they opposites? Is there any mutual hierarchy? What kind of developmental continuum is there, if any? Whereas in traditional, rationalist thinking Logos is the most prestigious and advanced characteristic, the main point of Labouvie-Vief's model seems to be bridging the gap between Mythos and Logos. She objects to placing reason as the highest developmental achievement. The vertical model with its notion of the



A clock in the Old Town of Gdansk, Poland.

hierarchical relationship between the two forms of thinking is thus challenged by the notion that these types of thinking are complementary and enrich each other, and are also continuously interacting.

In this lateral model the modes of thinking are engaged in a mutual dialogue. While one mode brings diversity, the other brings precision in thinking. In this view, it is assumed that neither way of thinking can be reduced to the other. They represent different domains that are not derivable from each other, but which together, and only so, create a mature mind (Labouvie-Vief 2015). Mythos thinking cannot thus be described as a less developed form of Logos thinking (cf. Jung and von Franz 1968). Here Labouvie-Vief presents a hypothesis that clearly deviates from Piaget's developmental theory and she distances herself from fundamentally rationalist lines of thought.⁵

Labouvie-Vief finds that the notion of individuation, which is included in Jung's theory encompasses the same ideas that she herself is presenting. According to Jung, individuation becomes possible in middle age and requires adult life maturation and experience. Individuation involves integration of the

5 But it is worth noting that Piaget himself has already proposed (1976), that in the future cognitive developmental theory and psychodynamic theory will be integrated. The claim that Piaget has not taken emotional development into account is thus not wholly convincing.

conscious and subconscious mind, light and shadow, masculine and feminine. Within this change process, denied unconscious elements carrying denied emotional content become integrated with the conscious, rational mind. Thus, this transformation in the person's inner development in middle age leads to an integration of opposing sides and aspects into a whole. (Jung and von Frantz 1968)

Wisdom in adult development

The neo-Piagetian integration of emotional and intellectual development has created space for other, open theoretical hypotheses of adult development. Two other major traditions are the study of wisdom and secular spirituality in adulthood. This may sound surprising, as Piaget's theory is so fundamentally linked to the non-metaphysical domain: natural scientific, causal thinking.⁶ Wisdom, originally as a philosophical and religious concept, has been studied in many fields. It was originally Erik H. Erikson who proposed a lifelong, ego developmental model linked to psychosocial development with normative-based phases; eight in total. During the last of these phases one is able to understand life's limits, and in a positive outcome approach, an acceptance of one's life, ego integrity and *wisdom* are the results. (Erikson and Erikson 1998)

The first scholars to study wisdom as a part of personality and cognition structures were Robert Sternberg (e.g. Sternberg and Jordan 2005), Paul Baltes and Ursula Staudinger (2000). If one digs into the roots of the study of wisdom one can clearly see how this concept is also linked to the neo-Piagetian adult developmental models mentioned above. Baltes and Staudinger were the first to claim that postformal adult thinking is a *cognitive sub-component of wisdom*, that is to say, that wisdom is a higher-level concept, postformal thinking a lower-level one – a subcomponent (Baltes and Staudinger 2000, 124). They claim that this component

6 Piaget has had deeply emotional attitude against philosophy, and claimed that philosophy gives wisdom, but only natural sciences gives the truth (Piaget 2013). However, there are scholars who claim that Piaget has had at the same time (or sometime during his long-time career) ambiguous, even positive, attitude towards religion and spirituality (Dale 2011, 2013).



Allegory of Wisdom and Strength, Paolo Veronese, circa 1580. Frick Collection.

has several features which are actually also part of relativistic-dialectical postformal thinking. These features are, for example, *contextualism*, *relativism of values*, *recognition and management of uncertainty*, *complex problem solving*, *tolerance of ambiguity*, and *dialectical thinking* (*ibid.*, see also Liitos *et al.* 2012; cf. Jan Sinnott's definition earlier in this text; Banicki 2009). Relativistic-dialectical integrative thinking seem to be the features which are included both in adult cognitive development and wisdom constructs.

Besides these scholars of wisdom, Monika Ardelt has created a three-dimensional model (Ardelt and Ferrari 2014). Wisdom is defined and operationalized as an integration of cognitive, reflective, and compassionate personality characteristics. The *cognitive* wisdom dimension relates to the search for the true and deep meaning of phenomena and events. To do this, wise persons are able *to look at events from*

a multitude of perspectives; they are not merely stuck on their subjective preferences, and they are able to ponder the questions deeply (the *reflective* dimension of wisdom). Finally, deeper understanding and less self-centeredness are supposed to lead to compassion for others (the *compassionate* wisdom dimension) (Ardelt *et al.* 2013). As with Baltes and others' definitions, the cognitive component of wisdom is very close to the definitions of mature adult thinking forms already described (Walsh 2015). It was first assumed that it is a very rare phenomenon and found only in later age. Research has been intensive in the field, initially with the older population (Wink and Staudinger 2015), but nowadays it has spread to various age groups such as young adults (DeMichelis *et al.* 2015) and middle-aged persons (e.g. Punzi 2015, Webster and Deng 2015). Results do not indicate simply that wisdom is just a phenomenon connected to chronologically more advanced ages. Indeed it seems merely to be the case that in each age group wisdom expresses itself in various ways.⁷

Spirituality in adult development

According to Polly Young-Eisenhardt and Melvin Miller (2000), wisdom and spirituality seem to share similar features and they are often studied together – other candidates close to these constructs are religiosity and also moral-ethical development. I separate the concepts of religiosity and spirituality. The development of *faith*, which I define as religiosity, has been the topic of several studies since the important stage model put forward by James Fowler (1981), which also has its background in Jean Piaget's and Lawrence Kohlberg's (1981) moral theories. However, some scholars see faith and spiritual development as being closely connected: there is just a 'thin line' between them (Rockenbach *et al.* 2015). Whether it is seen as a part of the wisdom construct or in another way, the concept of spirituality has been claimed to be at the highest reach of adult development. Oliver Robinson, in his book on adult development, defines spirituality as 'a personal experience defined by active engagement with particular questions, experiences and

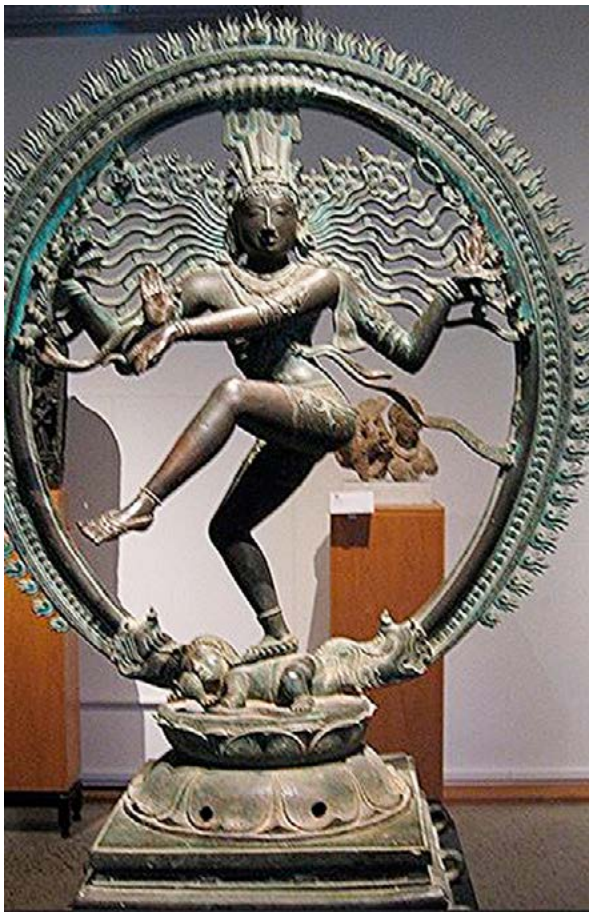
7 An indirect indication of this is that integrative (relativistic-dialectical) thinking has been studied and found in various age groups and if wisdom is its component, it must also be found in the same age-groups, as their definitions are overlapping.



Sofiya Premudrost' Boshiya, anonymous Russian icon painter, 17th century.

practices, which together comprise a dynamic search for meaning, purpose, inner knowledge, deep connection, transcendence and "ineffable" truths *that cannot be encoded in words and numbers*' (Robinson 2012: 230, my italics). Spirituality in this sense is thus a phenomenon which cannot be explained to others in ordinary language. However, it is a common statement that there is more than one definition of spirituality (Boyatzis 2012, Watts 2012, Miller 2012).

As already mentioned here, spirituality and the study of wisdom have cross-connections. One commonly claimed component of wisdom found in a recent overview of its definitions is that of a *secular, non-institutional spirituality* (see e.g. Bangen *et al.* 2013). The close link between wisdom and spirituality is a customary assumption in the research (Ardelt *et al.* 2013, Miller-Perrin and Mancuso 2015, Lee *et al.* 2015, Walsh and Reams 2015, Walach 2015, DeMichelis *et al.* 2015). Wisdom as 'self-transcendence' is also often included in the discussion (Le and Levenson 2005, Hartwig and Morgan 2013, Benovenli *et al.* 2011); the self is linked, integrated or embedded into something greater (Boyatzis 2012).



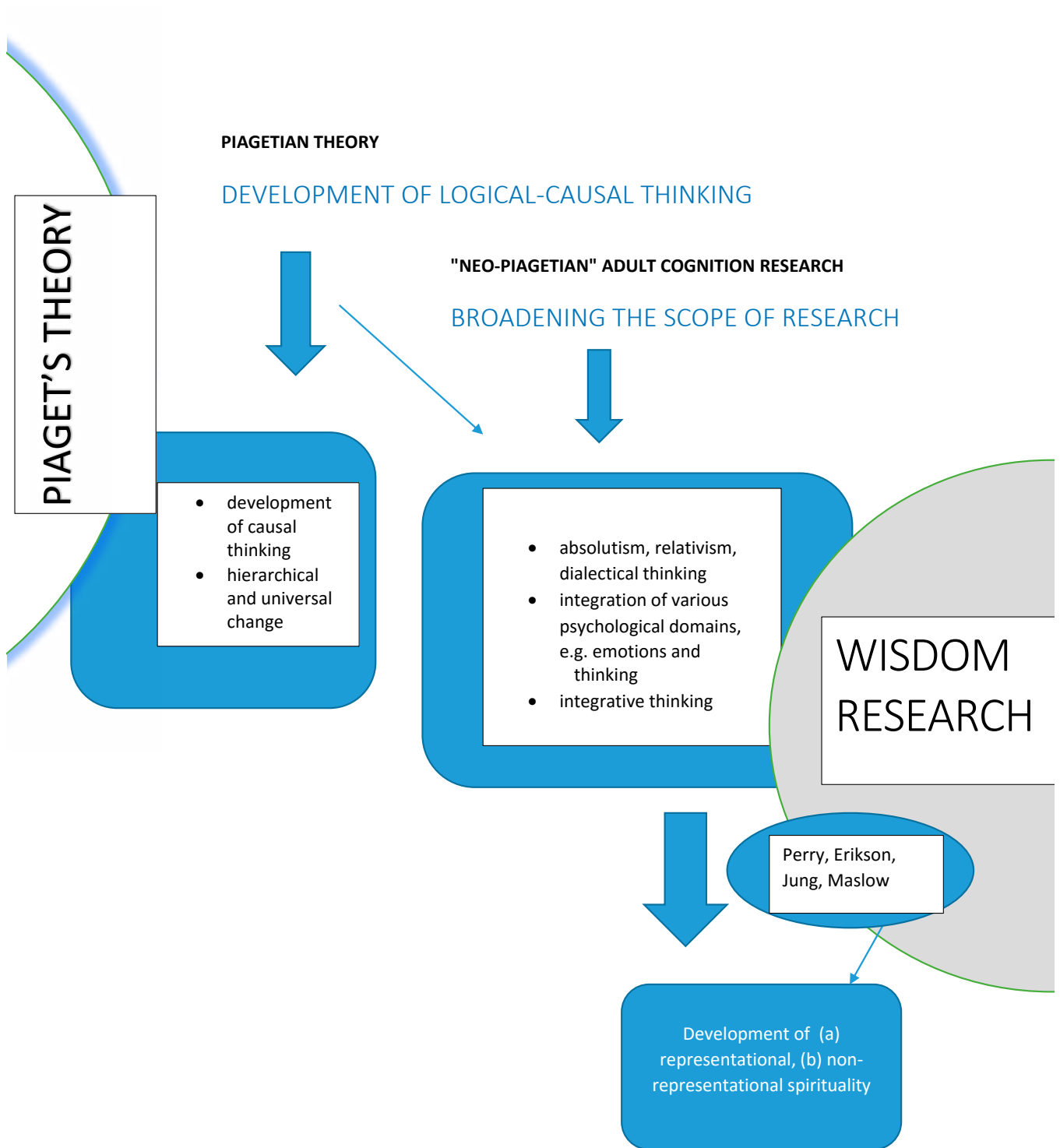
Dancing Shiva, Östasiatiska Museet, Stockholm, Sweden.

Richard Trowbridge claims that transcendent wisdom is intimately connected to spirituality: 'In traditional teachings, transcendent wisdom (*sophia*) is primarily self-knowledge, meaning ... the existential insight that the human is placed in an ordered universe that has a goal, and that the purpose of human existence is to become aware of this design and conform oneself to it...' (Trowbridge 2013: 3). Self-transcendence is also linked to passing up one's egoistical interests for the common good of humankind, and also in moral-ethical development taking into consideration the wider implications of decisions; to relinquishing one's own subjective interests for the common good (Kohlberg 1981, Hoare 2011).

At least two traditions of thought can be differentiated in the study of adult spirituality. The difference pertains to the assumption that the highest reaches of development are *representational and rational* (Ardelt *et al.* 2013), rather than *non-representational* (or *transpersonal*) in their nature (e.g. Alexander and Langer 1990, Pfaffenberg *et al.* 2013; see also Wilber 1993, 2000, 2006).

Representational spirituality refers to all cognitive actions which are communicable amongst other social groups and actors by means of signs and symbols. The alternative is to refer to the long-standing European cultural tradition in which the term 'Spirit' (*Geist*), refers to a human being's facility for a second-order consciousness, 'metacognitive' capabilities, such as mathematics, logic and reasoning – these are purely abstract, conceptual processes and entities (Perttula and Kallio 1996). It must be understood that this kind of spirituality is metaphysical and philosophical, and in most cases, assumed to be a hierarchically high level of developmental advancement (e.g. in Hegel's philosophy). Another way of understanding spirituality is to refer to a 'realized self': to become whole and integrated, self-actualized, as the ultimate goal of development (see Maslow 1968 or Jung and Franz 1968 and cf. Page 2011). A further alternative form of study in the field is just to focus on existential questions regarding the meaning and purpose of life (e.g. Robinson's, 2012, aforementioned citation).

In the opposing view, of non-representational spirituality, words, conceptualizations, semiotic and symbolic formations are understood to have limits and boundaries, which must be overcome and surpassed. Charles Alexander (Alexander and Langer 1990) was one of the first who claimed (based on the philosophy of Transcendental Meditation, TM) that the ultimate goal of spirituality is the fusion of the subject-object dichotomy into a sacred Oneness. Another pioneer in this field, Oliver Kress (1993), has also mentioned that this kind of process of spiritual initiation (linked with Zen Buddhism and Taoism) emerges after the formal thinking stage of Piaget's theory. It is also worth mentioning Lars Tornstam (2005), who has used the term *gerotranscendence* to refer to a similar phenomenon. The core of gerotranscendence is the idea that materialism and connectedness to rational thinking decrease in old age. He claims that the 'cosmic and transcendent' spheres thus become important. In his early writings on the topic, Tornstam first assumed that it is during old age that this kind of spiritual growth is potential. The latest empirical findings, however, show (as is the case also with wisdom) that this kind of metaphysical thinking is not dependent on chronological old age, but is already developing in late youth and young adulthood (Tornstam 2011, Boyatzis 2012). In sum, in non-representational spirituality, a non-dual state of awareness or consciousness is assumed.



Piagetian and neo-Piagetian research traditions of development of thinking in adulthood.

Briefly, the difference between representational and non-representational states of spirituality is a question of ego and self (Page 2011). In the first case (representational), the ego/self is a source of agency, in the latter case (non-representational) it is an object to be relinquished or transcended.

Conclusions

The study of adult cognitive development is currently a diverse field. It can be evaluated from various viewpoints. Piaget and Perry are two sources to which almost all psychological theorization in the field can be traced, but important links can be found also to the theories of Erikson and Jung, as well as Maslow. To summarize: chronologically the first theorizations were based on Piaget's theory of causal thinking, according to which there is supposedly no further development after formal thinking. Perry's model of epistemic growth opened the way to neo-Piagetian models, of which the essential feature is an understanding of adult cognitive development as complex integrative action occurring between many viewpoints. A common theme amongst these models is the integration of separate psychological domains (Kallio 2011).

It is hard to define solely as 'neo-Piagetian' the many trends which have subsequently been described in adult development research. Some of the models definitely ascribe alternative conceptualizations to Piaget, with descriptions of hierarchically advanced levels of complexity of thinking (Commons *et al.* 2014), or with hierarchies of skills (Mascolo and Fischer 2015). These two models may be most well adapted for a description of cognitive development into adulthood. On the other hand, there are many other 'neo-Piagetian' models which can hardly be based on Piagetian theory only; they are integrated models which also include influences from other theories (Perry, Erikson, Jung, Maslow) and also from Eastern and Western wisdom traditions. It is clear that the scholarly study of adulthood has here come closer to the field of positive, humanistic, and transpersonal psychologies.

Secondly, an important question for further study in the field is the claim that there is a connection between advanced developmental stages and chronological age. Research has indicated that in the case of causal thinking, the assumptions concerning chronologically developing causal thinking have not been

verified. High-level causal thinking is not a universal developmental advancement. Also, in the fields of wisdom and spirituality, the phenomena seem possibly to manifest, in different forms, across the lifespan, not only in adulthood or old age.

Thirdly, a discussion must be started as to which kind of developmental trajectories exist in non-spiritual psychological advancements – such as progress and changes relating to atheism and agnosticism. Young-Eisenhardt and Miller (2000) use the term 'sceptical spiritualism' to refer to forms of spirituality they have found – indicating that adult spirituality may thus be even more complex than has been here described.

Ludwig Wittgenstein posited a philosophical critique of the quantity of empirical results in relation to weak conceptual theorizations in psychology: 'For in psychology there are experimental methods and conceptual confusion' (Wittgenstein 1953, II: xiv). I have suggested (Kallio 2011, forthcoming 2016) that, in the field of adult thinking, instead of devising a wide range of innovative models we should focus on the congruent features brought up by these frames of reference to describe the psychological development of adults. Research has obviously widened beyond the study of adult cognition as a separate field. It is question of more than cognitive development in adulthood as different psychological systems are evaluated together. I thus suggest that it would be appropriate simply to call this research field generally the 'study of adult development', rather than continue to limit it solely to the neo-Piagetian tradition. Demand for finding the core component in various models in itself is not a contradiction of the richness of plurality and differentiation which naturally emerges in scientific discussion and debate. There is thus a need for both approaches – differentiation and integration – of the scientific formulations on the field of adult development. ■

In memory of Professor Juha Perttula (1964–2015), University of Lapland, Finland, who dedicated his life to study of assumptions of human being and phenomenology.



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