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The Cognitive Spectrum of Transformative Learning

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The Cognitive Spectrum of Transformative Learning

Abstract

Although various types of transformative learning have been theorized, a detailed integrative theory is yet to emerge. I argue that unduly intellectualist assumptions regarding cognition have hampered current understandings and have obscured transformative learning's cognitive and metacognitive essence. Firstly, Mezirow's implied restriction of his Socratic/Habermasian model to discursive rationality unnecessarily excludes transformative learning accomplished through enactive, non-discursive modes of cognition, metacognition, and rationality. Likewise, a narrow conception of cognition prevents theorists of depth transformation from recognising the essential *cognitive* roles at depth of metaphors deriving from embodied experience and their *rational* elaboration at depth through metaphoric implication. In the light of current theory, I reconsider J.H. Newman's nineteenth-century insights regarding notional-to-real transformation, showing how a deeper and more comprehensive understanding of cognition and metacognition reveals transformative learning's essential cognitive and metacognitive dynamic, in confirmation of Kegan's "subject-object" model and Mezirow's stress on the importance of metacognition.

What is the Essence of Transformative Learning? A Summary of the Argument

Transformative learning takes a variety of forms, and studies are available of several of these: most notably Mezirow's ten-stage Socratic/Habermasian model (Mezirow, 1991, 2000, 2003); but also liberatory transformative learning (exemplified by Freire's 1972 "conscientization" and by feminist consciousness-raising); depth transformation of the psyche (Dirkx, 1998, 2000, 2001, 2006; Boyd, 1989; Tennant, 2012; Illeris, 2014a, 2014b); and developmental transformative learning (for example, Kegan's 1994, 2000, "subject-object" model). The social and interpersonal dynamics of transformative processes have also been investigated, as too have the neurology and neuropsychology of transformative learning. (For reviews of the entire field, see Imel, 1998; Taylor, 1998, 2007 & 2008; Cranton & Taylor, 2012; Taylor & Snyder, 2012; Taylor & Cranton, 2013.) Despite differences among forms of transformative learning, all involve transformation of what Mezirow (1991, 2000, 2003) terms "meaning perspective": learning that is not merely "informational" (Kegan, 2000: 48) but challenges prior ways of thinking, feeling or acting, and reveals itself in thought, commitment and action. What is less clear, however, is whether there is more than outward similarity among them: that is, whether they share a deep and definitive *essence*.

I argue that the essence of all transformative learning is *cognitive transformation* involving metacognitive reconstrual and commitment that reshapes the learner's cognitive-motivational perspective. However, to see this we need to abandon the unrealistically narrow, intellectualist conceptions of cognition often presupposed in the current literature. To this end, I critically examine assumptions underlying central theoretical accounts of transformative learning, to develop a deeper, more comprehensive and integrative understanding of cognitive transformation.

Argument Summary

Impetus for current transformative learning theory came initially from two directions. The first was from explicitly political critique and consciousness-raising in response to

entrenched forms of oppression—such as in feminist critique of patriarchy and in grassroots movements associated with Paolo Freire's (1972) liberatory *Pedagogy of the Oppressed*. The second was from Jack Mezirow's empirical and theoretical studies of transformative learning (particularly, Mezirow, 1978 & 1991). I begin by examining Mezirow's view of transformative learning, endorsing its broad outline but arguing that Mezirow unduly restricts the scope of his definition and model of transformative learning by bringing to them unrealistically narrow conceptions of intelligence, rationality, thought and reflective judgment. However, by considering transformative learning in the creative arts, we may gain a more comprehensive understanding of those aspects of cognition, and thereby see the applicability of Mezirow's model to a considerably wider range of cases, including particularly those in which transformation is accomplished through embodied activity involving non-discursive modes of cognition, metacognition, and rationality. I then turn to transformative learning of a type that outwardly might seem least reliant on cognition—depth transformation of the psyche (Dirkx, 1998, 2000, 2001, 2006; Boyd, 1989; Imel, 1998; Tennant, 2012; Illeris, 2014a, 2014b)—showing how it essentially involves a refiguring (at depth) of *metaphoric* cognition deriving from our embodied experience in the world, and thereby a refiguring of subjectivity.

This broadened and deepened view of cognition is important for understanding a type of transformative learning overlooked by the current theoretical literature and overdue for rediscovery and re-examination: transformation of understanding from bloodless "notions" to "real assent" (active, "fleshed out" commitment), as identified nearly 150 years ago in J.H. Newman's *An Essay in Aid of a Grammar of Assent* (Newman, 1979, pp. 76-86). While notional-to-real transformation is close kin to liberatory (consciousness-raising) transformation, the relevance of Newman's insights for *all* transformative learning is shown by reference to neurological studies of a peculiar syndrome of cognitive dissociation in which understanding appears intact, but remains merely notional and without personal significance or motivational import. Further consideration of Newman's insights illuminates the essential metacognitive roles in transformative learning of feeling and sociality, as manifested in the authentic commitment needed to overcome the "problematic meaning-perspective" whose recognition initiates and motivates the transformative process.

Finally, I consider Kegan's (1994, 2000) "subject-object" model, in which transformation occurs when an underlying cognitive formation to which one previously had been merely "subject" or in thrall—that is, a meaning-perspective which previously had functioned habitually and invisibly, *beneath* consciousness—becomes available as an "object" of active conscious reflection to be considered, evaluated and overcome. I argue that Kegan's model is applicable to all forms of transformative learning, and characterizes the entire spectrum of the transformative cognitive and metacognitive dynamic which makes them possible. Thus, *metacognitively active transformation of cognition* of this "subject-object" type is, in Kegan's (2000) phrase, "the form that transforms"—the essence of transformative learning.

Mezirow on Perspective Transformation and Critical Self-Awareness

Over several decades Jack Mezirow has developed his cognitivist approach to transformative learning (for detailed analysis of the development of Mezirow's approach, see Kitchenham, 2008), identifying it as having three key features. The first is that transformation is of the learner's "perspective" or "meaning perspective":

Perspective transformation is the process of becoming critically aware of how and why our assumptions have come to constrain the way we perceive, understand, and feel about our world; changing these structures of habitual expectation to make possible a more inclusive, discriminating, and integrating perspective; and, finally, making choices or otherwise acting upon these new understandings (Mezirow, 1991, p. 167).

More recently, Mezirow has characterized perspective-transformation as the overcoming of "problematic frames of reference":

Transformative learning is learning that transforms problematic frames of reference—sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets)—to make them more inclusive, discriminating, open, reflective, and emotionally able to change (Mezirow, 2003, p. 58).

A frame of reference is a "meaning perspective" ... It involves cognitive, affective, and conative dimensions. It selectively shapes and delimits perception, cognition, feelings, and disposition by predisposing our intentions, expectations, and purposes. (Mezirow, 2000, p. 16)

Secondly, Mezirow holds that transformation is accomplished essentially through exercise of critical rationality:

Transformative learning is coextensive with rationality in instrumental and communicative learning...

Transformative learning involves critical reflection of assumptions that may occur either in group interaction or independently. Testing the validity of a transformed frame of reference in communicative learning requires critical-dialectical discourse. Habermas's concept of emancipatory learning is here interpreted as the process of transformative learning that often takes the form of task-oriented problem solving in instrumental learning and critical self-reflection in communicative learning (Mezirow, 2003, p. 61).

Mezirow emphasizes the *metacognitive* dimension of this rational critique:

Critical reflection requires understanding the nature of reasons and their methods, logic, and justification. Transformative learning is metacognitive reasoning involving these same understandings but, in addition, emphasizes insight into the source, structure, and history of a frame of reference, as well as judging its relevance, appropriateness, and consequences (Mezirow, 2003, p. 61).

Thirdly, Mezirow identifies a multi-stage process through which transformative learning proceeds. While he allows that there may be variations from the following ten-stage model, he thinks it captures what typically happens in transformative learning (Mezirow, 1991, p. 50; 2000, p. 22):

1. Experiencing a disorienting dilemma
2. Self-examination with feelings of fear, anger, guilt or shame
3. Critical assessment of assumptions
4. Recognizing that one's discontent and the process of transformation are shared
5. Exploration of options for new roles, relationships and actions
6. Planning a course of action

7. Acquiring knowledge and skills for implementing one's plans
8. Provisionally trying out new roles
9. Building competence and self-confidence in new roles and relationships
10. Reintegrating one's life on the basis of the new perspective

A Critical Reinterpretation of Mezirow's Theoretical Model

Among the extensive literature prompted by Mezirow's model of transformative learning, a considerable portion has been critical but appreciative. I count my own response in this category, and certainly do not share the 'mutinous' doubts of commentators such as Newman (2012, 2014). However, along with Collard and Law (1989), Taylor (1993, 1994), Clark and Wilson (1991), and some of the more recent writing on critical reflection, I do see Mezirow's Socratic assumptions as being unduly restrictive. For it is not the case that motivation and critique in the transformative process must be *self*-regarding (stage 2 of Mezirow's model); nor is it necessary that critical rationality be discursive. Here I examine those assumptions, and suggest how a broadened understanding of cognition, metacognition and rationality makes Mezirow's model applicable to a wider range of cases.

Motivation in Transformative Learning: Is Critical *Self*-Reflection Necessary?

While Mezirow in his earlier studies of transformative learning made critical *self*-awareness a requirement for transformation of meaning perspective, his later focus is on metacognitive reasoning which "emphasizes insight into the source, structure, and history of a frame of reference, as well as judging its relevance, appropriateness, and consequences" (Mezirow, 2003, p. 61). This may prompt us to ask whether transformation may occur even if involves little *self*-awareness, but is instead wholly or mostly *problem-focused*—that is, in the absence of stage 2 of his model. In such a case, even though one is not engaged in "self-examination with feelings of fear, anger, guilt or shame" (Mezirow, 1991, p. 50), focus on the problematic situation might be just as emotionally intense, disorienting, critically exploratory, and metacognitively critical of previous ways of thinking, and just as strongly motivating, as would a Stage 2 challenge to one's self-conception and self-evaluation. While Mezirow does acknowledge that there may be variations from his ten-stage model (for a survey of critical studies see Taylor, 1998, pp. 39-43; see also King, 1998), here we need to bear in mind that involvement in things 'bigger than oneself' can be life-changing even when those things are not 'about' one's life or self, or their transformation. For example, one's motivating distress might be for others, rather than for oneself: self-regarding fear, anger, guilt or shame may be absent or irrelevant. Nor are life-changing challenges always distressful: some are exhilarating, even though disorienting and problematic. In these cases, one is engaged in critical metacognitive activity—critical "thinking about thinking"—but focused on the problematic of the task, rather than on oneself (as problematically so-tasked). Indeed, I am certain that transformative learning sometimes does occur (and has occurred in my own case, and in that of colleagues I've consulted) in the absence of Socratic *self*-critique.

Extending Mezirow's Account to Non-Discursive Transformative Learning

Mezirow's essentially discursive type of transformative learning is very important, but his Socratic/Habermasian view of rationality prevents him from recognizing that some

transformative learning is entirely non-verbal, yet nonetheless may fully conform to his ten-stage model. In these cases, as I will show, the place of discursive reasoning is taken by enactively embodied cognition inherent in transformative perceptual, imaginal, affective or performative activity, and rationality takes non-discursive form. While Mezirow does allow that factors other than discursively self-aware reflection may be among the *preconditions* and consequences of transformative learning, he appears to instrumentalize the non-discursive and the not-wholly-cognitive as merely facilitative, as when, for example, he says that for critical-dialectical discourse empathy is "relevant" and "qualities of emotional intelligence ... are obvious assets", and that "conditions fostering social justice are essential" because "[h]ungry, desperate, homeless, sick, destitute, and intimidated people obviously cannot participate fully and freely in discourse" (Mezirow, 2003, p. 60). What he says is of course true, but sometimes the non-discursive and the not-wholly-cognitive are intrinsic to transformation of meaning perspective, and are not mere enabling conditions. This is because learning intrinsically may *be* perceptual, emotional, imaginal, performative, aesthetic, moral, or social, and not merely be (intellectually) *about* these aspects of experience and activity. And in any of these modes, learning may be transformative, whether or not it involves discursive critical reasoning. Mezirow does recognize that problematic frames of reference—problematic "meaning perspectives"—need not be declarative or verbal (Mezirow, 2000, pp. 5-6); but fails to recognize that when they are not, there is no good reason, either theoretical or phenomenological, for supposing that their dynamics *must* be discursively mediated or their problematic character be verbally conceived.

The problematic for a dancer, for example, might be spatio-kinetic, perceptual, aesthetic, performative; it might be felt rather than thought, or it might be thought *in* experience *as* experience, perceptually, enactively, rather than as reflection or reasoning. It might be dealt with through non-discursive modes of intelligence (see e.g. Gardner, 1983) in creative exploratory performance. Nonetheless (and conforming to Mezirow's ten-stage model) the dancer's situation might be first experienced as an uncomfortably disorienting dilemma; there might be relevant self-examination and critique, but enactively in creative experimentation, rather than ratiocinatively; there could be exploration of options, planning, development of new skills, provisional trying out of new approaches, practice and development of competence, and integration of a transformed perspective into the dancer's frame of values and understandings. This might be as personally significant, and as transforming of the dancer's meaning perspective, as any more Socratic, discursively mediated transformation would have been. It might even have involved considerable self-reflective critique, but critique exercised through non-discursive modes of intelligence.

Mezirow seems equivocal about such cases. On the one hand, clearly he recognizes that transformative learning for a dancer might involve such non-verbal (or "presentational") forms of construal (Mezirow, 2000, pp. 5-6). So, could the whole process of transformative learning sometimes be non-verbal? Mezirow does not make his view on this clear when he says, for example, that "[w]e use language here only when we experience a problem in understanding or want to share the experience" (Mezirow, 2000, p. 5). The dancer of my example does experience a problem, *inter alia* a problem in understanding, but perhaps says nothing (even sub-vocally). Are there clues in Mezirow's view of the distinction between instrumental and communicative transformative learning, and of the criteria of rationality appropriate to each?

[R]ationality refers to assessing reasons supporting one's options as objectively as possible and choosing the most effective means available to achieve one's objectives. In instrumental learning, rationality is judged by whether we are able to achieve technical success in meeting our objectives (for example, use methods that result in

improved performance). In communicative learning, rationality is judged by our success in coming to an understanding concerning the issues at hand. (Mezirow, 2000, p. 10)

Mezirow will view the dancer's learning as "instrumental"—a sort of problem-solving. The following passage bears this out:

We establish the validity of our problematic beliefs in instrumental learning by empirically testing to determine the truth of an assertion. In communicative learning, we determine the justification of a problematic belief or understanding through *rational discourse* to arrive at a tentative best judgement. (Mezirow, 2000, pp. 9-10)

The dancer does empirically test all manner of aesthetic and spatio-kinetic options, judging which are more or less likely to solve the (unarticulated) problem, and thereby is undergoing instrumental learning, but does not engage in rational *verbal* discourse (Mezirow assumes discourse must be verbal) so is not engaged in communicative learning as Mezirow understands it. But neither is the dancer "empirically testing to determine the truth of an assertion", as no such assertion is made or even thought, so the case does not really fit Mezirow's account of instrumental learning either. Here, Mezirow's otherwise insightful theory is let down by its reliance on a logocentric epistemology. To see this more clearly, let us suppose there are *two* dancers, engaged together—collaboratively and creatively—in transformative learning of the sort I have sketched. Their collaborative learning is certainly communicative—enactively, but not verbally—for they are responding as dancers to the mutually communicated options they are collaboratively testing. That testing now includes an element of *inter*-subjectivity, which brings it into line also with Mezirow's requirement that it be as objective as possible.

Some though may still wonder how these cases could legitimately be termed self-reflective exercises of critical rationality, when little or no explicit *reasoning* was involved. Here I would draw attention to characteristics of *expert* activity and expert judgment (see Dreyfus & Dreyfus, 1986). Relevantly to their fields of expertise, experts—including the expert dancer—perceive and experience a situation differently from the non-expert. What for the novice and the newly competent may require a long and laborious process of reasoning, the expert may immediately *see* or insightfully grasp in critical detail—or in the case of the dancer, *feel* spatio-kinetically and aesthetically. Expert judgment may be holistic, intuitive, and quite unlike the laborious, linear, step-by-step plodding of inexpert judgment. But to say that expert judgment for this reason cannot be deemed rational would be utterly absurd. In the case of experts and insightful non-experts, transformative learning may employ forms of holistic rational judgment quite unlike the linear logic thought to be typical of discursive reasoning. Mezirow's account needs to be based in a better theory of rationality: a theory able to accommodate the rationality of holistic judgment (see e.g. Brown, 1990, on judgment in rationality; and Gadamer, 2014, on "fusion of [interpretive] horizons") and cognizant of non-verbal forms of intelligence, communication and learning (e.g. Gardner, 1983).

I shall make one further point. Mezirow (2000, p. 10) says that "the only alternatives to discourse for justifying a belief are to appeal to tradition, authority, or force". However, Wittgenstein (1967, §461) speaks of an Indian geometer's proof of a geometric theorem, where that proof is given by the geometer showing a geometric drawing and simply saying, "Look at this". The point here is that *showing*, *illustrating* and *pointing* are modes of communication, and, as in Wittgenstein's example, can be modes of rational discourse (the geometer's words were superfluous). Thus *discourse* too is a broader category than Mezirow, in his interpretation of Habermas (e.g. Habermas, 1984), seems to acknowledge.

Mezirow's analysis, while largely correct, needs to incorporate a broadened understanding of discourse, rationality and critical cognition. Thus amended, its applicability is broadened also.

Transformative Learning as Depth Transformation of the Psyche

Transformative Learning and Depth Psychology

I will now consider what may seem the least cognitively dependant of all types of transformative learning: transformation whose primary dynamic is at depth, where consciousness and subjectivity—indeed, one's psyche or self—are transformed by a largely unconscious resolution of a personal dilemma. This is sometimes characterized as "transformation as individuation" (Dirkx, 1998) or as formation of self or identity (Tennant, 2012; Illeris, 2014a, 2014b), or as (typically, Jungian) psychoanalytic transformation (Dirkx, 2006; Taylor, 2008) although, as I shall argue, one need not subscribe to psychoanalytic theory in order to identify a powerful transformative dynamic. Robert Boyd sees this form as a "fundamental change in one's personality involving the resolution of a personal dilemma and the expansion of consciousness resulting in greater personality integration" (Boyd, 1989, p. 459). This view "is grounded in the field of depth psychology, which is based on a fundamental belief in the powerful role that the dynamic unconscious plays in shaping our thoughts, feelings, and actions on a day-to-day basis" (Dirkx, 2000). Summarising the views of Boyd (1989) and Boyd and Myers (1988), Imel (1998) explains that they hold such transformation to be accomplished through a "process of discernment ... composed of the three activities of receptivity, recognition, and grieving", which "calls upon such extrarational sources as symbols, images, and archetypes to assist in creating a personal vision or meaning of what it means to be human". In essence, this process is said to be an imaginative "dialogue between ego-consciousness and the powerful contents of the unconscious" (Dirkx, 2000, endorsing Boyd's description).

Undoubtedly, transformative learning is sometimes of this type. However, its theorists' characterization of the role of symbols, images, and archetypes as "extrarational" is misconceived. And this has obscured the significance and dynamics of *cognitive* transformation at depth.

Cognitive Transformation at Depth

Involvement of Symbolic Processes in Depth-Transformation is not "Extrarational"

Boyd deems the crucial involvement of symbolic processes at depth "extrarational": he conceives transformative learning as occurring in a "realm of interior experience, one constituent being the rational expressed through insights, judgments, and decision; the other being the extrarational expressed through symbols, images, and feelings" (Boyd & Myers 1988, p. 275). This leads Dirkx (2000) to describe such transformation as "mytho-poetic." While the latter description is apt, Boyd's and Dirkx's distinction here between the rational and the extrarational is misconceived. In fact, the realm of "symbols, images, and feelings" is intimately linked with reasoning through what Lakoff and Johnson (2003) have termed *Metaphors We Live By*. As they argue in their book of that title, the discourses of rationality and even our everyday experiences are irreducibly pervaded by metaphors of embodied activity that are constitutive of our worldviews, our subjectivity and our shared understandings of life. These form a deep and coherently extensible system that largely

constitutes the *rational order* of experience, thought and life. That is, these metaphors rationally license expectations, assumptions, inferences, and questions, and make possible systematic and holistic understanding of ourselves and the world. For example, the metaphoric understanding that LIFE IS A JOURNEY, allows me to consider whether my life "is going anywhere", or may lead me to feel I have "lost my way". The point here is not that we all must or do see our lives as journeys, but that we may, and that this metaphor opens up perspectives on our lives and self-conceptions that would be otherwise unavailable. Pursuing the example (a further metaphor!) if life is a journey, then what sort of journey is mine: a quest? ramble? pilgrimage? escape? random walk? exploration? reconnoitre? And what am I, that I make such a journey: traveller? tourist? fugitive? pilgrim? quester? idler? outcast? refugee? Have I a destination? Have I a home? Is it the journeying or the destination that matters most? Is there something I seek, or should seek? May I return? Have I companions, or must I go alone? Am I following an established path, or must I 'blaze a trail'? So familiar are such metaphors, not only is it commonly overlooked that they *are* metaphors, but their deep relationship to embodied human experience too becomes invisible. Take the metaphor of a life-path or even a career-path. Only terrestrial creatures literally use or (metaphorically) 'follow' paths—creatures with legs and feet, or other means of terrestrial locomotion—were we no less intelligent aquatic beings, we would likely use aquatic metaphors for life's 'journey', and these, having different metaphoric implications and resonances, would make possible different understandings of life as a 'journey'. However, it is the *depth* (yet another metaphor!) of involvement of such metaphors in our understanding, as well as their pervasiveness in everyday life, that implicates them in transformative learning at depth. Metaphors are part of the essence of human understanding.

But suppose the metaphor LIFE IS A JOURNEY has little resonance for me; then to the extent that I do understand my life it will be in terms of some other metaphoric perspective(s): perhaps LIFE IS A TRIAL OR TEST (of what: courage? perseverance? sincerity? cunning? and to what purpose a test?) or LIFE IS A GAME (of chance? of skill? Are there stakes?) or LIFE IS A GIFT (of what sort? from whom? and for what reason?) or LIFE IS A WORK OF ART, or LIFE IS A DRAMATIC STAGE, or LIFE IS A SCHOOL, or LIFE IS PUNISHMENT. Nor are we restricted to a single metaphoric perspective, for (to continue the example) understanding and experience of life as a JOURNEY might be shaped *additionally* by other metaphors brought into relation with it. A journey might be a trial, a puzzle, a gift, an education, a reward, a punishment, an ordeal; in sum it might even be all of these. (See also Turner, 1996 & 2014, and Fauconnier & Turner, 2002, on "conceptual blending".)

Lakoff and Johnson analyse several "metaphors we live by" in detail, exploring cognitive principles of structuration, coherence, and systematic rationale of complexes of metaphors (Lakoff & Johnson, 2003, especially Chapters 15-22 and "Afterword, 2003"). They stress that these are principles not of lexical definition, but rather of cognition, experience and understanding. In effect, there is a cognitive 'logic' of metaphor—less strict than the logic of literal entailment, but that indeed is its strength, not its weakness, for it is the dynamic of interpretation, conjecture, expectation, analogy, insight, illumination and creativity, and thus an essential part of the rational order of cognition (see also Turner, 1996 & 2014; and Fauconnier & Turner, 2002). Indeed, the cognitive 'logic' of metaphor is at the heart of what the philosopher C.S. Peirce (2014) termed "abductive inference", and held to be a domain of the logic of inquiry (see also Mezirow, 2000, p. 9, on the importance of metaphoric-abductive inference in "communicative learning"). Metaphors, images and archetypes active in the unconscious and in its "dialogue" with the conscious ego, given their power to shape and orient our metaphorically structured meaning-perspectives and self-understanding, and whether or not they be part of a 'collective unconscious', similarly accord

with principles of systematic metaphoric structuration, coherence and blending: for their power would be inexplicable were their operation devoid of systematic rationale. Thus, although functioning at depth in the "dialogue between ego-consciousness and the powerful contents of the unconscious", they are not to be deemed "extrarational".

"Metaphors we live by"—and thus metaphoric *cognition*—permeate not only everyday thought, reason and experience, but also processes of identity formation and depth-transformation of self-understanding (for example, in the case of Charles Darwin discussed below). So while it is appropriate that theorists of depth-transformation such as Illeris (2014a, 2014b) criticize Mezirow's *narrowly* cognitivist account of transformative learning, they are mistaken in assuming that transformation *at depth* does not itself have an *essentially* cognitive dimension, this being metaphoric cognition. The 'spectrum' of cognitive activity is broader than they seem to have recognized.

Involvement of Imagination in Depth Transformation is not "Extrarational"

Nor does the involvement of imagination in this "mytho-poetic" form of transformative learning warrant the designation "extrarational" either; for those same principles of metaphoric structuration, elaboration and blending guide imagination. Similar principles shape the structuration, elaboration and blending of images and archetypes. It is indeed imagination that creatively explores and realizes the conceptual possibilities that are *made possible* by the 'logic' of metaphoric and imagistic structuration. Moreover, as Ricoeur (1994) argues, imagination—conceived as poetic, imagistic, metaphoric and narrative activity—is not only essentially involved in the meaning-making constitutive of the emergent realms of culture, society and action, but is essential also to their reasoned critique—as in the dialectical interplay between the imaginaries of "utopia" and "ideology".

Theorists of transformative learning at depth are right to distinguish it as largely a realm of imagination and feeling (Dirkx, 2001, 2006), and to stress the importance of these components even in Mezirow's type of transformation (see also Taylor, 1998, pp. 33-35; 2001). But they are wrong to divorce the symbolic, affective and imaginal dynamics of unconscious processes from reason, for the systematic rationale of metaphoric implication and blending is intrinsic to those processes. However, this is no more than half of the explanation for the power of imagination and feeling in transformative learning. The other half of the explanation is revealed by a type of transformative learning not yet adequately recognized or theorized in the literature.

Transformation from "Notional" to "Real" Understanding

Newman's Distinction between "Notional" and "Real" Assent

A mode of transformative learning was identified nearly a century and a half ago by Cardinal John Henry Newman in a philosophical work originally published in 1870, entitled *An Essay in Aid of a Grammar of Assent* (Newman, 1979). In this work, Newman (1979, pp. 76-86) introduced a distinction between what he termed "notional assent" and "real assent": between assent as a merely intellectual phenomenon—that is, where one has only bloodless "notions" of that to which one assents, one's way of understanding being through abstractions only—and assent in which the way of knowing is at least partly through acquaintance with the particularity of real or imagined instances—a mode of understanding which, unlike mere notions and abstractions, has rich connection with one's values, feelings and motives. Substituting the term "understanding" for Newman's "assent", we might gloss transformation

from "notional" to "real" understanding as the 'fleshing out' of mere notions with perceptual, remembered or imagined detail—with all of the conscious and unconscious mnemonic, affective, and conative resonances that such detail may have. Newman's key insight was that mere notions or abstractions have few such resonances, and hence have much lesser connection with and potency for one's system of motives and values, whereas whatever is present to the mind not in the abstract but in rich particularity, offers itself as "real", and it is this which moves us to feeling and action. For example:

[G]reat truths, practical or ethical, float on the surface of society, admitted by all, valued by few... until changed circumstances, accident, or continual pressure of their advocates, force them upon its attention. The iniquity, for instance, of the slave-trade ought to have been acknowledged by all men from the first; it was acknowledged by many, but it needed an organized agitation, with tracts and speeches innumerable, so as to affect the imaginations of men as to make their acknowledgment of that iniquitousness operative. (Newman, 1979, p. 78)

Notional-to-Real Transformation

One's notional assents may be sincere, but (to borrow a distinction from Geertz', 1973, cultural anthropology) notional understandings embody "thin" rather than "thick" content. However, transformation of understanding from "notional" to "real" is not merely a 'filling out' of detail. It is also—and this is what makes it genuinely transformative—a new *way* of conceiving and understanding that which formerly was only notionally apprehended—a *new way of knowing* it. And this new meaning, through its transformed connection with one's valuational and motivational system, is thereby the basis of a transformed meaning-perspective—even in the case of Newman's example above, in which one's assent both before and after the transformation might be expressed in the very same words—when, in one sense, one's view has not changed, while in another sense it is utterly transformed. Summarizing what he saw as the importance of such transformation, Newman (1979, pp. 85-86) says:

Real Assents ... as given to moral objects ... are perhaps as rare as they are powerful. Till we have them, in spite of a full apprehension and assent in the field of notions, we have no intellectual moorings, and are at the mercy of impulses, fancies, and wandering lights, whether as regards personal conduct, social and political action, or religion. These beliefs, be they true or false in the particular case, form the mind out of which they grow, and impart to it a seriousness...

Building on Newman's Insights regarding Notional-to-Real Transformation

Building on Newman's insights, I shall make four further points—none of them quite in terms Newman would have used, but all in the spirit of his account.

Notional-to-Real Transformation has Implications for Learning Transfer

Newman's examples and discussion make it very clear that real understanding embodies richly *contextual* understanding. Notions, however, are decontextualized abstractions, and as Brown, Collins and Duguid (1989b, p. 12, cited in Laurillard, 1993, p. 19) note, "to the degree that abstractions are not grounded in multiple contexts, they will not transfer well". (See also Brown, Collins & Duguid, 1989a.) By grounding notions in

experientially realized context, real understanding facilitates learning transfer, thus enabling us to recognize, appreciate and respond to the actual relevance of those notions in our lives.

The Distinction between Notional and Real Understanding does not reduce to the Distinction between Shallow and Deep Learning

The distinction between shallow and deep learning (Biggs, 1987) has two related aspects. First, it contrasts two broad learning 'styles': the shallow approach which aims at rote retention, and the deep approach which aims at understanding the matter to be learned. Second, it contrasts the respective learning outcomes. In neither aspect though does it correspond to the distinction between notional and real understanding. To take an example: a student's theoretical understanding of an abstract domain such as mathematics may be notional—couched entirely in abstractions—yet deep both in its approach and in the mathematical understanding achieved. Another student though might have gained an understanding of mathematics largely through experiential engagement with the world, and have thus acquired a real understanding of the mathematics learned. Nonetheless, the notional understanding of the first student might be both deeper and more extensive than the real understanding of the second. A third student, however, might have taken a shallow approach, merely memorizing equations and techniques without endeavouring to understand when or why they were applicable, thus guaranteeing a shallow notional learning outcome. Notional understanding, then, may be deep or it may be shallow. As regards outcome, real understanding too may be either deep or shallow. But as regards approach to learning, real understanding is never achieved by rote, for rote retention lacks the richly detailed particularity and motivational resonances that typify real understanding.

Notional-to-Real Transformation and Consciousness-Raising

Transformation from notional to real understanding—particularly in the examples Newman discusses—is closely related to consciousness-raising or *liberatory* transformative learning. The latter arose in response to systemic political oppression, as was the case for Paulo Freire's socially transformative, avowedly political "pedagogy of the oppressed" with its central process of "conscientization":

first, the oppressed unveil the world of oppression and ... commit themselves to its transformation ... [so that] this pedagogy becomes a pedagogy of all men in the process of permanent liberation (Freire, 1972, p. 31).

Consciousness-raising has been a feature of a number of wide-scale movements against injustice and oppression; these include feminist critique of patriarchy, civil-rights and human-rights movements, workers' and peasants' movements, other movements against socio-economic oppression, environmental movements, and so forth. As Mezirow recognized from the first, consciousness-raising is a politically committed form of his own type of transformative learning. However, here I would note also that consciousness-raising is the overcoming not only of ignorance and partiality in our meaning-perspectives, but also of mere notions (in Newman's sense). Indeed, the educative goal of consciousness-raising is always to produce a transformative *real* understanding of oppression, and of the structures of society and tradition that have entrenched it. For this, of course, empathy is important. However, it is important not only for its role in one's fellow-feeling and sense of community with the oppressed (and their oppressors), but also for its *cognitive* role in one's transformed way of understanding those others and oneself, for empathy involves a real, and never merely a notional appreciation of another's situation and experience.

The Roles of Imagery, Feeling and Imagination in Notional-to-Real Transformation

Newman (1979, p. 81) notes that "the natural and rightful effect of acts of the imagination upon us ... is, not to create assent, but to intensify it". He means two things: that real understanding should not substitute for notional or abstract thought, but should rather complement it (see also Laurillard, 1993, Chapters 2 & 3); and that it does not usurp the roles of reason and understanding, but rather *animates* reasoning and understanding.

Newman's insightful discussion of the distinction between notional and real assent, and of transformation from notional to real understanding, was never brought to a viable stage as theory. Subsequent attempts to reconstrue it in other epistemological terms (e.g. Price, 1969; or, more recently, in some of the work on the distinction between *de dicto* and *de re* propositional attitudes) ignored the transformative dimension and so missed its cognitive-motivational point. What was chiefly lacking in Newman's own perspective, I think, was an empirically based theoretical understanding of the relations between thinking, feeling and motivation. However, this deficiency has since been addressed by studies in neurology and neuropsychology (see e.g. Taylor, 2001; A.R. Damasio, 1994, 1999, 2003; H. Damasio *et al.*, 1994). I shall briefly discuss just one of these studies—but one which illuminates the importance of the distinction between merely notional and real understanding, and the latter's role in all transformative learning.

The neurologist Antonio Damasio (A.R. Damasio, 1994; see also H. Damasio *et al.*, 1994) discusses a peculiar syndrome of cognitive dissociation in which understanding appears intact, but remains merely notional and without personal significance or motivational import. Such cases may result from a particular type of acquired brain injury (that of the nineteenth-century railway worker Phineas Gage being a well-known example) in which intellectual function appears to remain almost wholly intact, yet has become dissociated from what we might term 'humanity' (A.R. Damasio, 1994). Not only is there loss of emotional intelligence and normal human feeling in these cases, there is loss also of anything that we might call 'wisdom' (as happened with Phineas Gage, although there is evidence of his partial recovery later in life: see Macmillan, 2008). People so afflicted may retain capacity for abstract thought and for what may appear to be 'critical reasoning'—but this is conducted entirely in notions, which sufferers are unable to flesh out with *real* understanding (in Newman's sense), and whose seriousness eludes them. Such cases bear out not only the strength of Newman's distinction, but also the importance to transformative learning of contextualized rationality (Clark & Wilson, 1991), rich experiential engagement and emotional connection (see e.g. Mezirow, 2000 & 2003; Taylor, 1998 & 2001; and, particularly, Mälkki, 2010, who draws extensively on Damasio's theory of the biological relationship between emotion, cognition and motivation).

This, then, is the second half of the explanation for why affective and imaginal dynamics are so important in transformative learning, as was recognized by Mezirow, by theorists of depth-transformation, and by liberatory transformative educators. It is these affective and imaginal dynamics which cognitively link insight to commitment (including metacognitive commitment), action, wisdom, and humane connection with others.

Developmental Transformative Learning: Kegan's "Subject-Object" Theory

Developmental transformative learning is based in theories of developmental psychology and refers to the roles of transformed epistemological perspectives—transformed

ways of knowing or understanding (Kegan, 2000)—in the cognitive development of the individual. Piaget's research showed that cognitive development involves not only accretive learning, but also crucial transformations of thought, understanding, sensibility and self-conception (see for example Piaget, 1972; Piaget & Inhelder, 1969). Likewise, Kohlberg's (1981,1984) and Gilligan's (1982) studies of development of moral reasoning and moral concepts revealed developmental transformations. However, theorists of developmental transformative learning argue that cognitive development is not completed at late adolescence or early adulthood, but continues through adult life (Daloz, 1999; Kegan, 1982, 1994). Not all developmental cognitive transformations are transformative learning in our sense though, as some lack a *meta*-cognitive component. For example, the cognitive transformations identified by Piaget, particularly at earlier stages of development, are invisible to, and unremembered by the child. On the other hand, college students' progress through Perry's nine developmental "positions" or transformations of epistemological approach (Perry, 1970, 1985; Daloz, 1999, pp. 70-82; Moore, 2002) sometimes does involve metacognitive awareness of the changed perspective.

However, the most philosophically insightful approach to developmental transformative learning is that of Robert Kegan (1994, 2000). Kegan identifies what he terms "subject-object" transformation as its fundamental form: this is where an epistemological perspective that previously functioned out of awareness as a predisposing approach in the *subjectivity* of the cognizer (that is, as something the cognizer unknowingly had been subject *to*), is now recognized as such, and thus becomes available as an *object* of conscious thought and awareness (Kegan, 1994, 2000). Here, the subject comes to recognize not merely the systemically predisposing role of an assumption in structuring her worldview, but more particularly its systemic exclusion of other, possibly richer or more adequate conceptualizations. It is the latter recognition which constitutes the essentially metacognitive basis of transformation. Kegan (1994, 2000) argues, as did Perry (1985), that it is of the greatest importance when restrictive or inadequate epistemologies are overcome by new ways of knowing and understanding. To learn a new *way* of conceiving and knowing, makes possible new forms of discovery, critique and creativity, and thereby transformation of self-conception also. Thus, in Kegan's (1994) view, "subject-object" transformation is the basis not only for the transformed epistemological and meta-cognitive outlook of the individual, but is what makes possible major cultural transitions, such as from traditional to modern, and modern to postmodern worldviews. Cognitively, epistemologically and culturally, "subject-object" transformation is "the form that transforms" (Kegan, 2000).

"Subject-Object" Transformation—"the Form that Transforms"

It remains now to show that it is transformative cognition (across the broad spectrum elaborated above) of Kegan's (1994, 2000) "subject-object" type that characterizes and is definitive of the entire range of transformative learning.

Transformation of Problematic Meaning-Perspectives

As we saw, Kegan holds that transformation occurs when an underlying cognitive formation—a "way of knowing" that one previously had been subject *to*—is brought to awareness as a systemic bias or constriction of understanding, and thus becomes available as an "object" of conscious reflection to be considered, evaluated and overcome. This is not to say that one must have been previously *unaware* of the principles or perspective that had shaped one's ways of knowing and conceiving, but rather that one was previously unaware of,

or unconcerned by, their problematic limitations. This recognition, however, is merely a beginning, and does not of itself constitute a transformation, for transformative learning never occurs passively but is achieved through active confrontation with a difficulty. For although every science has its known anomalies, every worldview its mysteries, and every frame of reference its limitations, some scientific anomalies are "shelved" (Kuhn, 1970), some mysteries of worldview become familiar and even sacred symbols, and many problematic limitations of frames of reference simply get dismissed as 'someone else's problem'. For a transformative process to occur, the problematic must become *my* problem or *our* problem, must be *experienced* as a constriction or obstacle to be overcome, and thereby as motivation for the cognitive, metacognitive, affective and practical work of values-based commitment that transformative learning requires. Thus we may gloss Kegan's insight in terms of Newman's distinction between notional and real understanding: for transformative learning to be possible, the problematic for the learner must be *real*, and not merely *notional*. This understanding is inherent in Kegan's epistemological characterization of transformative learning as a transformed way of understanding, for epistemology is (*inter alia*) a normative system of cognitive *evaluation*, and evaluation is fully authentic only when it betokens real (and not merely notional) commitment. However, other modes of evaluation may enter with the epistemological, for all fields have their (often distinctive) ways of understanding, learning, creating, discovering, comparing, evaluating and appreciating. The dancer of my earlier example had been educated in an aesthetic, and in techniques and forms which had shaped her practice and dancer's sensibility. When confronted with a disorienting challenge to her taken-for-granted frame of reference she became aware of its limitations; but to see these did not require her to abandon the values in which she had been trained, for it was *through* those modes of appreciation and evaluation that she was able to see the present inadequacy. Recognizing the problem was an insight, but not yet a transformation. It was only through accepting this problematic as *hers* that it became the motivation for active exploration of alternatives and eventual discovery of a transformative solution.

The case is even clearer with regard to discursive-Socratic transformative learning. To take a much studied historical example: Charles Darwin's notebooks (Darwin, 2002) show he was well aware of the assumptions and principles of nineteenth-century creationist science—indeed, he was himself a creationist during the voyage of the *Beagle*, albeit a critically curious one as his notebooks attest (Darwin, 2009, 2002). However, it was only subsequently to the voyage, in an intense two-year confrontation with what he now saw to be scientifically unacceptable *limitations* of the nineteenth-century creationist perspective, and the inadequacies also of pre-Darwinian evolutionary perspectives, that he first conceived his theory of evolution shaped by natural selection and chance variation of heritable characteristics (Desmond & Moore, 1991, Chapters 15-19; Darwin, 2002), thereby transforming not only his understanding of biology but his entire worldview.

Transformation at Depth

Actively confronting perceived limitations or inadequacies of one's frame of reference is the crucial metacognitive motivation and cognitive dynamic of transformative learning. However, as theorists of depth transformation have recognized, even that confrontation might occur below conscious awareness, to emerge consciously only in the "mytho-poetic" "dialogue" between the conscious self and the unconscious. To continue the earlier example: Darwin's biographers document not only the intense intellectual ferment of his secret notebooks as he was reinventing biological science, but also the deeper psychic turmoil of his many years of secret theorizing (Desmond & Moore, 1991, Chapters 15-19 & 21-32; Darwin,

2002). This deeper crisis concerned nothing less than his questioning of life's significance. It manifested itself in his secrecy and descent into illness and reclusiveness, while he fashioned and refined a new worldview for science and for modernity. The transformation at depth of Darwin's psyche was wrought through confrontation with the challenges his transformed scientific worldview presented for his self-understanding; it was a conflict between the deep and defining images of Darwin's social, religious and scientific enculturation, versus those of the worldview now revealed to him through his theorizing: chance instead of design; mechanism instead of purpose; an uncaring cosmos instead of a beneficent Creation; nature "red in tooth and claw" (in Tennyson's later phrase) overturning Enlightenment assumptions of nature's harmony; and the seeming inconsequentiality of the human world, its span no longer the measure of time but dwarfed in time's vastness. For Darwin, this deeper, troubling and often painful psychic labour of transformative self-understanding underlay all of his more public transformative achievements. Writ large, Darwin's struggle would become a transformative confrontation for modernity itself, from which would emerge a culture embodying the integrated secular, materialist, scientific-humanist world-view and human self-conception that Darwin found he had invented—in Kegan's terms, modernity's transformed way of understanding itself and its relationship to nature.

Notional-to-Real Transformation

In notional-to-real transformation too, we find an essential confrontation with the inadequacies of a former way of understanding. Here, one's previous, merely notional understanding had failed to reveal the *reality*—the real importance and relevance to one's life—of what was notionally entertained. Thus, in undergoing the process of consciousness-raising, for example, one recognizes the *real* implications of something for one's self-conception, responsibilities and behaviour (which, as notions, perhaps one had already entertained, but was not motivated to act upon); and on the basis of this transformed *way* of understanding, one acknowledges the need to re-integrate one's life through commitment to what one now vividly sees and feels must be done. Moreover, as Newman clearly understood and as theorists of consciousness-raising make explicit, such transformation involves commitment to one's now reconceptualised relationships with others, and real acknowledgement of one's having learned from and with others.

Conclusion

By examining the various forms of transformative learning, I have aimed to show how Kegan's "subject-object" transformation is their essential cognitive and meta-cognitive dynamic—the defining thread that links them all. In each, an underlying cognitive formation—a "way of knowing" that the learner previously had been subject *to*—becomes available as a problematic "object" of reflection whose limitations are to be identified, evaluated and overcome. Kegan's insight was a revelation to me when I first encountered it, and has remained an inspiration and guide ever since. "Subject-object" transformation is indeed—cognitively, epistemologically and culturally—"the form that transforms" (Kegan, 2000)—the cognitive and metacognitive essence of all transformative learning.

In arguing for that perspective, I hope I have been able to contribute to a deeper and more integrated understanding of transformative learning's cognitive and meta-cognitive dynamic, by investigating what I have termed its cognitive spectrum, and by showing that this spectrum is broader than seems to have been recognized.

The further theme in my discussion is the importance of (physically, biologically, personally and socio-culturally) *embodied* cognition for transformative learning. This is not a new insight (see, for example, Ng, 2005); it is recognized, at least implicitly, in much of the current literature. However, I hope I have been able to contribute to understanding here in two ways: first by drawing attention to forms of transformative learning involving modes of non-discursive, essentially embodied intelligence and cognition, such as in my example of the dancer; and second (and more generally) by showing how an underlying cognitive dynamic of "metaphors we live by"—the structuring images of our embodied being-in-the-world—is always at work in our thought, experience and self-conception, and how this dynamic may be both a locus and means for transformative learning.

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