

## From Being to Ontogenetic Becoming: Commentary on Analytics of the Aging Body

Ender Ricart  
Department of  
Comparative Human Development  
University of Chicago

Here I would like to discuss the potential limits of two popularly adopted theoretics of the body that are applied in the study of aging—Nancy Scheper-Hughes and Margaret Lock's three bodies and the mindful body and Donna Haraway's cyborg model (Scheper-Hughes and Lock 1987 and Haraway 1991).<sup>1</sup> The three bodies and cyborg models focus on ontologies that blur, mix, hybridize, or bridge dualisms, specifically Western dualisms. An unintended result of this focus is that in detailing what is being blurred, these authors inadvertently both lend legitimacy to the characteristic features of the very dualisms that they purportedly deny and proceed to limit their own analysis to these same categories.

When applying the three bodies or cyborg analytic to the study of aging bodies the body will be ontologized as a coming into relation of two otherwise disparate entities such as the social and individual, mind and body, human and machine, nature and culture. This analytic may be useful for investigating the politics of coming together of different spheres such as the social and individual, particularly in regards to the social symbolic or 'meaning-filled' dimensions of aging and its individual embodiments. However, it fails to capture the dynamic ensemble of forces at work that lay outside the purview of the dualistic categories being mixed. By adopting an analytic suggested by the philosophy of Gilbert Simondon (1980, 1992), we can shift away from explications of the ontologically mixed state of the body and onto questions concerning the aging body as process, becoming, or ontogenesis.

This commentary stems from doctoral dissertation research into Japan's aging society crisis (shōshi kōreika mondai) and the attending concerns about how best to

analytically approach old age as a process that extends beyond the individual, body, society, and the resulting politics of representation. I conclude with an introduction to Simondon's theory of ontogenesis and its potential applicability to the study of aging, particularly for attending to the many different and contributing forces at work in the becoming of old age.

### THE THREE BODIES AND THE MINDFUL BODY

In "The Mindful Body: A Prolegomenon to Future Work," Nancy Scheper-Hughes and Margaret Lock (1987) discuss three conventional heuristics of the body utilized for conceptualizing the relations between the individual and society: individual body-self, the social body, and the body politic. Their notion of the mindful body, which they suggest as a guiding concept for future research, is intended to firstly collapse the mind – body dualism of Cartesianism into one-concept and secondly bring together the three different theoretical approaches and epistemologies of the body (1987:8, 28-9). Scheper-Hughes and Lock write:

We lack a precise vocabulary with which to deal with mind – body – society interactions and so are left suspended in hyphens, testifying to the disconnectedness of our thoughts. We are forced to resort to such fragmented concepts as the bio-social, the psycho-somatic, the somato-social as altogether feeble ways of expressing the myriad ways in which the mind speaks through the body, and the ways in which society is inscribed on the expectant canvas of human flesh (1987:10).

However, I suggest here that the problem is not the lack of a precise vocabulary to express the myriad of interactions between the mind and society through the

body. The problem is that they are confining their analysis to the interactions of “mind” and “society,” through the mediating medium of the body. They are displacing a Cartesian dualism of mind – body with a dualism of interior – exterior, and much like the pineal gland, the body functions as mediator between an internal-mind and external-social. Under such an analytic it is impossible to represent the ontology of the body as anything more than a continual tug of war between two poles played out over the course of time.

Scheper-Hughes and Lock define the individual-body as “the lived experience of the body-self” (1987:7). While conceptions of this individual body (specifically in relation to social others) may vary according to society and culture, they state that it is safe to “assume that all humans are endowed with a self-consciousness of mind and body, with an internal body image, and with what neurologists have identified as the proprioceptive or “sixth sense,” our sense of body self-awareness, of mind/body integration, and of being-in-the-world as separate and apart from other human beings” (1987:14). We could therefore draw from their explanation the conclusion that there is at the core of every bodily being some notion of an individual. In their discussion of the social body Scheper-Hughes and Lock state that the body is both a physical and cultural artifact. They give the example of Mary Douglas’ (1966) observation that social categories determine how nature and the body are perceived. (1987:7). The body and its biological manifestations are made meaningful through the embodiment of socio-cultural values (age, class and gender normative behaviors). They write, “our point is that the structure of individual and collective sentiments down to the “feel” of one’s body and the naturalness of one’s position and role in the technical order is a social construct” (1987:23). The body is therefore subject to degrees of socio-cultural determination, which presumes the existence of some exterior and independently existing social order that is exerting agency.

The body politic in Scheper-Hughes and Lock’s article attends to the matters of power and control in the relationship between individual and social bodies (1987:23). Echoing Foucault’s concept of biopolitics and biopower, it refers to a society’s “regulation, surveillance, and control of bodies (individual and collective) in reproduction and sexuality, in work and in leisure, in sickness and other forms of deviance and human difference” (1987:7, 8). Within a body politic, culture is like a disciplinary script that domesticates the individual body to conform to the needs of the social and political order (1987:26). It is likewise in part the responsibility of the individual to

remain culturally savvy and conform to and maintain the body according to social expectations.

In sum, the body is at once individual, social, and political. The individual body-self represents the individual apart from society, but even this individual, its physicality, sense of individuality, and being are determined by socio-cultural categories. The body politic is the power struggle for control over the meaningful representations, interpretations, and actions of the individual body as a social body. The individual body is the terrain on which socio-political power struggles lobby for control over individual embodiments of certain cultural categories; the individual body is, as they write, “a locus of personal and social resistance, creativity, and struggle” (1987:31). Scheper-Hughes and Lock therefore only nominally replace Western dualisms of the mind – body, individual – society, and structure – agency with a tripartite of the mind – body – social. Their final addition to the discussion is a suggested fourth concept: the mindful body. The mindful body is a body infused with emotions, feelings, and affect that bind together and flow into the social, political, and individual dimensions of the bodily-self. The mindful body, they suggest, is a “‘missing link’ capable of bridging mind and body, individual, society, and body politic” (1987: 28-9). The mindful body is therefore their neologism for the body as medium between an internal-mind and external-social. The three bodies, pivoting around the uniting principle of the mindful body, does not actually do away with Cartesian or Western dualisms but actually reproduces the self-same characteristics in a different incarnation.

#### Cyborg Model

Donna Haraway’s cyborg model (1991), which incorporates bodily relations with technology, perhaps possesses the potential to transcend the hyphenated pivot of Scheper-Hughes and Lock’s mind – body – social. However, like the mindful body in Scheper-Hughes and Lock’s formulation, Haraway prefaces that the cyborg is a hybrid, a blurring or merging of dualisms. Ian Hacking (1998) notes that, in stating that the cyborg’s ontology is a merger, blend, or bridge, this model ultimately re-inscribes a fundamental distinction, an essential being to these very same dualisms which it purports to abolish (cited in Lamarre 2012:79). The cyborg, as a blurring of dualisms, is therefore limited to demonstrations of this blurred nature, that is, it is confined to perspectival pivoting between the essentialist entities that it brings into relation. As I will demonstrate, these essentialist entities are once again a social and an individual; only here the bridge is the body and technology.

For Haraway, the cyborg is an analytic for understanding the realities of what she believed to be an emerging information society of the 1980's and early 90's. In the information society science and technology provide new sources of power and also fresh sources of political action. Informatics of domination, communication technologies and modern biotechnologies, share a drive to translate the world into a problem of code that can be disassembled, reassembled, invested, and exchanged. These informatics of domination embody and enforce new social relations, new social meanings, and re-craft our bodies.

She writes that most socialists and feminists fear high technology and scientific culture, seeing in them only the intensification of Western dominating dualisms, urging us to regroup behind our organic bodies. Haraway instead sees in technological and scientific advance not just the potential for increased domination but also the possibility of resistance and positive change. She urges us to become cyborgs, informational semiologists weaving together new identities, new and potentially revolutionary relations, by drawing together disparate packets of information or code that are not controlled by the informatics of domination (Haraway 1991:181).

The cyborg's revolutionary potential stems from its hybrid nature, blurring all previously held concrete binaries such as machine and organism, nature and culture, public and private, male and female, self and other. As such it "suggests a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves" (1991:181). Because of the cyborg's hybrid nature it possesses revolutionary potential that, for Haraway, provides a way for individuals to reclaim a degree of agency over the meaning and significance of bodies and tools, i.e. technologies, escaping political domination in the age of information. What is of interest to us here is, firstly, how the body and technology are positioned as vehicles of social and subjective signification and therefore control. Secondly, what the body and technology are drawing into relation—an individual and a social order locked in a power struggle for control over the meaning and significance of bodies and tools.

For Haraway, the physicality of the cyborg is a merger of body and technology. In an information society, there is no longer an easy delineation between body and technology as both are transformed into coded text that can be differently written and read for socially or subjectively meaningful value (1991:152). She writes, "It is not clear who makes and who is made in the relation between human and machine. It is not clear what is mind and what body in machines

that resolve into coding practices...Biological organisms have become biotic systems, communications devices like others. There is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic" (1991:177-8). Both technology and the body are mediums of meaningful social and self-signification as well as material embodiments; they are, as she states, both myth (symbolically charged) and tools (material instruments for enforcing meaning) (1991:164). In the cyborg model, technology and the body are simultaneously an embodiment and conveyer of meaning. They are in varying degrees more or less faithful mediums through which a message about the self is conveyed to society and, in reverse, a medium through which individuals are socially regulated and controlled by governing forces.

The cyborg model is grounded in the assumption that an interior-self and exterior-social are engaged in a power struggle for control over the meaning of the body and things. It is because the cyborg model treats an interior-self and exterior social as essential entities that it can then conceptualize them to be in relationship to one another (Simondon 1992:312). Much as two separate points are connected by way of a bridge, here the relational bridge that forms between the exterior-social and interior-self is imagined to be a body and technology. Analysis that regards the body and technology as relational bridge can do little more than discuss the contestation between an individual and a social over the meaning of things.

#### APPLICATIONS OF CYBORG MODEL TO STUDY OF AGING AND AGING BODY

When either the mindful-body or the cyborg model is applied in the analysis of the aging body, one inevitably pivots around essentialized dimensions of an interior and exterior. That is interior or subjective questions of how one feels about aging or external-oriented questions about how one is perceived or made-meaningful within a given society. This is because the cyborg model and mindful body operate according to underlying presuppositions of the human condition that likewise divided the self into interior-self, the bridge of the body (or technologized body), and exterior social-world.

As has been discussed, the mindful body and cyborg model focus on the relationship between two substantialist entities like "the social" and "the individual" and represent the relational bridge as the body or technologized-body. When applying the cyborg model of analysis to the study of aging bodies and assistive technologies there is a tendency to regard such technologies as supplement

or bodily prosthesis, incorporated into the aging body itself, blurring supposed boundaries between human and machine to form an age-specific cyborg. This cyborg model of prosthesis is rather Lacanian insofar as it assumes a prior lack or loss, which is eternally compensated for but never quite fulfilled. The technological supplements a lacking body to approximate a lost “full” body that is independent and active. Social scientists who have studied aging bodies and assistive technologies regularly preface the contextual environment within which this culture of attention takes shape. Biomedical discourses of normalcy frame aging and old age as disease and in need of technological and scientific intervention for continual improvement and restoration (Joyce and Mamo 2006).

In such social scientific investigations into aging and age-related technologies, analysts emphasize how technologies convey social meaning about the self and incur a degree of social stigmatization onto the self (Joyce and Loe 2010; Long 2013; and Joyce and Mamo 2006). When the human and machine unite, the human is liberated, as the technology enables the human to continue to function at a level they would not otherwise be able to. These elderly cyborgs are enabled in their relation with technology, however, precisely because biomedicine frames the elderly body as incomplete or lacking. The use of such assistive devices indexes that the person is no longer a fully functional human agent. The ontology of the aging body as lacking or failing is therefore tied to the discursive framing of programs and technologies as assistive—supplement and prosthesis. Here, once again we find that under the aegis of the cyborg model, analysis pivots around a quasi-semiological analysis of technology and bodies as both a medium and message, asking questions about what it means within a given society and as an aging individual to be an aging body and use technologies. From the individual point of view, using assistive technologies may be empowering. However, at the level of society, particularly an overwhelmingly biomedical society, such technologies may signify a loss of normalcy. That is, analysis continues to pivot between two essential entities of the individual and the social through the medium of the body and technology. It fails to capture processuality because under this ontological framework one is focused on the relational-bridge as a drawing together of two poles. There is no change other than a tug-of-war between an external social and an interior-individual.

#### ONTOGENESIS AND PROCESSES OF EMERGENCE

What I am interested in demonstrating here is the potential analytic utility of the ontogenetic model of analysis to the

study of aging. Ontogenesis is an approach differentiated from the study of ontology, or the study of being, as the study of becoming. By adopting the ontogenetic approach, we focus not on the relationship between substantialist entities like “the social” and “the individual” as a blurring, mixing, or hybrid; but on the processes and practices that come to differentiate and shape some “thing” in the first place.

Gilbert Simondon employs the term transduction to denote processes of emergence that are initiated when previously disparate realities come into contact and restructure across a temporal and topological or conceptual interface (1992:312). When speaking of “disparate realities,” it is not an admission of substantialism, which inevitably represents such coming together as sequences of isolated exchanges that cannot and do not fundamentally change the core being of either entity. Rather, it is the recognition that these “disparate realities” or “things” are themselves a collective network of forces that came into relation and, with the course of time, underwent an extensive and continual process of negotiation, resolving incompatibilities into a meta-stable state. When these meta-stable “things” as previously disparate realities come into contact with others, they are fundamentally changed. They are no longer and can never return to their prior form as they are now involved alongside other previously meta-stable things in the shared becoming of something new.

Ontogenetic becoming does not occur because a thing (human, non-human, even conceptual) “is in relation to something else (to an exterior milieu, for instance), but because it is the ‘theatre or agent’ of an interactive communication between different orders” of being (Mackenzie 2002:60). A “thing” is information, as a transductive process it is continually resolving incompatibilities, manifesting as a series of phases of matter-taking-form in which disparate meta-stable things are articulated together (2002:49). The object of study in ontogenesis is this matter-taking-form; the negotiation of different meta-stable things and their systematic unfolding and enfolding into a shared becoming through a series of phases. Matter-taking-form eventually slows as a meta-stable state of reciprocal compatibility is attained within a collective, forming a unit-phase referable as “thing,” “order of being,” or “reality.” These “things” or “orders of being” are not complete and therefore substantial units but phases of meta-stability which can easily undergo further ontogenetic changes.

Indeed, the commencement of ontogenesis requires some problematic, a conflict or incompatibility between

two or more of these “orders of being” or “disparate realities” (this can be internal, as in the process of thought, or an external conflict with a surrounding environment or other meta-stable things). When one or more meta-stable thing or order of being are brought into relation it results in these beings or realities phasing out of one meta-stable state and engaging in the becoming of something new. Ontogenetic becoming is a matter of adaptation and flexibility between numerous orders of potentialities as these units come together within a higher order collective and a larger structured becoming (Simondon 1992; Lamarre 2012; Combes 2012; Mackenzie 2002). Transduction is, therefore, not the becoming of an isolated “thing,” it enlists a field of interrelations and transformative change with its surrounding environment, which Simondon has termed *milieu*. In order to grasp this higher order of ontogenetic becoming and the temporality and topology of transduction, Simondon writes, “we must consider the being not as a substance, or matter, or form, but as a tautly extended and supersaturated system, which exists at a higher level than then unit itself...” (1992:301). When a meta-stable “thing” is engaged in a transductive process of ontogenetic becoming, it is enfolded in a new topology of interrelations and a new futurity which insights change.

There are, then, layers upon layers of transductive process of becoming, as each new becoming triggers the modification and structuration of its prior form, environment, and a recruitment of other meta-stable things around it. Each meta-stable thing brought into contact with others and recruited in a larger order of becoming will have its own phases of becoming that worked to resolve previous conflicting orders of being (1992:312). This notion of genetic temporality inherent in transduction opens discussion up to questions of futurity and emergence. The temporality of ontogenesis is not a matter of “conditions of possibility” that a priori limit or constrain forms and expression of becoming, but, not unlike Heidegger’s theory of *Gestell*, is a *praesenti* an opening up, the bringing forth, and emergence of something new elicited by a coming together of previously disparate orders of being. Simondon writes:

Transduction is characterized by the fact that the result of this process is a concrete network including all the original terms....Following the dialectic, transduction conserves and integrates the opposed aspects. Unlike the dialectic, transduction does not presuppose the existence of a previous time period to act as a framework in which the genesis unfolds, time itself being the solution and dimension of the discovered systematic (1992:315)

So, while “things” can be discussed as more or less distinct, this distinction is belied by a topologically thick network of integrated forces united towards a common becoming. The units in this collective have their own genesis of transductive problematics of contradiction and resolution. There is a futurity of ontogenetic becoming, a movement towards some meta-stability, and the latent potential for emergence through incorporation into new collectives.

Ontogenesis is the study of mediation ongoing between an amalgamation of diverse realities including political, economic, corporeal, emotional, social, cultural, and technical that are shaping and molding (in-forming) one another into a larger meta-stable unity (Mackenzie 2002:18, Simondon 1992:312). The benefits of the ontogenetic model is that it allows us to pull away from relational and comparative analysis of two or more “things” as a blurring, mixture, or hybrid that nonetheless inevitably reproduces essentialisms in the midst of refuting them, to regard the aging body instead as undergoing and partaking in processes of becoming. If we regard aging as a transductive process we can apply the ontogenetic approach to investigate what forces and meta-stable things are brought together as a unit of becoming. What are these units’ genesis stories? What tensions and conflicts have arisen and how might they resolve? What is the topology and temporality of this becoming?

The body as a meta-stable being undergoing a transductive process of aging embarks on a path of becoming and in that process of becoming engages and triggers the systematic changes and transformations of those “things” surrounding it in a cascade like effect. We can therefore attend to questions of such as, “As the biological body undergoes transformations (resolution of internal problematics) associated with age, what new incompatibilities arise with surrounding living environment? How are these incompatibilities (problematics) being resolved and through what processes? Is there a higher order of becoming that encompasses the aging body of the individual and its immediate milieu? What other elements are undergoing transformative change in mutual becoming towards this potential larger transductive process of becoming?”

Certain “things” that were in a meta-stable phase prior to enlistment in a higher order of becoming have now been brought into relation within the theatre of becoming that is aging. Age-related assistive technologies, for example, prior to and outside of this complex ensemble of conjoined forces that is the transductive process of aging, might not have been assistive at all. A popular assistive technology



in Japan, the silver car, began as a stroller, having been designed by the same companies (its technical term in Japanese is *hōkōki* which mutually means baby-walker), to be, like a stroller, a small, lightweight, aluminum wheeled cart that provides an elderly person (almost exclusively marketed and sold to elderly Japanese women) with mobility support inside or outside (mostly used by persons living in metropolitan areas).

The silver car has its own genesis of individuation, which is not erased or eclipsed but very much alive and an important force in the present collective becoming. From its previous form as a baby-stroller, it has undergone a process of change together with the aging body and living environment. There are over 300 models of silver cars on the market at the moment. Most models feature thicker tires designed specifically for crossing over railroad tracks (lest an elderly person get stuck while trying to cross one of the many railroad crossings in Tokyo). A person can sit, carry groceries, lean on the silver car, push it, drag it, park it, get it wet, wash it, bring it inside, outside, get it repaired, and customize it with attachments and adornments. It too has its own milieu: assistive technology sales and rental agents, assistive technology specialist and consultants, care managers, assistive technology user-trainers, product designer and developers, regional comprehensive care centers, elderly care consultants, architects, engineers, strollers, gerontologists, the elderly themselves, their physicality (height, weight, and age), the living environment of the home, community, and climatico-geographic locality (not readily used in areas with hills or heavy snow fall), and finally sociality.

While it is beyond the scope of this paper to go into greater detail, the ontogenetic model demonstrates potential to add new insights and greater depth into our study of aging as a process and the aging body as information. While the three bodies, mindful body, and cyborg model have applicable relevance for imagining confrontations between two forces such as the social and the individual, it does not extend these relations into a larger context of emergence (Fisch 2013:324). The ontogenetic model potentially gives voice to a multiplicity of forces beyond the scope of dialectical confrontations. The ontogenetic approach grants the aging body both an analytical autonomy, as an ontological becoming that has its own set of relations with its surrounding environment (associated milieu) and its own genesis story behind its meta-stable becoming, but furthermore leaves it open to dynamic participation in larger order of becoming, what I hope to develop in future works as the aging society crisis (*shōshi kōreika mondai*). Aging bodies like

assistive technologies, like the health care industry, and like “community building” (*machi zukuri*)<sup>2</sup> are units in a larger collective that are mutually undergoing a process of change and transformation towards a new becoming that is, as a kind of organizing principle, the aging society crisis in Japan. It is by adopting the ontogenetic approach that we can grapple with that which makes the being develop or become, the process of being-in-formation, or matter-taking form, and perhaps look for larger orders of becoming into which various parts have been enfolded and are now in-formation.

## NOTES

1. For examples of aging studies which have applied the three bodies and mindful body model see Lock 1996; Lock and Kaufert 2001; and Traphagan 2000, 2002, 2004. For studies which have applied the cyborg model to the study of aging see Joyce and Loe 2010; Long 2013; and Joyce and Mamo 2006.
2. “Community Building” (*machi zukuri*) includes the concerted efforts of local government, national government, and gerontological scientific research to develop and build certain kinds of living environments in regional municipalities that support and promote “healthy aging.” That is, to encourage an active and informed lifestyle and continued social participation within and between generations to help foster a sense of integration and reciprocity amongst not just the elderly but all residents.

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## DISCUSSION

*Katrina L. Moore*  
*Lecturer, School of Social Sciences*  
*University of New South Wales*  
*katrina.moore@unsw.edu.au*

Ender Ricart's contribution on the aging body raises some important issues about how we think about technology and aging. Japan is experiencing the development of a wide range of technologies focused on aging, from pacemakers and motorized wheelchairs to walkers and telemonitoring. This development has been accompanied by significant ambivalence toward the use of medical devices and assistive technologies in later life (Long 2012). On the one hand, technologies facilitate independence for older persons, enabling them to live longer in their own homes. They also enable older persons to project a desirable identity of self-reliance, claiming they can manage to live independently without burdening their families. But the use of these technologies invariably pushes elders to adapt to new relationships of dependence and care. The technologies often demand new commitments from their users: they must adjust to the technology's own rhythms, capabilities, and occasionally breakdowns (Pols 2010). In the process, older persons may feel they lose a sense of autonomy, as they negotiate new social relationships and identities mediated by their reliance on technical devices.

Ricart's analysis provides us with some intriguing ways of thinking about these effects, and the complex social worlds through which technologies take on meaning in Japan. She proposes that we move away from using the dialectical confrontations of society and individual, and body and self to theorize aging, and instead make sense of the aging body in more dynamic terms.

She invites us, moreover, to investigate the multiplicity of forces implicate older persons and the unfolding interactive communication between different orders of being. She claims provocatively that the ontogenetic model gives voices to the relations between aging bodies and these orders of being. These orders of being would include new discourses of healthy aging, discourses of independence in old age, and technologies that purport to enhance well-being.

This is a welcome intervention into the study of aging bodies. My questions for Ricart are primarily

methodological. What field sites does she propose for exploring the different orders of being of the aging body? What innovative methodologies might she draw on to capture these orders of being? My secondary questions consider the relationship of the aging body to materiality. More detailed analysis of the ways aging bodies are constituted through material arrangements would be of great interest because it is in and through such material arrangements that bodies acquire subjectivity and agency.

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