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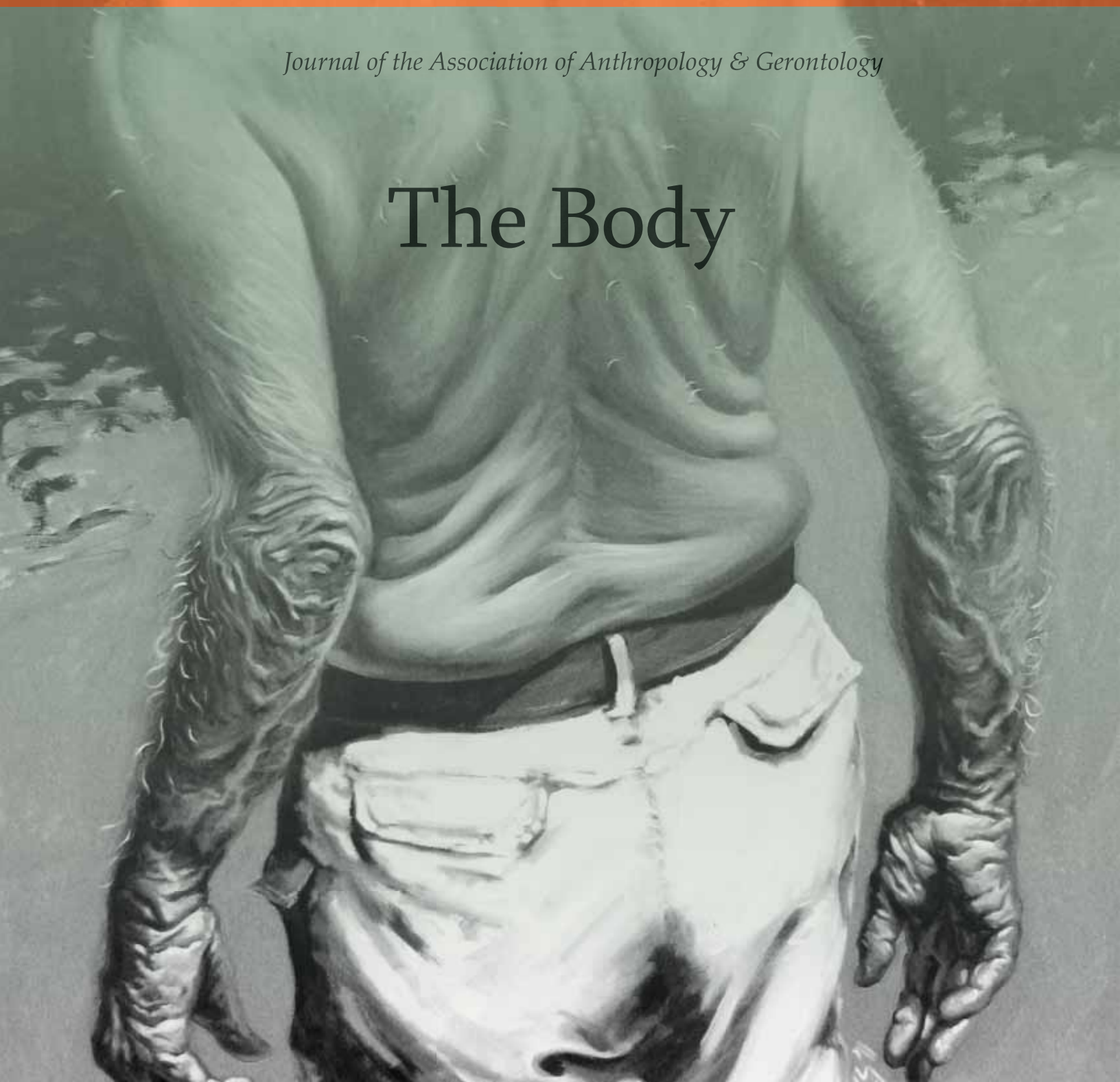
The Body



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Editor's Introduction to the Issue: the Aging Body

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"The body" has long been a fertile topic for anthopological exploration, grounding the ways we consider everything from the molecular and genetic evolution of the human species, to the sense-mediated experience of culture, gender, sexuality and power. Aging too is an embodied process, though the body may also be used to contest and refashion aging in ways that dissociate from ageist stereotypes and the stigma of bodily dependence. As a site of these contestations, it becomes a window into ourselves and our social life. How does old age and aging contribute to anthropological conversations on embodiment, bodily aesthetics, health, biopolitics, and longevity?

Aging presents itself first through the body, but it is a body woven into the fabric of cultural and social life. The temporality marked by the aging body may be linked to changes in attitudes and self-perceptions, as in James Hillman's vivid description from his bestseller *The Force of Character and the Lasting Life* (1999):

> In later years, the pull of gravity takes over. Ambitious, upwardly mobile social climbing, career and class, no longer offer glamour. You no longer need to be among the beautiful people or standon on the top deck shouting orders. Instead, the Great Sag: eye pouches, double chins, jowls, pendent breasts, hanging skin on your upper arms, droopy belly, butt, scrotum, labia; even the earlobes grow long toward the floor.

If we listen closely, Hillman's description is full of freedoms granted by the aging body; a kind of relief presented somatically by the graceful "Great Sag." This month's cover art and Portfolio feature visualizes Hillman's words. Takacs' work not only demonstrates the potential aesthetic beauty of the older subject, but it also expresses the joy found in working with those subjects, providing a space for recognition and engagement that extends far beyond the canvas.

As anthropologists, we are keenly aware of how presntations and practices of the aging body can bring about new reflections on the embodied self, bodily-mediated relationships, and cultural values. Since the topic of the body has already been examined from numerous angles within anthropology, we thought it appropriate to begin this issue with a theoretical commentary by PhD student, Ender Ricart. Ricart brings a critical perspective to some of the fundamental paradigms of the body in anthropology, and suggests ways in which chronotopes of aging might help us to expand and develop the field even more. Ricart's provocative commentary is followed by short response by Katrina Moore, whose work on aging and the body has also been based in Japan.

AAQ received many inquires and submissions for this issue, and is happy to publish five full articles ranging from an a biological evolutionary perspective on menopause and women's health (Froehle) to a phenomenological perspective on Filipina caregivers and their Israeli patients (Mazuz). They reveal the centrality of the aging body as located in social and political spaces of demography and home care (Penney, Crampton) as well as in biosocial communities of leisure (Steadman).

We hope that this broad range of content is a useful resource for teaching and research, encouraging and inspiring even more discussions in this field.

Jason Danely
Editor-in-Chief

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

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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; Haraway 1991).[1] 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 identity politics, 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 political 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 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 1980s and early 90s. In this 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 form 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 relation 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 bridges can do little more than discuss the contestation between an individual and a social over the meaning of things.

Applications of Cyborg Model to the Study of Aging and the 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 divide 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 have 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 ontogenesis to denote, not the becoming of an isolated "thing," but a spatio-temporal field of interrelations and transformative change involving multiple things and the surrounding natural and living environments. Simondon writes, "we must consider the being [or thing], not as a substance, or matter, or form, but as a tautly extended and supersaturated system, which exists at a higher level than the unit itself" (1992:301). The object of study in ontogenesis is this *matter-taking-form*, which commences when two or more previously disparate and incompatible "orders of being" or "disparate realities" come into relation and simultaneously begin negotiating and navigating difference through shared change. 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, in the processes of ontogenetic becoming, when previously disparate realities come into contact they restructure and transform across a temporal, topological and even conceptual interface to form something new and emerging (1992:312). As previously disparate realities come into contact, they are fundamentally changed. They are no longer and can never return to their prior separate forms, they are now a joined unit in the shared becoming of something new.

In the theory of ontogenesis, identifiable "things" are not identifiable because they possess an immutable stable core-essence; rather, it is because they attained a *meta-stability* – a tenuous and shifting equilibrium of disparate forces that nonetheless remain open to change if and when they are recruited into the shared becoming of something new. Thus, when speaking of "things" it must be understood that they are *meta-stable things* with their own genesis story of conflict, change, and tenuous resolution into meta-stability. In each meta-stable thing there are layers upon layers of ontogenetic processes 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 ontogenesis opens discussion to questions of futurity and emergence. The temporality of ontogenesis is not a matter of "conditions of possibility" that *a priori* limit or constrain manifestations of form or expression of being, but, not unlike Heidegger's theory of Gestell, is *a praesenti*, an opening up, the bringing forth, and emergence of something new elicited by this coming together of previously disparate orders of being. Simondon writes:

> Transduction [or ontogenesis] 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 predicated on a temporally and topologically thick network of integrated forces that have united towards a common becoming. The units in this collective have their own genesis stories, 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.

To reiterate, 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). When a meta-stable thing is engaged in a process of ontogenetic becoming, it is enfolded in a new topology of interrelations and a new futurity, which incites change. When two or more things or orders 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).

Ontogenesis is the study of mediation ongoing between an amalgamation of diverse forces 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 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 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 such as, "As the biological body undergoes transformations (resolution of internal problematics) associated with age, what new incompatibilities arise with surrounding living environments? 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 ontogenetic 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 becoming, 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 specialists and consultants, assistive technology user-trainers, product-research, design and development 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 in-formation. 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 it's 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*)[2] 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

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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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Author Response

Thank you for your thoughtful comments. I would like to address a few of your questions but also re-iterate some main ideas from the theory of ontogenesis I am proposing in this paper. Ontogenesis is, among other things, an attempt to move away from questions concerning identity politics and semiology. With identity politics and semiology, the technological and the body are relegated to the role of mediator or infrastructure. Technology as "prosthesis" is a medium for a message which, inevitably positions the human and society as the origin or source of meaning-making that is, however (un)faithfully, communicated through technology. When technology is seen as an infrastructure it takes on the role of foil to humanagency as either challenging or enabling it, but is never then accepted on the same analytical level as the symbolics of culture, as a source of meaning-making.

Questions about how technologies mediate, how aging individuals negotiate identities, and what is the social significance, are still grounded in the same analytic models employed by Haraway, in her work on the cyborg, and ScheperHughes and Lock, in their work on the three-bodies and mindful body. Ontogenesis tries to capture, as you note, a sense of dynamism, the processes of change and transformation that take place in both technology and the human/social. It can do so because it does not give deferential preference to either one or the other, but, turns to them as a unit in the shared becoming of something new. Technology, the body, culture and even society are, under the ontogenetic model, regarded as transductively-derived meta-stable things, which have through chance or by way of an organizing principle been brought into new relation with other meta-stable things and irreversibly undergone a united transformation towards a shared and new becoming. Two or more meta-stable things come together to form a new unit in a larger order of becoming.

In the text, I give the example of the stroller becoming a distinct type of walker in Japan, the silver car. My aim with this example was to demonstrate the mutual transformation (you could say the mutual meaning-making if we were to adopt a familiar vocabulary), of technology and body as they are united in the now shared process of aging. The silver car, in its prior meta-stable form as the stroller,had a disparate existence apart from aged bodies. When they were brought into relationship the stroller and the body transformed. They formed a unit-of-sharedbecoming, which I termed aging. Discourses of independence and the enhanced well-being of elderly persons are certainly of importance but they are not the focusof ontogenesis. This is where ontogenesis differs from the dialectic and hybrid models: It is not focusing on the body, agency, or social significance, but searchingfor the processes that underlie change, the network of relations that support the new unit-of-shared-becoming, and looking towards what is emerging.

In my current research, I am interested in these processes of change currently underway, and also in this larger-order of becoming, the motivating force, or current of change that has recruited and brought, in my example of the strollerand bodies, previously meta-stable and disparate things, together. This brings me to your next and important question of the applicability of this theory – What would a study that applies this theory look like? What would be the field sites? What mightthe methodology be? While I am still in the middle of field research , it is my belief that this larger order of becoming is Japan's "Aging Society Crisis" (shōshikōreikashakai mondai). It is one such instance of self-conditioning emergence. The Aging Society Crisis is a kind of orienting principle that aligns previously disparate ordersof being into a new operative solidarity, evoking emergent potentiality, and bringingthe past and future together in the present process of becoming.

The Aging Society Crisis is a very real agent of change, a future potentiality that has come to shape the actions and approaches of the present – impacting

gerontological research and development, government granting of age-related research, national government subsidies of regional government projects, Long Term Care Insurance (LTCI) policy and revisions, and national government subsidized elderly care. It is furthermore inextricably related to enactments and experience of and approaches to aging, old age, and community or sociality in Japan. For example, in response to the potential-future of the Aging Society Crisis, the national and local government, geriatric health care specialists, and aging studies scholars and researchers have over the last decade taken an increasingly epidemiological approach in regards to aging and aging-environments. Certain conditions of old age, namely conditions that render persons dependent and in need of care, are seen as potentially preventable through early intervention with health education, early detection, and various programs and services that facilitate healthy life style. Many aging-related projects, services, and gerontological research focus on the notion that by remaining physically, mentally, and socially active, allthemselves indices of vitality, can help stave off the onset of stagnation and decline characteristic of unhealthy and therefore costly aging.

Beyond promoting the agency of the individual to change and transform his or her lifestyle, many gerontological research projects and regional governmentspromote services and programs aimed specifically at "community building," which, while "community" overlaps with district legal boundaries, is more a matter of atmosphere, safety, education, and most importantly, social integration. Community building is not a new subject for discussion, but community building for an agingsociety carries with it the extra distinction of merging epidemiological temporal notions of "prevention" with the atemporality of hope—the hope of tapping into an innate and "natural" harmony with self, others, and living environment to forman intimate and affective community, that in turn will effect positive change in the mental and physical health of its residents.

While "prevention" is intended to decrease the numbers of elderly enrolled in Japan's national LTCI and therefore decrease the economic burden of care and the coming Aging Society Crisis, I would argue that prevention is also a manifestation of the self-conditioning emergence of the Aging Society Crisis as part of its becoming.I have situated myself at these gerontological research labs, gone to their field sites, visited with regional governments, and interviewed with elderly to study further the ways in which the anticipatory future-in-the-present of the Aging Society Crisis, serves as a schema of concretization in gerontological research and regional government "prevention" initiatives and conversely how gerontological research, local government programs, and LTCI policy have come to in-form the future-in-the-present that is the Aging Society Crisis.

Postmenopausal Health and Disease from the Perspective of Evolutionary Medicine

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Abstract

Menopause normally occurs between 45-55 years of age, marks the end of a woman's reproductive lifespan, and is accompanied by a reduction in estrogen that has substantial physiological effects. The standard medical view is that these changes underlie high postmenopausal disease rates, defining menopause as an estrogen deficiency condition needing treatment. This view stems from the idea that extended postmenopausal longevity is a consequence of recent technological developments, such that women now outlive their evolutionarily-programmed physiological functional lifespan. Increasingly, however, researchers employing an evolutionary medicine framework have used data from comparative demography, comparative biology, and human behavioral ecology to challenge the mainstream medical view. Instead, these data suggest that a two-decade human postmenopausal lifespan is an evolved, species-typical trait that distinguishes humans from other primates, and has deep roots in our evolutionary past. This view rejects the inevitability of high rates of postmenopausal disease and the concept of menopause as pathology. Rather, high postmenopausal disease risk likely stems from specific lifestyle differences between industrialized societies and foraging societies of the type that dominated human evolutionary history. Women in industrialized societies tend to have higher estrogen levels during premenopausal life, and experience a greater reduction in estrogen across menopause than do women living in foraging societies, with potentially important physiological consequences. The anthropological approach to understanding postmenopausal disease risk reframes the postmenopausal lifespan as an integral period in the human lifecycle, and offers alternative avenues for disease prevention by highlighting the importance of lifestyle effects on health.

Keywords: menopause, estrogen, evolution, human lifespan, aging

Introduction

Anyone seeking to learn more about the subject of menopause[1] will find standard clinical and public health policy interpretations readily and prominently available. A simple Internet search for the word "menopause" returns numerous websites from reputable online medical resources[2], all of which provide roughly the same, narrow definition: menopause is the complete cessation of menstruation, and occurs twelve months after the final menstrual period, usually between 45-55 years of age. Along with these definitions, much of the accompanying health information addresses symptoms, risk for associated diseases, and treatment options. This information fits the overall medical paradigm that menopause is not simply a transition between physiologically distinct life history periods, but is instead a deficiency disease that calls for allopathic treatment (Marnocha et al. 2011; Meyer 2001; Meyer 2003)

Epidemiological evidence indeed shows that the period surrounding and following menopause is associated with an increased prevalence of disease and disease risk factors, particularly those relating to the metabolic syndrome including weight gain, body composition change, obesity, hyperlipidemia, hypertension, and insulin resistance, all of which increase risk for heart attack, stroke, and type 2 diabetes (Torrens et al. 2009; Enns and Tiidus 2010). In the

United States, 39.8% of women aged 45-64 years are obese, 39.7% are hypertensive, and 11.3% are diabetic, whereas rates for the same conditions among women aged 20-44 years are 33.2%, 6.9% and 3.2%, respectively[3]. Of all new type 2 diabetes diagnoses in U.S. adults over age 20 years, 55% occur in the 45-64 year age range, with an additional 20% occurring after age 65 years (Centers for Disease Control and Prevention (CDC) 2011).

The medical deficiency disease model attributes elevated disease prevalence to the substantial and permanent reduction in circulating levels of the reproductive steroid hormone 17β-estradiol (henceforth referred to as simply estrogen) that occurs within the four years surrounding the final menstrual period (Randolph et al. 2011; Sowers et al. 2008). Estrogen has multiple non-reproductive physiological functions including fat metabolism for energy, and is involved in numerous metabolic signaling pathways (Campbell and Febbraio 2001; Campbell et al. 2003; Spangenburg, Geiger et al. 2012; Sugiyama and Agellon 2012). Thus, increased rates of metabolic diseases in menopausal and postmenopausal women are thought to result in large part from the menopausal reduction in circulating estrogen and the ensuing hyposteroidal physiological environment (Carr 2003). In the medical model, the female body is poorly equipped to maintain normal metabolic function under reduced-estrogen conditions, and the postmenopausal period represents a state of "…uncontrolled degenerative loss of homeostasis…" (Austad 1997).

The idea that the female body is ill-prepared to function in the low-estrogen postmenopausal physiological environment derives from a specific view of the human lifespan, which holds that developments in hygiene, sanitation, and medical technology have only recently extended the normal human lifespan into the 6th and 7th decades of life, beyond the evolutionarily programmed physiological lifespan. In other words, these technological developments have resulted in humans "living too long", and outlasting our intrinsic capacity for physiological self-maintenance. This perspective relies on the concept that somatic longevity, the lifespan of non-reproductive physiological systems, mirrors reproductive longevity, or the lifespan of germline cells that allow one to reproduce. Menopause represents the termination of reproductive longevity, which, implicit in the medical view, means that evolution has programmed the maintenance of somatic longevity to cease at this same point. In other words, somatic systems are expected not to have evolved to function past menopause, and are thus incapable of adapting to the hyposteroidal postmenopausal environment. This view lends a character of inevitability to the medical conception of postmenopausal disease, and suggests that women simply live longer than their bodies are built to handle.

The main consequence of the medical deficiency disease model of menopause has been the extensive prescription of hormone replacement therapy (HT), with the intention of replacing lost estrogen to reduce symptoms and prevent development of disease. The promotion of HT as treatment serves as a thorough illustration of the medicalization of menopause, as demonstrated by a recent survey of HT-related pharmaceutical literature. Websites for HT generally cast menopause as having unnatural, negative effects and leading to suffering, not only physically, but also psychologically and socially, and present the physician's perspective as privileged, versus women's own experiences (Charbonneau 2010). Widespread prescription of HT as the solution to the medical problem of menopause in and of itself provides ample reason to seek alternative conceptions of the relationship between menopause and women's health. This is because over the past decade, a series of papers reporting the results of the Women's Health Initiative (WHI) and the Million Women Study have demonstrated an association between taking HT and increased risk of developing cardiovascular disease and breast cancer (Narod 2011; Rossouw et al. 2002). Although these results have been debated since their publication (Tanko and Christiansen 2006; Utian 2012; Shapiro 2004), the rate of women taking HT has since declined (Ettinger et al. 2012).

While decreased HT use represents a modest shift away from the emphasis on pharmaceutical responses to menopause, it appears mainly to be due to women's choices rather than a change in the medical model (Marnocha et al. 2011). Instead, the medical model appears to remain intact, as evidenced by the HT advertising discussed above (Charbonneau 2010), by the reflexive readiness of physicians to prescribe HT (Marnocha et al. 2011), and by efforts in the scientific community to promote HT by citing criticism of the WHI's results (Nedergaard et al. 2013). Whereas women can reduce the physical consequences of the medical model by choosing not to fill HT prescriptions, the continued medicalization of menopause still has important and often negative social and psychological effects on women (Cimons 2008; Charbonneau 2010; Marnocha et al. 2011).

This paper presents an alternative approach to understanding menopause and postmenopausal health, that of evolutionary medicine, which follows from the principle that modern human health and disease are at least partially products of the evolutionary forces that have shaped modern human biology and variation (Nesse and

Williams 1994; Williams and Nesse 1991; Gammelgaard 2000). As such, the following evidence serves as a critique of the medical model of menopause as a deficiency disease, supporting a different, evolutionary view that situates human menopause and the postmenopausal lifespan in its broader ecological and life history contexts. The evolutionary view derives from a wealth of comparative anthropological and biological evidence, incorporating cross-cultural and cross-species comparisons to more holistically understand the process of menopause and health expectations for the postmenopausal lifespan. Adopting the evolutionary perspective has the potential to change clinical practice in two key ways. The first is to further obviate the routine prescription of HT by establishing that extended maintenance of sound physiological function under low-estrogen postmenopausal conditions is the human norm. In other words, somatic and reproductive longevity are divorced, so that the human female body has evolved to function and remain healthy for a substantial period of time after menopause, despite the accompanying reduction in circulating estrogen.

Second, comparisons of menopausal physiology, postmenopausal survival, and health across species and between human cultures allows for the identification of lifestyle and behavioral factors that may play a role in the etiology of metabolic diseases among women living in industrialized societies, presenting non-pharmacological and non-hormonal avenues for disease prevention. Although there is a vast literature on the physiology of metabolic disease, detailing the relevant physiochemical pathways and mechanisms of preventive strategies is beyond the scope of this paper. Instead, the following sections review the evidence for evolutionary medicine's interpretation of menopause, which can point to promising areas of research into the specific physiological mechanisms that promote postmenopausal health. Overall, this paper contends that the medical paradigm of deficiency disease is out of step with the biological reality of human menopause, and that an evolutionary medicine approach has the potential to enhance medical, cultural, and individual understandings of menopause and the postmenopausal lifespan.

The Process of Menopause and its Relationship to Postmenopausal Health

An important aspect of the evolutionary medicine approach is the recognition that menopause is the culmination of a long-term, highly-variable process, rather than a brief transition or event, as sometimes characterized in the medical model. The length of the menopausal process contributes to its variability and also to variability in postmenopausal physiology, providing the raw material upon which natural selection acts. Also important to recognize is that menopause, defined as the end of menstruation, is better seen as the culmination of a larger and longer process wherein ovulation ceases and reduces fecundity, or reproductive potential, to zero. This larger process of the cessation of ovulation, in which menopause is the most readily observable outcome, places a limit on lifetime reproductive success, which is the key variable in natural selection. Evolutionary interpretations of menopause must therefore incorporate an understanding of variation in the process of menopause and its relationship to reproductive potential.

The capacity to experience menopause is dependent on the property of semelgametogenesis, where all reproductive cells (in this case oocytes, or egg cells) are overwhelmingly produced only early in life, and are not replenished at any point later in the lifespan (Finch 1990; Peccei 2001b; Ellison 2010). Human females are semelgametogenic, a trait they share with all other female mammals and birds (Bribiescas 2006), and human oocyte production occurs largely prior to birth (but see (White et al. 2012) with the number of egg cells peaking during the fifth month of gestation. Thereafter, due to atresia (a form of apoptosis, or programmed cell death) the population of oocytes decreases to roughly two million at birth, and 400,000 at puberty. After puberty, ovulation and continued atresia cooperate to deplete the remaining store (Faddy et al. 1992; Hansen et al. 2008), eventually reaching a threshold of ~1000 surviving ova in the years leading up to menopause. Below this threshold, the remaining oocytes produce very little estrogen, which is required to stimulate uterine wall preparation in anticipation of implantation of the mature egg (Clancy 2009).

Among other hormonal changes, the menopausal reduction in estrogen is thought to disrupt endocrine pathways responsible for ovulation and thus fecundity, leading to an average age at menopause between ~45-55 years across human populations (O'Connor et al. 1998; Thomas et al. 2001; Greenspan and Gardner 2004; Johnson et al. 2004; Walker et al. 1984). The age at menopause does, however, vary on population and individual scales, owing to a combination of genetic, environmental and behavioral factors. On the whole, data from diverse human populations consistently fall within the aforementioned age range (see Figure 1). The three lowest population average ages at menopause (≤47 years), however, all come from subsistence farming or herding populations practicing natural fertility (i.e. non-contracepting), suggesting that nutritional and reproductive factors influence menopausal timing.

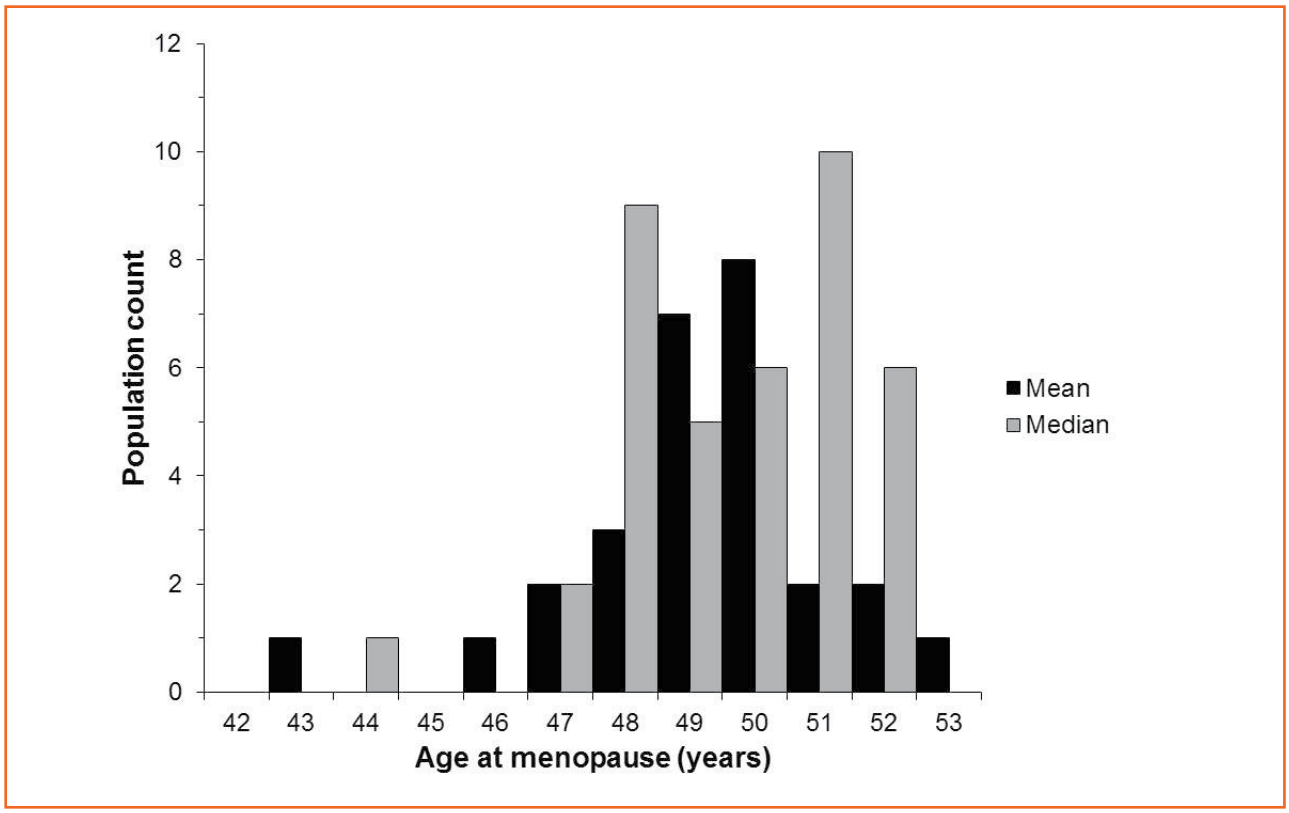

Figure 1: Number of populations (total N=53) with average (mean and median) ages at natural menopause within each age range (Adekunle et al. 2000; Ayatollahi et al. 2003; Beall 1983; Castelo-Branco et al. 2005; Chim et al. 2002; Garrido-Latorre et al. 1996; Gonzales et al. 1997; Ku et al. 2004; Mohammad et al. 2004; Balan 1995; Okonofua et al. 1990; Reynolds and Obermeyer 2003; Walker et al. 1984; Castelo-Branco et al. 2006; Burch and Gunz 1967; Chow et al. 1997; Fuchs and Paskarbeit 1976; Greer et al. 2003; Hunt, Jr. and Newcomer 1984; Ismael 1994; Kapoor and Kapoor 1986; Karim et al. 1985; Kato et al. 1998; Kriplani and Banerjee 2005; Kono et al. 1990; Kwawukume et al. 1993; Luoto et al. 1994; Magursky et al. 1975; McKinlay et al. 1985; Morabia et al. 1996; Ramoso-Jalbuena 1994; Reynolds and Obermeyer 2001; Rizk et al. 1998; Samil and Wishnuwardhani 1994; Tungphaisal et al. 1991; Walsh 1978; Carda et al. 1998; Hagstad 1988; Scragg 1973).

Whereas the medical model would tend to view such variation and deviations from the norm as pathological (Meyer 2001), the evolutionary perspective sees this variation as potentially adaptive (Gluckman and Beedle 2007; Ellison 2010). Given that the process of oocyte depletion occurs over decades and across several very distinct life history periods, it is possible that variation in age at menopause and postmenopausal physiology may be optimized for an individual in the mode of a predictive adaptive response (Gluckman and Beedle 2007; Gluckman et al. 2005). The "predictive adaptive response" concept suggests that individual and population-level phenotypic variation reflects an evolved flexibility that responds to cues during development, influencing subsequent life history and geared towards maximizing lifetime fertility in the face of an unstable, yet to some extent predictable, environment. This approach has been used extensively to explain variation in menstrual cycle characteristics (Vitzthum 2008; Vitzthum 2009), and in a similar manner may be applicable to menopause and the postmenopausal lifespan (Ellison 2010). In this view, variation in the process of menopause and postmenopausal physiology represents the normal range of phenotypic expression, within constraints set by the specific evolutionary history of the human species.

On top of population-level variation, there is also substantial inter-individual variation within populations in terms of the slowing of reproductive function and age at menopause (Treloar 1981; te Velde and Pearson 2002). Some of this variation is inherited, with heritability estimates ranging from 30-85% (Torgerson, Thomas, Campbell et al. 1997; Torgerson, Thomas, and Reid 1997; Peccei 1999; de Bruin et al. 2001; van Asselt et al. 2004; Murabito et al. 2005; Snieder et al. 1998), but such estimates should be interpreted conservatively (Vitzthum

2003; Voorhuis et al. 2010). Thus, the genetic basis for menopause remains incompletely understood (Voorhuis et al. 2010) despite extensive research on the genetics of aging more generally (Finch 1990; Finch and Kirkwood 2000). Still, the inconsistency between samples can be taken to mean that age at menopause is a complex (non-Mendelian) trait, under the influence of multiple genetic and environmental factors.

The effects of environmental, behavioral, and developmental influences on the age at menopause are somewhat better-known. Cigarette smoking is associated with an earlier age at menopause (Zenzes 2000; Mishra et al. 2010), whereas women who experience fewer menstrual cycles throughout life due to greater parity or more irregular cycles tend to have a later age at menopause (Soberon et al. 1966; Kaufert et al. 1987; Stanford et al. 1987; Whelan et al. 1990; Dahlgren et al. 1992; Torgerson et al. 1994; Cramer et al. 1995; vanNoord et al. 1997). Socioeconomic indicators including level of education and income may affect age at menopause, but results are highly inconsistent, likely owing to a large number of uncontrolled confounding variables (Mohammad et al. 2004; Flint 1974; Beall 1983; Kaufert et al. 1987; Weinberg et al. 1989; Torgerson et al. 1994; Garrido-Latorre et al. 1996; Gonzales et al. 1997; vanNoord et al. 1997; Chim et al. 2002; Ku et al. 2004; Castelo-Branco et al. 2005; Walker et al. 1984; Okonofua et al. 1990; Gonzales et al. 1997; Reynolds and Obermeyer 2003; Mohammad et al. 2004; Kriplani and Banerjee 2005). Studies of birth weight and early postnatal growth suggest that developmental conditions can also affect age at menopause, but again, the aggregate results fail to point to a consistent relationship (Mishra et al. 2007; Cresswell et al. 1997; Hardy and Kuh 2002; Hardy and Kuh 2005; Tom et al. 2010; Sloboda et al. 2011; Elias et al. 2003).

Although continued research is needed to precisely define the major factors that influence menopause, it is clear that the timing and process of menopause are quite variable, and receive inputs from both external and internal environmental factors. The variability and heritability of the timing of menopause provide the raw material from which adaptations evolve, and part of the menopausal adaptation in humans appears to have been the retention of flexibility as part of an overall ovulatory predictive adaptive response mechanism, aimed at maximizing reproductive success. This flexibility may predispose different women to varying metabolic profiles after menopause, differentiating between levels of function and disease risk in the low-estrogen postmenopausal environment. As seen below, however, the evolutionary evidence also points to selection for extended somatic maintenance well-into the postmenopausal period, which may have also evolved as a method of increasing lifetime reproductive success.

Evolutionary Views of the Postmenopausal Lifespan: Paradox or Adaptation?

Before discussing the postmenopausal lifespan specifically, it is important to understand how biologists conceptualize the more general issue of aging, defined not simply as the accrual of time spent living, but as the loss of function in physiological systems with increasing age (Gavrilov and Gavrilova 2006). Aging in and of itself has long been a problematic concept for evolutionary biology (Weismann 1889; Medawar 1952), since theoretically the most reproductively successful organisms should be those that live forever and never cease to reproduce. Why should selection allow for functional deterioration and the regular occurrence of intrinsic causes of mortality (i.e. death due to failure of internal physiological systems rather than succumbing to extrinsic sources of mortality such as predation), rather than favoring self-maintenance in perpetuity, so long as organisms can avoid extrinsic mortality factors? Reproductive decline, in particular, requires explanation from the standpoint of natural selection (Williams 1957), since reducing fecundity to zero curtails reproductive success and is of no apparent selective value.

The prevailing theory of aging posits that the rate of intrinsic senescence in physiological systems results from the interaction between the population-specific rate of extrinsic-cause mortality (e.g., predation) and age-specific fertility potential (Medawar 1952; Williams 1957; Hamilton 1966; Charlesworth 1994). For any age cohort, the number of individuals left alive at a particular age to pass on genes, and the offspring those remaining individuals will potentially produce as a fraction of total offspring production for that cohort, will determine the force of selection of any gene acting at that particular age. At ages where most individuals are still alive and only a small proportion of potential offspring have been produced (such as shortly after puberty), selection to minimize intrinsic mortality is very high. In contrast, at ages where many individuals from a cohort have fallen to accidental death, predation, or other extrinsic factors, and when most of the likely offspring for that cohort have already been produced, then the strength of selection to maintain somatic integrity against intrinsic sources of mortality is much lower, since it has little effect on subsequent generations' ability to reproduce (Williams 1957; Hamilton 1966; Kirkwood 1977; Kirkwood 1980; Kirkwood and Holliday 1979).

Intrinsic challenges to somatic integrity arise as inborn biochemical byproducts of multiple physiological processes. For example, errors in cellular division, DNA replication, and protein synthesis (Kirkwood 1977; Kirkwood and Holliday 1979; Kirkwood 1980) can occur easily and challenge somatic viability, so that organisms invest considerable energy in mechanisms that increase accuracy in these processes. Such mechanisms are, however, only maintained as long as required to ensure that genes are successfully passed on to offspring at a population-specific rate. With increasing age, higher error rates in these processes lead to accumulation of dysfunction, disruption of physiological systems, and ultimately death (Kirkwood and Shanley 2010).

Challenges to somatic integrity can also arise as a result of antagonistic pleiotropy, where individual genes have positive effects early in life prior to and during the peak reproductive period, but have detrimental effects later in life (Williams 1957). This occurs because genes that promote viability and reproductive success early in life, when much reproductive potential remains, will be strongly selected for, but will be only weakly selected against if they exert negative effects later in life, when fewer individuals remain alive and little if any reproductive potential remains. In fact, menopause itself and the resultant low estrogen environment may be products of antagonistic pleiotropy (Crews 2003). Genes that promote higher circulating estrogen levels during the reproductive years have likely been selected for, since they play a major role in stimulating ovulation and thus raise fecundity. This same process, however, leads to more rapid depletion of oocyte stores, and therefore menopause, after which the ovary drastically reduces estrogen production and poses significant challenges to maintaining the somatic integrity of metabolic and cardiovascular systems.

This sharp increase in disease risk after menopause is in agreement with the overarching biological perspective on aging. Maintaining somatic viability after menopause is anathema to the evolutionary process, so much so that Hamilton (1966) predicted a so-called "wall of death", where intrinsic mortality would increase sharply upon the loss of reproductive capacity. In the same paper, however, Hamilton also noted that humans fail to meet the "wall of death" prediction, with much more gradual mortality rates past the age of menopause than expected from theory. Thus, the human postmenopausal lifespan and its relative rarity in the living world present a theoretical paradox for evolutionary biology. The problem lies in the apparent disconnect between the reproductive lifespan and somatic longevity: if differential reproductive success is the key functional outcome of evolution, then why would human females have evolved to maintain non-reproductive physiological function for decades past the termination of ovulation? The assumption that somatic and reproductive longevity are closely linked is at least implicit in the medical model of menopause and postmenopausal health.

Evolutionary biologists, on the other hand, have addressed several key questions in attempting to explain this paradox, the evidence for which is summarized below. First, are aging patterns in human somatic and reproductive systems disjointed only under conditions like those of industrialized societies, or is the pattern shared across diverse socioeconomic environments? Second, do humans differ from other animals, especially closely-related primate species, in the process of menopause and the postmenopausal lifespan? If the pattern of postmenopausal survival seen among women in industrialized society is in fact shared by women in other types of societies, and if this differs from other primates, how and why might the unique human pattern have arisen? Most importantly, what are the consequences of the answers the evidence provides for health expectations among postmenopausal women living today and in the future, and what do these data mean for the current prevailing medical model?

Comparative Demography

Demographic data show clearly that a high rate of multi-decade postmenopausal survival occurs in human populations living under non-industrialized conditions, and lacking access to medico-technological developments, thus challenging the medical model's notion that a long postmenopausal lifespan is only a recent, technological development. Changes in mortality and survivorship from 1850 to 2000 among females in the United States illustrate this point well. Whereas major changes in sanitation, hygiene and medical technology that occurred from the late 19th century to the present (Cutler and Miller 2005) have dramatically increased infant and childhood survivorship (Gray 1976), they have had much more modest effects on the postmenopausal lifespan. Survivorship rates from birth to age 15 years (a proxy for sexual maturity) and from birth to age 45 years (a proxy for age at menopause) have risen from ~ 65% to ~100% and from ~50% to ~95%, respectively, over the past 150 years (Figure 2). The proportion of women living to age 15 that then also survived to age 45, meanwhile, increased from ~70% to ~95%. Whereas life expectancy at birth has doubled over that same time period, the average amount of life remaining at age 45 has only increased from ~25 years to ~35 years, with most of the increase occurring after 1940 (Figure 3). Thus, despite modest gains in the past 150 years, even in 1850 prior to better sanitation, hygiene and

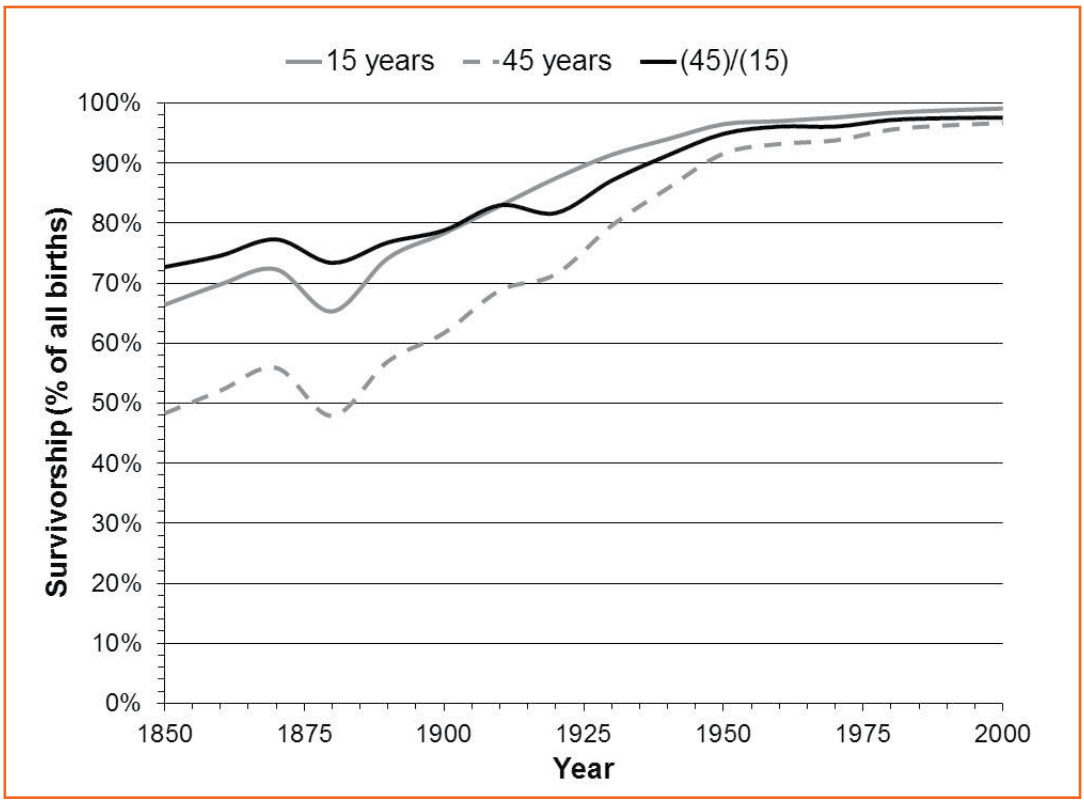

Figure 2: Survivorship from birth to age 15 years (solid gray line) and birth to age 45 years (dashed gray line); conditional survivorship from 15-45 years (black line: rate at which individuals who survived to age 15 also survived to age 45). Life table data for 1850-1890 (Haines 1994) and for 1900-2000 (Bell and Miller 2005).

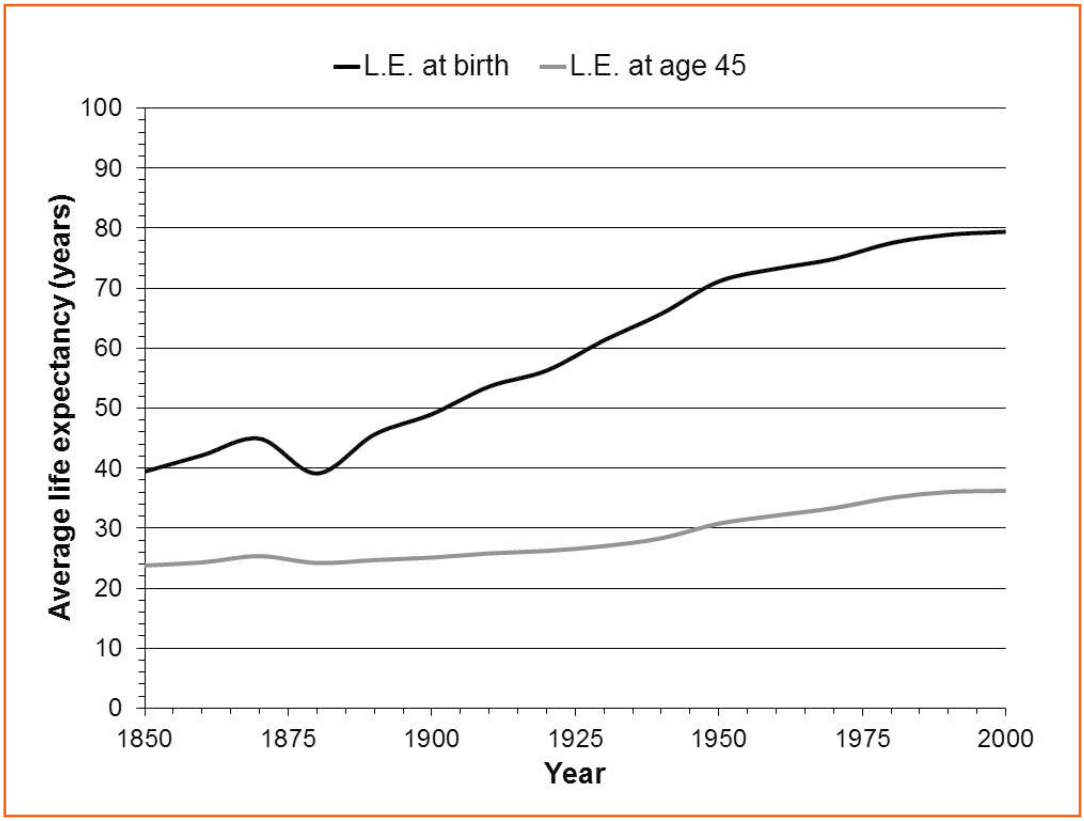

Figure 3: L.E. = Life expectancy, or average years of life remaining at a specific age. Life table data for 1850-1890 (Haines 1994) and for 1900-2000 (Bell and Miller 2005).

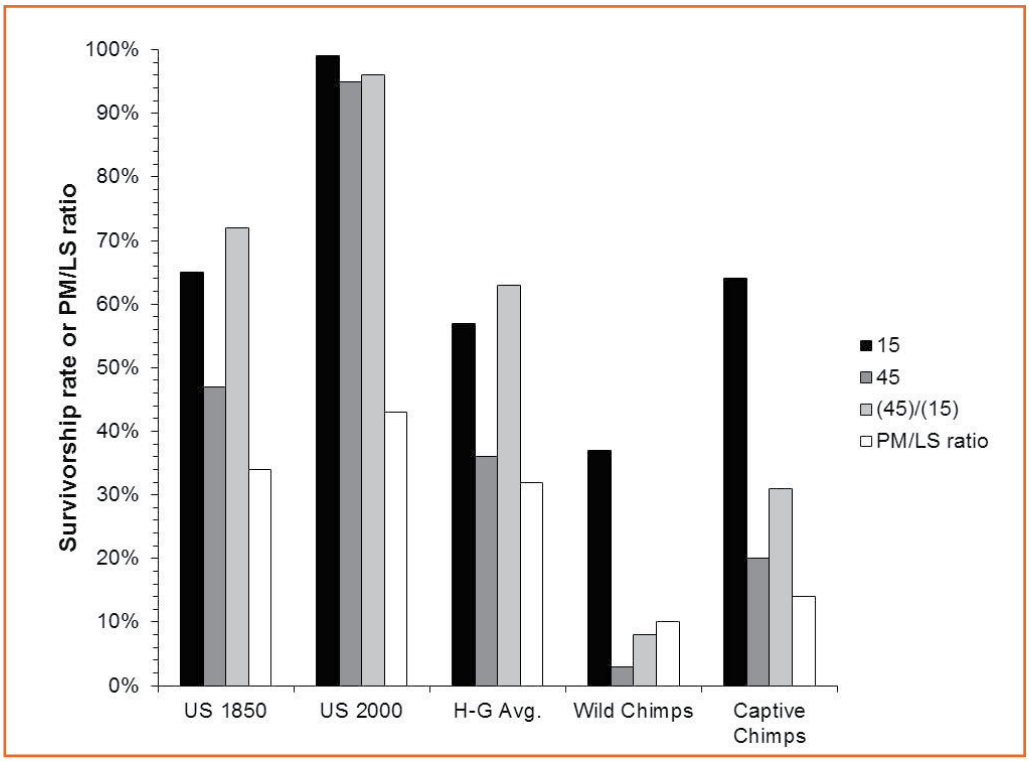

Figure 4: Survivorship from birth to age 15 years (black bars) and birth to age 45 years (dark gray bars); conditional survivorship from 15-45 years (light gray bars); and PM/LS ratio, the average postmenopausal lifespan (PM) remaining at age 45 years as a percentage of total lifespan (LS), calculated as e45/(e45+45), where e45 is the life expectancy at age 45 years. United States (US) data for 1850 (Haines 1994) and for 2000 (Bell and Miller 2005); hunter-gatherer (H-G) and chimpanzee data (Gurven and Kaplan 2007).

medical technology, over two-thirds of women fortunate enough to live to age 15 could expect to live to age 45, and to then survive an average of another 25 years, or 35% of the total lifespan.

Demographic data from five hunter-gatherer groups (Gurven and Kaplan 2007) support the idea that this pattern of postmenopausal survival is a widely-shared human trait. Despite immense diversity (Kelly 1995; Panter-Brick et al. 2001), hunter-gatherer societies share general characteristics that make them good models for mortality and survivorship in non-industrial, non-agricultural people. Although hunter-gathers are modern humans living in the modern world, and are thus not our "ancestors", the manner in which they live approximates in some critical ways the activity patterns and nutritional and reproductive conditions that may have prevailed over the vast majority of human evolutionary history. Hunter-gatherers obtain food from seasonally fluctuating wild plant and animal supplies, practice natural fertility, and lack reliable access to antibiotics, immunizations, water treatment, and other developments that increase life expectancy at birth in industrialized societies (Wood 1994; Panter-Brick 2002; Blurton Jones et al. 2002; Gurven and Kaplan 2007). As such, hunter-gatherers are expected to differ in terms of mortality and survivorship rates from populations living under agricultural and industrialized conditions.

Nonetheless, hunter-gatherer survivorship and life expectancy patterns are remarkably similar to the pre-industrial United States (Figure 4). In both cases, high rates of infant and juvenile mortality result in life expectancy at birth of less than 40 years and 57-65% survivorship from birth to age 15. For those who live to sexual maturity, however, ~65% will also reach age 45 and on average survive for another two decades. The data therefore strongly suggest that even under divergent socioeconomic conditions, a substantial proportion of all females born, and an even greater proportion of those who live to reproductive adulthood, share the expectation of multi-decade postmenopausal survival, amounting to on average a third of the total lifespan.

Comparative Biology

Whereas comparative demography points to biological similarities between all humans, regardless of socioeconomic environment, comparative biology can place the human pattern of postmenopausal survival in its proper evolutionary context. Note that Figure 4 also includes survivorship data from wild and captive chimpanzees (addressed in detail below). As our closest living relatives (Goodman et al. 1998), the panins (common chimpanzees: *Pan troglodytes* spp.; bonobos: *Pan paniscus* spp.) provide critical information as to which traits humans share with other primates, and which traits likely evolved since the split with our last common ancestor. Comparative biological data can address whether the human pattern of postmenopausal survival is unique or common among some larger taxonomic grouping. As shown below, although a few individual animals in many species may briefly outlive menopause (Cohen 2004) and some whale species exhibit a postmenopausal lifespan similar to humans (Kasuya and Marsh 1984; Marsh and Kasuya 1984; Marsh and Kasuya 1986; Olesiuk et al. 1990; Bloch et al. 1993; Martin and Rothery 1993; McAuliffe and Whitehead 2005; Foote 2008), overall humans are unique among mammals, including primates, and are evolutionarily derived relative to panins in having species-wide, common, multi-decade survival past menopause (Caro et al. 1995; Packer et al. 1998; Bronikowski et al. 2002; Pavelka and Fedigan 1999; Bellino and Wise 2003; Cohen 2004; Fedigan and Pavelka 2006).

The first question is whether human postmenopausal longevity has been achieved by foreshortening the reproductive lifespan, or by extension of the somatic lifespan relative to our last common ancestor. Overwhelmingly, the evidence supports the latter conclusion: modern humans share an average age at menopause with panins, but have the capacity to live well beyond menopause due to an extension of somatic longevity. Evidence for a shared human/panin menopausal process, and an age range for the cessation of ovulation of 45-55 years (Walker and Herndon 2008), comes from studies of both wild and captive chimpanzees and bonobos, with data on ovarian histology and reproductive hormones, menstruation and sexual swellings (swellings of the anogenital region that signify ovulation and are a proxy for estrogen activity), and age-specific fertility. First, from examinations of ovarian histology, humans and panins share a similar trajectory of oocyte reduction (Gould et al. 1981; Leidy et al. 1998; Hansen et al. 2008; Videan et al. 2008; Jones et al. 2007) that proceeds at essentially the same rate in both taxa (Jones et al. 2007). As in humans, the reduced oocyte population is related to hormonal changes in panins, and reproductive hormone profiles of panins from their late 30s to age 50 resemble those of pre- and perimenopausal women of the same age (Gould et al. 1981; Jurke et al. 2000; Videan et al. 2006). In terms of the effects of oocyte depletion on estrogenic stimulation of ovulation and fecundity, panin menstrual bleeding and sexual swellings, which reach peak frequency, regularity, and duration of maximal tumescence in the 20s, gradually become less frequent, more irregular, and shorter until eventually ceasing altogether in the 40s and 50s (Graham 1979; Gould et al. 1981; Jurke et al. 2000; Videan et al. 2006; Lacreuse et al. 2008). Thus, it appears that humans and panins share an ancestral pattern of oocyte reduction and a similar ovulatory "dose-response" to the small remaining population of sex cells during the fifth and sixth decades of life (Hawkes and Smith 2010).

Observations of panin age-specific fertility are consistent with the data on oocyte counts, hormone profiles, and ovulatory cycling, also suggesting an end to reproductive capacity occurring between the mid-40s and mid-50s. Past age 35, fertility declines substantially, and the proportion of pregnancies terminating in stillbirth or spontaneous abortion increases among captive chimpanzees (Graham 1979; Roof et al. 2005; Atsalis and Videan 2009b; Atsalis and Videan 2009a). Across a large sample from multiple wild chimpanzee study sites, there is a sharp drop-off in number of births per female per year between 40-44 years old, with a tiny fraction of females reproducing up to age 55 (Emery et al. 2007).

As in humans (den Tonkelaar et al. 1998; Vitzthum 2009), there is substantial individual and population-level variation among panins in the process of reproductive aging, the age at which ovulation ceases, and the termination of fertility (Boesch and Boesch-Achermann 2000; Videan et al. 2006; Emery et al. 2007; Lacreuse et al. 2008). For example, there are isolated reports of live captive births in the late 40s (Puschmann and Federer 2008). Whether this site-based variation is physiological or due to social differences in age-related mating behavior remains undetermined, but it is entirely possible that ecological factors affect reproductive parameters similarly in both panins and humans (Atsalis and Videan 2009b; Atsalis and Videan 2009a). Although this hypothesis has not been extensively explored (Herndon and Lacreuse 2009), it points to the possibility of a shared capacity for predictive adaptive responses in the reproductive systems of the human-panin clade, and thus the variability necessary for evolutionary differentiation by natural selection.

Overall, however, due to mortality patterns, menopause occurs in a very small proportion of all female panins

born, and then usually only very late in life (Herndon and Lacreuse 2009; Lacreuse et al. 2008), but there is also variation in the rate at which panins survive past menopause (Hill et al. 2001; Videan et al. 2006; Emery et al. 2007; Atsalis and Videan 2009b; Atsalis and Videan 2009a; Herndon and Lacreuse 2009). To some extent, mortality differences between captive and wild chimpanzees mirror differences between human populations living under different socioeconomic circumstances (i.e. reduced infant mortality and greater survivorship due to nutritional security and decreased risk of extrinsic mortality). Even in captivity, however, most benefits of reduced extrinsic-cause mortality accrue as increased survivorship to age 15 (a good proxy for sexual maturity in chimpanzees as in humans: (Hill et al. 2001), with a relatively small proportion of females born surviving past menopause, and then only briefly (see Figure 4). At wild sites, only 5% of all females born survive to age 45-50, with adult mortality rates rising between 25-30 years and spiking at and beyond age 40 (Hill et al. 2001). Of those surviving to sexual maturity, less than 10% survive to age 45, at which point they have only 10% of their total lifespan remaining (Gurven and Kaplan 2007)2007).

Although extrinsic mortality risk likely differs between wild panins and human hunter-gatherers, much of the inter-species difference in survivorship and longevity past menopause may result from differences in the rate of aging in somatic physiological systems. Critically, although overall mortality rates are lower in captive chimpanzees, they too experience a major increase in adult mortality at roughly the same age as wild populations, implicating intrinsic rather than extrinsic causes of death (Hill et al. 2001). While adult mortality rates increase exponentially and at roughly the same rate in both chimpanzees and hunter-gatherers, the increase in mortality due to intrinsic senescence begins ≥10 years earlier in chimpanzees (Gurven and Kaplan 2007). Wild chimpanzees begin to show signs of somatic aging beginning in their mid-30s, and though these outward signs of deterioration do not always correlate with incapacitation (Tarou et al. 2002; Finch and Stanford 2004), it seems plausible that they tend to succumb to intrinsic somatic senescence at earlier average ages than do humans. Possible mechanisms that explain these apparent species-level differences in intrinsic mortality and somatic longevity are discussed below.

Mechanisms for Extension of the Somatic Lifespan

In seeking explanations for the extension of somatic maintenance past menopause in humans, is it important to consider both the proximate physiological mechanisms by which cellular viability and functional integrity is maintained, as well as the ultimate evolutionary pressures most likely to have driven selection for an extended lifespan. The two main proximate causes of aging are the metabolic production of free radicals, which can oxidize and damage tissues and DNA (Harman 1956), and the accumulation of errors in DNA and its macromolecular end-products due to poor replicative control, leading to malfunctioning cells and the eventual interruption of physiological pathways (Orgel 1963; Orgel 1970; Kirkwood 1977; Kirkwood and Holliday 1979; Kirkwood 1980). Extending somatic longevity can be achieved by investing energy in mechanisms that reduce free radical production or activity, and that enhance the accuracy of protein synthesis and cellular replication.

Although somewhat limited, existing data on differences between humans and other primates in the expression of such mechanisms tends to point to greater maintenance of somatic integrity among humans. On a large scale, a reduced metabolic rate may limit free radical production and thus reduce oxidative damage (Ku and Sohal 1993; Barja et al. 1994), and humans have slightly lower than expected mass-specific metabolic rates compared to chimpanzees (Froehle and Schoeninger 2006). On a more molecular scale, blood levels of the free radical scavenger uric acid (Ames et al. 1981) tend to be higher in primates than in most mammals (Friedman et al. 1995), and are especially high in apes and humans (Wu et al. 1992; Oda et al. 2002). Humans and apes, to the exclusion of monkeys, also share mutations in the genes responsible for another group of free radical scavengers, the superoxide dismutases (Fukuhara et al. 2002), which are more active in longer-lived primate species and are most active in human organ tissues (Tolmasoff et al. 1980). In terms of DNA and fidelity in macromolecular synthesis and cellular replication, humans have higher rates of DNA repair than apes (Cortopassi and Wang 1996). Overall, then, in keeping with a longer lifespan, humans appear to have a greater physiological capacity for somatic maintenance via free-radical management and accuracy in macromolecule transcription and translation compared to other primates.

Recent research has expanded beyond the above domains to include comparative studies of other biomarkers of aging in primates. Perhaps the most extensive body of work has focused on dehydroepiandrosterone sulfate (DHEAS), an important androgen hormone with a wide variety of physiological roles, and protective effects against several metabolic and cardiovascular diseases (Lane et al. 1997). Multiple studies in rhesus monkeys (*Macaca mulatta*) and humans have demonstrated a decline in serum

concentrations of DHEAS with age (Kemnitz et al. 2000; Roth et al. 2002), and an association between higher levels of circulating DHEAS and slower rates of aging (Roth et al. 2002; Lane et al. 1997). Compared to chimpanzees, human serum levels of DHEAS decline more rapidly with age, but overall concentrations are two-to-three times higher in humans at any age, and only begin to drop into the high end of the chimpanzee range at ages older than 65 years (Blevins et al. 2013). Other great ape species exhibit even lower DHEAS concentrations (Bernstein et al. 2012), consistent with the idea that higher human levels have evolved since our split with the apes and promote a unique, extended period of somatic viability. Additional research in these areas should help to clarify additional proximate physiological mechanisms by which the human lifespan is extended compared to our close primate relatives.

In terms of ultimate evolutionary mechanisms for the extension of the somatic lifespan past menopause in humans, multiple theorists (Williams 1957; Hamilton 1966) have proposed the existence of a critical breach in the so-called "wall of death". In species with relatively low lifetime fertility and high levels of long-term parental care, infant and childhood survivorship can be enhanced by traits that increase the delivery of energy to offspring. This reproductive strategy is common to most primates, and mother-child food sharing is not uncommon among panins (Ueno and Matsuzawa 2004). Humans, however, represent an extreme version of the primate pattern, with offspring that are slow-developing, energy-needy, and highly nutritionally-dependent for a much longer period of time than panins. Thus, successfully raising human offspring to sexual maturity is an exceptionally energy-expensive endeavor (Gurven and Walker 2006). To address this challenge, humans also diverge from other primates in the frequency of food sharing, the quantity of calories shared, and the breadth of regular, dyadic food sharing relationships (Kaplan and Gurven 2005).

This pattern of food sharing greatly expands the range and frequency of opportunities to indirectly boost reproductive success (i.e., through means other than producing more of one's own children), since a proportion of one's genes are shared with even distant kin. Because of these potential inclusive fitness benefits via broad-based food sharing, the human lifespan is socially selected rather than individually selected. In other words, the human lifespan serves not only to facilitate one's own direct reproductive success, but also facilitates the reproductive success of close relatives, opening up the possibility of lifespan extension via kin selection and inclusive fitness effects (Carey and Judge 2001).

This is the crack evolution requires to pry open a hole in the "wall of death": in humans, long-term parental care as well as "…altruistic contributions due to post-reproductives…" (Hamilton 1966) serve as methods by which infant and childhood survivorship are increased (Williams 1957; Hamilton 1966; Lee 2008; Lee 2003). The importance of food sharing to human reproduction has thus likely added reproductive value to older adults, driving the evolution of extended somatic longevity and generating a self-reinforcing feedback loop with adult mortality. Increased fitness via food sharing at older ages would promote lower age-specific intrinsic mortality, which would in turn increase age-specific reproductive value as more individuals of older age would survive to obtain inclusive fitness benefits. This feedback would further increase the force of selection to maintain physiological function into later life (Carey and Judge 2001).

Providing for the reproductive success of offspring via food sharing plays a prominent role in hypotheses for the evolution of human longevity through effects on selective fitness. The "Mother Hypothesis" (Williams 1957; Hamilton 1966; Peccei 1995a; Peccei 1995b; Peccei 2001a; Peccei 2001b; Peccei 2005) and "Grandmother Hypothesis" (Blurton Jones et al. 2005; Hawkes et al. 1989; Hawkes et al. 1997; Hawkes et al. 1998; Hawkes 2003; O'Connell et al. 1999) both propose that the postmenopausal lifespan evolved because it allowed women to boost lifetime reproductive success. In the former, postmenopausal mothers benefit directly by eschewing risky new pregnancies that could jeopardize the survival of existing dependent offspring. In the latter, postmenopausal women indirectly increase fitness by sharing food to promote grandchild production and survival.

Several lines of evidence support the positive effect of postmenopausal women on the reproductive success, growth, development, and survival of their children and grandchildren. In pre-industrial and modern non-industrial agricultural societies, a maternal grandmother's presence promotes weight gain in grandchildren and increases lifetime fertility in daughters (Mayer 1981; Mayer 1982; Turke 1988; Sear et al. 2000; Sear et al. 2002; Voland and Beise 2002; Lahdenpera et al. 2004; Fox et al. 2010). Hadza hunter-gatherer grandmothers target hard-to-obtain, valuable resources that their reproductively-active daughters are not as able to procure due to the constraints of pregnancy, nursing, and childcare (Hawkes et al. 1989; Hawkes et al. 1997; Hawkes et al. 1995; Crittenden et al. 2009). As such, childhood weight gain is positively correlated with the amount of time maternal grandmothers living in the same camp spend foraging

(Hawkes et al. 1989; Hawkes et al. 1997).

Mathematical models also tend to find both the mother and grandmother hypotheses evolutionarily plausible. Maternal mortality has a strong enough effect on the survivorship of unweaned children, for example, to drive the extension of the lifespan past the end of fertility (Shanley and Kirkwood 2001; Sousa 2003). The mother hypothesis is, however, weakened when other potential offspring providers (e.g., fathers, aunts, uncles) are present to feed weaned children (Shanley and Kirkwood 2001; Shanley et al. 2007; Lahdenpera et al. 2011). Inclusive fitness effects accruing to grandmothers who participate in intergenerational food-sharing could also have driven lifespan extension (Shanley and Kirkwood 2001; Lee 2008; Lee 2003), with the greatest contributions to grandchild survival occurring during the critical period of 1-2 years old when infants are still nursing and on the cusp of being weaned (Shanley et al. 2007). This suggests that provisioning of adult daughters to subsidize nursing energy needs may have served as the primary role for postmenopausal women that initially selected for a longer lifespan. If women tend to have their last child at ~35 years of age (Kelly 1995), then a lifespan lasting seven decades allows a grandmother to live long enough to help successfully wean her youngest daughter's youngest child.

Though many of the specific tenets of these two hypotheses differ, they share one crucial argument: active foraging and food sharing in support of offspring production and viability have imbued humans with the potential for reproductive value at much older ages than expected from theory, or from comparative data on panins. By extension, these hypotheses predict that selection has favored human phenotypes that retain the capacity for somatic maintenance at those older ages. As such, the human postmenopausal period is interpreted as an evolved, species-typical life history stage, as integral to the human life course as adolescence or childhood, and characterized by low rates of intrinsic senescence in physiological systems, at least into the seventh decade of life (Gurven and Kaplan 2007). This life-history interpretation informs the study of menopause and the postmenopausal lifespan from the perspective of evolutionary medicine. Following these evolutionary hypotheses, it seems reasonable to expect that the evolutionary extension of somatic maintenance should foster low rates of chronic and degenerative diseases, and promote overall good health during the postmenopausal life history period, at least into the seventh decade of life. Given this expectation, it becomes critical to evaluate the potential lifestyle and behavioral patterns among women in industrial society that may predispose them to postmenopausal disease by diverging sharply from conditions under the natural fertility foraging regime that has likely dominated human evolutionary history.

Evolutionary expectations for postmenopausal health

In seeking lifestyle factors that might underlie postmenopausal disease risk in industrialized societies, it is important to first examine the prevalence of the same diseases among older women in hunter-gatherer societies. Overwhelmingly, hunter-gatherers without access to medical care appear not to experience the high rate of decline in early postmenopausal somatic maintenance seen in industrialized populations. Degenerative diseases in foraging populations (as far as they can be diagnosed) are extremely rare, accounting for less than 3% of deaths before age 60 (Howell 1979; Hill and Hurtado 1996; Gurven and Kaplan 2007). Although degenerative diseases become more common as causes of death after age 60, obesity, hypertension, heart attack and stroke are still very much the exception (Eaton et al. 1988; Gurven and Kaplan 2007). Anthropometric work among the Hadza demonstrates that average body fat percentage remains constant at about 19% in women from age 18-75 (Sherry and Marlowe 2007), in stark contrast to the increase in body fat with age in postmenopausal women from industrialized societies (Heymsfield et al. 1994). Anecdotal and empirical evidence also points to the maintenance of physical vigor in old age in foragers (Blurton Jones et al. 2002; Hawkes et al. 1989; Walker and Hill 2003), including the observation that older Hadza women tend to work longer and perform difficult foraging tasks more frequently than women of reproductive age (Hawkes et al. 1989; Hawkes et al. 1997). These data show that the metabolic syndrome is rare among hunter-gatherers, likely related to an absence of age-related body composition change and continued physical activity. Maintenance of somatic physiological systems well past menopause appears to be the hunter-gatherer norm, with an absence of the related high mortality rates that would be present in industrialized society without advanced medical treatment (e.g., insulin for diabetes).

The potential cause(s) of postmenopausal health differences between women living in industrialized vs. hunter-gatherer societies must be understood from a biocultural and evolutionary perspective as a consequence of the divergent conditions under which they live. As stated previously, probably the most important physiological change with menopause is the reduction in estrogen levels. This "hyposteroidal" physiological environment is thought to cause disease by undermining the proper functioning of various somatic physiological systems, especially those related to metabolic health. This hypothesis, however, is

contrary to expectations if the postmenopausal lifespan indeed represents an evolved life history period. According to Austad (Austad 1997), "… if menopause is an adaptive physiological state molded by evolution… then natural selection would presumably have tailored postreproductive physiology to the hyposteroidal state…" In other words, if selection has promoted the extension of somatic maintenance past menopause, then one would expect postmenopausal physiology to retain functional capacity despite reduced estrogen levels.

Rather than see this necessarily as a contradiction, it is possible that factors other than just a reduction in steroid hormone levels affect the ability of metabolic systems to maintain their operations after menopause. Alternatively, if lifestyle factors elevate estrogen levels during the premenopausal period in women living under industrialized conditions, the magnitude of hormonal change across the menopausal transition may be greater than in women living in subsistence-level societies, with possibly important physiological consequences (Pollard 2008). Given that physiological systems act not in isolation, but interact and affect one another, it seems reasonable that the physiological effects of behavior and experiences during pre-menopausal life could extend into the postmenopausal period. In the same way that it is reasonable to suspect that selection would have molded human postmenopausal physiology to operate under hypersteroidal conditions, it is also reasonable to predict that the environment (both internal and external) under which individual metabolic physiological systems develop and operate across the reproductive lifespan might predispose those systems to function better or worse in the postmenopausal environment. If this is the case, we might then expect the prevailing conditions of hunter-gatherer life to be integral in preparing metabolic physiological systems for operation in the low-estrogen postmenopausal milieu. From this perspective, cultural variation in subsistence practices and reproduction may be particularly important.

The experience of women in industrialized countries differs in a variety of ways from women's lives in modern hunter-gatherer societies, and many of these same differences likely distinguish industrialized life from conditions during the initial evolution of the postmenopausal life history period. For one, decreased infant and childhood mortality may remove biological filters on survival, thereby promoting higher adult disease risk if phenotypes prone to pre-adult mortality also tend to be prone to chronic disease (Hawkes 2010; Forbes 1997). Reproductive history also diverges between women in low-fertility industrialized populations vs. women practicing natural fertility. In the latter, higher birthrates, longer nursing, and more frequent lactational amenorrhea (Wood 1994) mean fewer lifetime ovulatory cycles and lower exposure to estrogens, possibly related to decreased risk for reproductive cancers (Henderson et al. 1985; Eaton et al. 1994; Bernstein 2002; Yang and Wu 2005; Yang and Jacobsen 2008). The same factors, given their relationship to estrogen levels, could also relate to metabolic function in the low-estrogen, postmenopausal physiological environment (Xue and Michels 2007).

Diets in industrialized societies, too, differ greatly from the seasonally-variable wild plants and animals that constitute hunter-gatherer diets, which generally tend to be higher in fiber and low in fat (Cordain et al. 2000; Cordain et al. 2002; Eaton and Konner 1985; Eaton et al. 1997; Konner and Eaton 2010). Disparities in consumption of fiber, simple carbohydrates, and fat likely relate to higher metabolic disease risk in industrialized populations, partly through effects on estrogen levels and related metabolic processes. Contrary to the estrogen-deficiency model of postmenopausal metabolic disease, however, characteristics of the typical hunter-gatherer diet actually tend to decrease estrogen levels. Greater dietary fiber intake, for example, is correlated with lower concentrations of estrogen and estrogen metabolites in the blood (Sowers et al. 2006; Wayne et al. 2008; Gaskins et al. 2012), as are low fat diets (Gencel et al. 2012; Nagata et al. 2005; Turner 2011). In addition to greater estrogen from low-fiber/high-fat diets, women in industrialized societies may add more estrogen to the circulation from consumption of dairy products, in particular from dairy cattle bred to lactate year-round (Davoodi et al. 2013). According to the model of low estrogen as a deficiency disease, a typical low-fat, high-fiber, and dairy-free hunter-gatherer diet should increase risk for metabolic disease vs. a high-fat, low-fiber Western diet. This is, however, demonstrably not the case, and the evolutionary perspective suggests that dietary elevation of circulating estrogen during the premenopausal period may in fact have a carry-over effect on postmenopausal metabolic physiology that increases disease risk.

A fourth factor is the substantial difference in physical activity between hunter-gatherer women, who engage in regular, vigorous physical activity to obtain food, vs. the generally more sedentary women of industrialized societies (Hayes et al. 2005). Low exercise levels result in generalized health problems (Cordain et al. 1997; Eaton and Eaton 2003; Chakravarthy and Booth 2004), but the particular relationship between exercise, estrogen, and metabolic physiology may put inactive postmenopausal women at even greater risk for metabolic

and cardiovascular diseases (Major et al. 2005; Torrens et al. 2009). In premenopausal women, higher levels of exercise correlate with suppression of estrogen levels (Jasienska et al. 2006), and in extreme cases lead to athletic amenorrhea and interruption of ovulation (Mcardle et al. 2001). Higher overall levels of estrogen compared to men, however, mean that women tend to burn more fat for energy both at rest and during exercise (Tarnopolsky 2008). This metabolic difference fades with menopausal hormone changes (Isacco et al. 2012), possibly making postmenopausal women prone to fat gain. Low activity combined with low estrogen levels after menopause may also limit the body's ability to build cardiovascular and muscular adaptations to exercise (Grounds 1998; Grounds 2002; Harris 2005), potentially blunting the health benefits of exercise interventions in sedentary postmenopausal women. These factors suggest that postmenopausal women are more susceptible to metabolic diseases regardless of exercise levels. Recent work shows, however, that resting energy expenditure, a fundamental indicator of metabolic function, has a dose-response relationship with exercise in postmenopausal women (Froehle et al. 2013). Thus, exercise after menopause appears to have metabolic effects that can compensate for the consequences of lowered estrogen (Spangenburg et al. 2012).

Researchers have only recently begun to focus on how these lifestyle and behavioral factors affect metabolic disease risk and prevalence specifically in the low-estrogen postmenopausal physiological context. The combined evidence provides some interesting leads, though, and points to potentially promising avenues for continued research. A common feature of the reproductive, dietary, and activity differences between women in industrialized societies and women in subsistence-level, natural fertility societies, is their effects on premenopausal estrogen levels. High lifetime fertility and breastfeeding, a diet high in fiber and low in fat, and greater levels of activity all characterize the hunter-gatherer lifestyle, and all have the common effect of suppressing estrogen levels during the reproductive years. The opposite is true of the typical lifestyle in industrialized societies, where women are subject to much higher estrogen exposure over the premenopausal lifespan. The difference may be critical to postmenopausal physiological function given the key role of estrogen in metabolism. It is possible that lower estrogen levels during the premenopausal period "prime" metabolic systems to function under that hormonal regime, so that after the menopausal reduction in estrogen the body maintains greater capacity to function normally, even in the presence of low circulating estrogen.

In contrast, if the body adapts to high estrogen levels prior to menopause, the magnitude of the menopausal drop in estrogen and subsequent low-estrogen postmenopausal environment may more greatly disrupt metabolic pathways, resulting in higher disease risk without substantial intervention. This hypothesis has already been presented with regard to bone disease (Pollard 2008; Galloway 1997), and may very well also extend to metabolic disease. Additionally, if the degree of hormonal change around the time of menopause is important to postmenopausal metabolic function, then lifestyle interventions that seek to lower estrogen levels need to begin as far before menopause as possible (Spangenburg, Wohlers et al. 2012; Appt and Ethun 2010; DiPietro 2010). Some speculations as to possible areas of non-pharmacological, behavioral modes of prevention are discussed below.

Conclusion

Overwhelmingly, the evidence from comparative demography and comparative biology contradict the tenets of the medical model of menopause and the postmenopausal lifespan. Rather than being a recent technological development in industrialized societies that extends the lifespan past its evolutionarily intended endpoint, the postmenopausal period is shared broadly across a wide range of human societies living under widely varying nutritional and medical conditions. The shared age at menopause between humans and panins, coupled with greatly reduced mid-life adult mortality rates in the former vs. the latter, also suggest strongly that the postmenopausal lifespan has evolved not by early termination of the reproductive period, but instead by lengthening the lifespan of somatic physiological systems beyond a retained ancestral age range for menopause. In short, multi-decade postmenopausal survival that accounts for roughly one-third of the total lifespan is an evolved, species-defining trait in humans, and should be considered a normal life history phase akin to childhood, adolescence, or reproductive adulthood.

Whereas the postmenopausal lifespan is universally experienced across societies, however, it does not universally represent the initiation of a period of metabolic disease risk and decline. Given evidence that the lifespan has been selected to last past menopause, the low-estrogen deficiency disease model that prevails in Western medicine is flawed. Rather than a period of uncontrolled disruption to metabolic homeostasis, the evolutionary approach proposes that metabolic physiological systems have evolved to maintain sound function after menopause, despite decreased circulating estrogen. Instead of focusing on prescribing estrogen to cure a perceived deficiency,

more effective strategies to minimize postmenopausal metabolic disease among women in industrialized countries should follow from a better understanding of the conditions under which human physiology largely evolved. Four key areas of continued research can potentially contribute to developing preventive strategies by addressing the effects of lifestyle and behavioral factors on estrogen levels during premenopausal life, their effect on the magnitude of the menopausal reduction in circulating estrogen, and the consequences for metabolic function after menopause. These areas are: 1) the effects of decreased infant and child mortality on adult disease risk; 2) the effects of reproductive patterns on estrogen levels; 3) the effects of diet on body composition and metabolic function in relation to estrogen; and 4) the effects of physical activity on metabolic function, again with regard to estrogen physiology.

First, there are clearly ethical concerns with advocating greater childhood mortality or interfering with individual women's choices about reproduction, contraception, or family planning, and so preventive strategies deriving from the first two areas above are unlikely to be developed (nor should they be, in this author's opinion). Studying the effects of early life experiences on later life physiology, however, as well as genetic predisposition to certain conditions, may be fruitful in identifying women who may be at greater risk of developing metabolic diseases after menopause. Such information would be useful in tailoring preventive exercise and dietary programs early in life so as to maximize postmenopausal health.

Certainly, advocating diets higher in fiber and lower in many kinds of fat, along with greater levels of physical activity is important not only to general health, but also specifically for metabolic health after menopause. Initiating these habits as early as possible in the lifespan may be critical to developing a metabolic adaptation to lower levels of estrogen, which may then prime these physiological systems to maintain function after menopause. There is already some interesting thought in this direction (Pollard 2008; Spangenburg et al. 2012), and continued work in this vein has great promise in reducing the prevalence of mid-life metabolic disease among women in industrialized societies. Overall, it is critical to understand menopause in its broader evolutionary and biological context so as to recognize that life past menopause is not a disease, but has likely been an integral part of the lifespan of most women for millennia (Blurton Jones et al. 2002; Caspari and Lee 2004). Using the framework of evolutionary medicine to study menopause offers the opportunity to develop lifelong preventive strategies that ensure postmenopausal health, and that have the potential to change societal, and perhaps more importantly for health, medical perceptions of menopause.

Notes

1 This paper focuses on "natural menopause," the result of innate physiological processes, as opposed to surgical menopause, which is a consequence of various surgical procedures, including hysterectomy and oophorectomy.

2 National Library of Medicine: http://www.nlm.nih.gov/medlineplus/menopause.html (May 21, 2013); National Institute on Aging: http://www.nia.nih.gov/health/publication/menopause (May 21, 2013); Mayo Clinic: http://www.mayoclinic.com/health/menopause/DS00119 (May 21, 2013).

3 National Health and Nutrition Examination Survey, obtained from National Center for Health Statistics, Health Data Interactive, http://www.cdc.gov/nchs/hdi.htm, accessed May 21, 2013.

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Active Aging: Hiking, Health, and Healing

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Abstract

This article examines the illness and recovery experiences and perceptions of physically active middle aged and older adults participating in hiking groups. These perceptions are examined within the local milieu of their group and the larger social context of biomedical norms of healthy older bodies. Discourse on the body was viewed through the lens of medical anthropology and data were analyzed using embodied ethnography. There were 15 participants (53 percent female) and all were of European descent. The hiking group provided participants with meaningful spaces and places where they could explore all aspects of their health with the support of others who had undergone similar life experiences. The physical activities they engaged in as a group were therapeutic and transformational for several members. Their group activities created a deep sense of community and aided in their healing processes. Holistic health programs such as hiking groups could provide an alternative or ancillary treatment options. However, cost, location, opportunities for socialization, and the physical abilities of potential participants should be seriously considered before adopting a hiking program for this demographic.

Active aging, health, middle-aged, older adult, hiking, embodied ethnography

Chloé's Story

In early October of 2010, R (lead author) arrived in a parking lot at 6:30 am to meet the group of middle-aged and older adult hiking enthusiasts he had been hiking with once a week since August. All the hikes were located in provincial or national parks in the Rocky Mountains of southwestern Canada. On this outing, R was introduced to a new hiking group member, Chloé1. Her story touched on common themes identified in this ethnographic study and is illustrative of a collective experience. The following is R's journal entry from that day:

> It was a very large group today with 26 people. The large number of people, according to one of the hikers, was due to an optimistic forecast of sunny and warm weather, in contrast to the rain and snow we've had for the past couple of weeks. Also, the hike did not have much in the way of elevation gain or distance; therefore, it was not excessively strenuous for the physically compromised and promised contrasting views of the mountains to the west and open prairie to the east.

Chloé was a 58-year-old retired teacher and cancer survivor. A few years ago, when she was diagnosed with breast cancer, she decided to be as proactive as possible and discovered research suggesting that exercise, specifically heavy aerobic exercise, could prevent cancer from returning. She acted quickly and started to walk every morning for at least one hour, searching out challenging, hilly terrain.

Chloé believed that her active lifestyle contributed to her healing process; the walks eased some of the negative side effects of chemotherapy and improved her overall sense of wellbeing. It also aided in maintaining a healthy body weight vital, she believed, to her recovery from six cancer related surgeries. She did take painkillers after her first surgery – her nurse was a former student and she followed her advice – but suffered "terrible side effects." She decided not

to take the painkillers after her next and consecutive surgeries and discovered that she did not experience a lot of pain and healed quickly. Chloé had met other cancer patients who were inactive and overweight and found that they had difficulties healing. She attributed her lack of pain and quick healing to her vigorous morning walks.

Chloé felt lucky:
"[I]t came at a nice time, if you can have a nice time for cancer [laughs]. My son was in grade 12…. So that six months that I was off, happened to be his last semester at school. He'd be finished at two. He would come home every day and we would cook supper together. So, that was five months of extra time that I'd never ever would've had otherwise. He also went for walks with me [laughs]."

Chloé's story is thick with emotion. She was unwilling to allow her sickness to provide the narrative for her treatment and healing. Chloé discovered that the simple act of walking in a natural setting helped her manage her cancer, bond with her family, and opened her up to future adventures and experiences.

Some of the psychosocial and physiological benefits Chloé experienced through her physical activities (PA) have been well documented in biomedical research. PAs, such as hiking and walking, have been shown to decrease the risk or reduce the symptoms of several potentially debilitating health conditions such as coronary heart disease, type 2 diabetes, breast and colon cancer, and depression (Paterson and Warburton 2010:38; Physical Activity Guidelines Advisory Committee 2008; World Health Organization 2010:8-10). There is also ample research that demonstrates the psychosocial and physiological benefits of PA in aging populations (Atalay and Cavlak 2012:71-79; Langlois et al. 2013:400; Paterson and Warburton 2010:38; Teixeira et al. 2013:307). It is clear that aging populations can benefit from PA, but research conducted by Katz (2000:135-152), Davey and Glasgow (2006:21-27), Asquith (2009:255-269), and Tulle (2008:340-347) suggests that the benefits are sometimes overstated to the point where PA is depicted as a panacea that can counteract the effects of aging. The authors argue that the buoying up of PA as a cure-all fails to recognize the challenges some individuals face later in life that are outside of their control, such as financial insecurity, congenital or genetic conditions, or poor life choices earlier in life (Asquith 2009:255-269; Davey and Glasgow 2006:21-27). Asquith also points out that there is a financial cost to social PAs that not all older adults can afford: transportation to and from a physical activity centre requires money for fuel, public transportation, or a taxi (Asquith 2009:255-269). Furthermore, research conducted by Litwin and Shiovitz-Ezra (2006:225-242) into the association between activity and wellbeing suggests that the quality of social relationships was more highly correlated with wellbeing in Israelis over the age of 60 than activity. The authors argue that the failure to address the complexities of successful aging could result in increased marginalization. This study will attempt to address some of the complexities of successful aging through the research method of embodied ethnography.

Hiking groups in particular offer unique opportunities for aging populations that can supplement or enhance the benefits of PAs previously discussed. Research on middle-aged and older adults from North America and Sweden showed that meaningful activities like hiking provided opportunities for creativity, achievement, nurturing competency, and social interaction (Reichstadt et al. 2010:567-575; Silverstein and Parker 2002:528-547; Tang et al. 2010:603-612). Furthermore, these activities contributed to a positive sense of wellbeing and life satisfaction among participants. Research specific to hiking activities for aging populations has provided insight into motivation (Sugerman 2001:21-33), perceptions of age and aging (Weiss and Tomasa 2010:473-475), quality of life (Lloyd and Little 2005:147-181) and successful aging (Boyes 2013:644-665). Participation in meaningful activities like hiking allows individuals to display their abilities, explore their potential, and form unique identities (Stebbins 1982:251-272; Stebbins 1992). It is the formation of unique identities through hiking activities in middle-aged and older adults, as they relate to age, health, and healing, that will be the focus of this study.

The relationship between PAs and the subjective experiences of the individual have not been extensively explored in the literature on aging. Pheonix and Grant (2009:362-379) and Grant and Klug (2007:398-414) argue that literature on PA and the aging body has been primarily focused on quantitative data collection methods, as indicated by the above literature. The authors suggest that these forms of knowledge do not provide a complete picture of the complex relationships between the aging body and PA. Qualitative research conducted by Laz (2003:503-519) supports this argument. The author found that her sample of adults over the age of 50 (n=15) discussed specific dimensions of embodiment (activity, health, energy, appearance, and illness) when they considered their age (Laz 2003:503-519). Furthermore, Laz's participants made social comparisons associated with age and ability when interpreting their bodies. Laz's study demonstrates the unique information qualitative research into aging, specifically embodiment, can produce. However, there is a paucity of research investigating how the embodiment of specific PAs, such as hiking and walking, form perceptions of aging, health, and healing.

This article addresses this gap in the literature through the qualitative research method of embodied ethnography. Drawing on four months of participant observation by the lead author "R," we describe how the perceptions of aging, health, and healing are formed, transformed, maintained, and embodied through hiking activities. Our analysis provides insight into the individual, social, and political forces influencing how the aging body in this habitus is experienced. Finally, our research unpacks the complexities associated with PAs, socialization, and the perceptions of aging among older adults.

Age, Health, and Healing

The youthful, physically active body has become the ideal body image in North American culture (Dworkin and Wachs 2009). The obsession to obtain this body has undergone intense scrutiny since Robert Crawford (1980) introduced the concept of Healthism. Crawford asserts that capitalism co-opts "health" for profit by elevating the ideal and morally superior, "normal," healthy, youthful body above the undesirable and morally corrupt, "abnormal," unhealthy, or "old-looking," body. Faircloth (2003) suggests that the dominant forms of visual media in our health, youth, and beauty obsessed culture project constant reminders that a beautiful body is the key to happiness. Consumer culture propagates and enforces insecurities created by our self-preservationist culture to promote strategies to counteract the perceived deterioration and decay associated with aging (Faircloth 2003). The end result is a consumer obsessed with purchasing the latest products and services for obtaining and maintaining the ideal body (Dworkin and Wachs 2009; Powell and Longino 2001:199-207).

Biomedical research has increased the divide between young and old bodies. Glenda Laws (1995) argues that essentialism in biomedical research attempts to assign universal biological causes to the aging body. Laws suggests that this single-minded approach rejects the socially constructed intricacies of aging. Therefore, the categorical assignment of biological changes creates a negative image of the aging body: it is an unattractive body increasingly susceptible to disease, loss of control, and ultimately, death (Vincent 2003:675-684; Vincent 2006:681-698). However, there has been pushback against narratives of the aging body involving the medicalization of non-life-threatening health issues associated with aging. Wentzell (2013:3-22) investigated Mexican men's resistance to using erectile dysfunction (ED) drugs. The author found that the health narratives supported by medical and pharmaceutical companies stressed the importance of penetrative sex for healthy aging in men. The men's decision making process on whether or not to begin ED treatment involved discussions with their wives and doctors and they also considered the cost and safety of treatments. Wentzell discovered that the men's decisions were swayed by their doctor's silence on the issue and their wives' advice that they should respond to their ED by adopting an age appropriate sexuality. Several of the men rejected the ED drugs and adopted a life path valued by their community in which they became more family oriented (Wentzell 2013:3-22).

The medicalization of aging did cause us to consider how and if we categorize our participants by age. Initially we used Statistics Canada's (2007) and the Centers for Disease Control and Prevention (2011) definitions of middle-aged as 45-64 years of age and older adult as 65 years or older. We were uncomfortable applying essentialized categories to our participants since experiences of aging are arguably more informative for understanding variations in meanings of an aging body. In other words, universal aging process are arguably not uniform, but vary by sociocultural expectations and individual experiences (Featherstone and Hepworth 1998:147-175). Marshall and Katz (2012:222-234) argue that the traditional use of chronological age as a description of the aging process does not provide an accurate description of the aging experience due to changes in traditional roles as a result of increased longevity. However, as Laz (2003:503-519) points out, we do have an "age" which is culturally constructed and provides a point of reference for how we experience our bodies as we age. Therefore, this study will focus on the dimensions of embodiment (as they relate to age, health, and healing) we discover through our embodied ethnography approach, which is the collection of data through the physical presence, and participation, of a researcher to study the processes at work in the everyday experiences of a group (Bourdieu 1977; Csordas 1990:5-47; Scheper-Hughes and Lock 1987:6-41; Turner 2000:51-60).

Participant discourses on health and healing will be analyzed from a medical anthropology perspective where health is viewed as a culturally constructed ideal of well-being and healing as both a sufferer and medically defined resolution to a sickness where the sufferer is restored to wholeness (Janzen 1981:185-194; Janzen 2002; Scheper-Hughes and Lock 1987:6-41). In this study, health and healing will be defined by our participants' ideas, actions, representations, and the institutions that they view as embodying health (Scheper-Hughes and Lock 1987:6-41).

Hiking

Hiking in the context of this study is defined as walking in a mountain setting. We will use Ingold's (Ingold 2004:315-340; Ingold 2010:S121-S139) description of walking as a rhythmic activity with a "pattern of lived time and space" where walkers are continually adapting, and fine-tuning, their gait to the environment (332). According to Ingold, walking requires a high degree of intelligence that incorporates all the experiences of being human. Furthermore, the author argues that it is the landscape that shapes how people experience their environment and not vice versa. Ingold suggests that we create a vast network of personalized trails through our nuanced physiological responses to our routes of pedestrian travel in landscapes that change with the seasons and shape our experiences: it is how we explore our world, physical body, and socially constructed self (2004:315-340; 2010:S121-S139). Ultimately, walking provides a lens through which to view and interpret our life experiences. It is "a way of thinking and knowing" (Ingold 2010:S135) where walkers must be fully engaged with their body to respond to an ever-changing environment and the other walker around them (Csordas 1993:135-156).

Methodology

The data for this study were collected during R's four months' participation (August to November, 2010) in the hiking and walking activities of three different groups from the town of Foothill: The Women's Walking Group, Men's Walking Group and the Foothill Hiking Club (FHC). This article will focus on the FHC. R used his body as a "tool of inquiry and vector of knowledge" (Wacquant 2004:viii) and it served as one mode of data collection. R has been engaged in outdoor activities for over 20 years (he was 41 at the time of data collection) and grew up hiking, climbing, and skiing in and around the locations for this study. His experiences of hiking provided R with some cultural capital with participants and insight into the activities of hiking.

R's data on his own experiences of hiking provide insight into how hiking feels, but he also used ethnographic methods of observation (to document how participants interacted with their environment and each other) and interviews (performed while engaged in hiking activities and audio recorded) (Angrosino 2007; O'Reilly 2004). Interviews were unstructured and allowed participants to reflect on their lives and activities and lasted between five and 50 minutes depending on the topic (i.e. if R needed a quick clarification on a theme or if he had to conduct a full interview). The interviews included questions about participant's hiking activities and experiences, relationships with other members and family, work history, health history, and their age. Interviews were then transcribed and coded. Data collection and analysis proceeded together and were an iterative process. Once a theme was identified, it was incorporated into future interviews and validated by re-interviewing participants who preceded the theme's identification. Themes were also compared against the other forms of data collected to ensure their validity.

Our research group consisted of seven participants who were middle-aged (75 percent female; female mean age was 58 and male mean age was 61; age range was 51 to 63) and eight older adults (29 percent female; female mean age was 66 and male mean age was 71; age range was 66 to 78). The total number of participants was 15 (53 percent female; mean age 64; age range was 51 to 78). All participants were of European descent with 22 percent at low income level, 56 percent at low-middle income level and 22 percent at upper-middle or higher income levels (Statistics Canada 2013). Participants were chosen using convenience sampling (Bernard 2012) where participants are chosen in the field according to availability and willingness to participate as well as their representativeness of the social phenomenon being researched. Thus participants were members of the FHC, and actively participated in hiking activities during the ethnographic fieldwork. Theoretical sampling (Eisenhardt and Graebner 2007:25-32) was also used to ensure equal representation from both genders; however, more women than men participated in hikes during the research period.

Our findings are organized beginning with a brief description of the town of Foothill and history of the FHC. This will be followed by R's experiences on his first hike. The study is then divided into sections that discuss the dimensions of embodiment through the habitus of hiking: resistance to medicalization and healthy bodies and healing.

Foothill Hiking Club

Foothill has a population of 13,760 and it is considered a bedroom community of a major city, with approximately 40 percent of the labour force working in areas outside of Foothill. Thirty-seven percent of Foothill's population are over 45 years of age (approximately18.8 percent female

and 18.6 percent male) and nine percent were older than 64 (five percent female and four percent male). Therefore, approximately 46 percent of Foothill's population was over the age of 45. The average household income for the community was in the upper-middle income range for Canada ($72, 756 - $118, 285) (Statistics Canada 2010; Statistics Canada 2013).

The FHC was created in April 2002, after a local doctor approached one of his patients, Phil (78 years old), an individual with the determination to see a project through to completion, to create a walking and hiking program in Foothill. The doctor was concerned for the health of his aging male patients. Phil accepted the challenge and the hard work began. He organized a seminar, attended by 20 men of all ages, and went door to door to introduce the all-male walking group to the community. At the same time, Phil created the co-ed FHC. As of September 2010, the FHC had close to 50 members. There is a nominal annual membership fee ($40 CAD) for the FHC and participants were expected to help out with fuel costs ($15 CAD) if they were car-pooling. There is also a $5 CAD drop-in fee for non-members. The FHC received financial and administrative assistance from the Recreation and Culture section of the Town of Foothill. This allowed the groups to purchase insurance, equipment, and run courses on how to prepare for backcountry travel, general first aid, and wilderness first aid. The courses were mandatory, due to insurance restrictions, for FHC trip leaders. The FHC met at a local park every Tuesday and left exactly at 7:00 am.

New members to the FHC were asked to hike with Group B because the hikes were less demanding than Group A. This allowed for group leaders to assess the fitness and experience level of new members and provided new members with the opportunity to decide if the group was right for them. Both groups usually hiked in the same area, but traveled different routes. Sometimes the groups hiked to a common area for lunch and then split apart: Group B would either return to the parking lot or take a less strenuous route than Group A.

First Day

The first day of hiking was a test for R. Phil, the trip leader, wanted R to hike in Group B so he could find out if R's fitness was good enough to go with Group A on the next hike. R convinced him that he had done a lot of hiking in the past and ensured him he was fit enough for the Group A hike; however, Phil was still leery. He informed R that there have been people who joined the group in the past who looked fit and capable, but ended up becoming a burden on the group because of their lack of experience, preparedness, and fitness. He stressed that the day is very important to participants and most of them plan their week around the weekly hiking trip, therefore, they did not want to spend their time babysitting someone who should have been prepared. Overall, it can be an unpleasant experience for both the new member and group. This sentiment was repeated several times throughout R's time with the group. Phil wanted everyone to have a positive experience, so he made sure people were prepared and knew what they were getting into. However, Phil did make it clear that accidents do happen and the group leaders have emergency training if anything does go wrong.

While FHC members were gearing up for the hike, two buses pulled into the parking lot. To R's surprise, both buses were from senior hiking groups. It was a surprise to R because some of the people exiting the buses did not look like they were able to hike the trails in the area. R knew the area well and there were not a lot of easy hikes for the types of bodies he saw exiting the buses. He heard a few of the FHC members voice what he was thinking. Immediately R questioned why he and the FHC members, who were in the same age range as the new arrivals, viewed the newcomers differently. R concluded hat there was a frailty to some of the newcomers that was unsettling. R would like to think that he was immune to the negative stereotypes of aging, but they are so pervasive in Western culture that it is difficult not to slip into assumptions about the aging body such as, "These people look old, how can they do what I can do?"

Dionigi and O'Flynn (2007:359-377) encountered a similar type of ageism in their research on older athletes. The authors found that older athletes held dearly to notions of PA improving their physical abilities and prolonging their lives because they feared the opposite. Furthermore, their level of PA "reinforced the undesirability of old age" (2007:372). Therefore, the juxtaposition of the physical demands of hiking and the rugged mountain setting with what was perceived as frail older bodies, exaggerated the undesirability of old age in R and FHC members. However, their perceptions were proven wrong. Although some of the newcomers did need walking aids – almost everyone in both the FHC and the newcomers' group used walking poles, so the aids were not viewed as something age specific – they did not have any problems with the terrain.

The rest of the hike that day was an illuminating

experience for R. The Group A hike for that day was a 16 km loop with 726 m in elevation gain, while the Group B hike went to a small alpine lake and returned the same way (approximately the same distance as Group A, but not as much elevation gain). Group A was a mix of four women and five men. The group embodied distance, elevation, and time to complete hikes. This was exemplified when the groups split up after lunch and Group B went back the way they came and Group A continued the loop. R went with Group A and it was a long slog in rain, sleet and snow to the top of a col (a gap between mountain peaks) that connected two valleys. The group spread out according to fitness level and comfort with the terrain. The easier route was through rock bands in the scree (loose rock), but there was some very minor climbing that could be minimally challenging for some. Participants would look after each other and help the ones that needed it through the tricky sections. The scree was less intimidating, but more challenging because the scree would slip so that each step forward was almost half a step on solid ground. Everyone waited at the top of the col for the slower members and allowed them to have a rest before the trip down. While waiting for the slower members, Phil showed R the altimeter to let him know that they had gained 600 m since their lunch spot and after the hike, Phil told R the length of the hike and how long it took them to complete it (approximately 7 hours). He told R, "Not bad for a bunch of old guys." He was right, and R had to remind himself that Phil was 78 and the youngest person in Group A was 59. They were an extremely fit and capable group to tackle this type of hike. R had also gained the acceptance of the group by not slowing them down.

Resistance to Essentialism

Similar to Chloé's experiences with cancer, biomedicine has both figuratively and literally shaped the lives and bodies of some FHC members: surgeries have corrected malfunctioning hearts, removed cancer, and repaired injured joints. Pharmaceuticals have allowed members to control chronic health problems, such as heart disease, diabetes, and cancer. However, participants viewed biomedicine with distrust due to concerns about the over prescription of pharmaceuticals and biomedical essentialism associated with their ages. The Cartesian dualism of biomedicine has frequently been discussed in anthropological literature (Helman 2001; Scheper-Hughes and Lock 1987:6-41; Shilling 2012), but for our participants, biomedicine had its own dualism: it was viewed with gratitude and distrust, both a preserver and destroyer of life, something to be avoided and simultaneously embraced.

Lou (66 years old) had a dualistic view of biomedicine. He visited his cardiologist three times a year to monitor his hypertension and his cardiologist was always impressed with his good physical condition. Lou attributed his good health to staying active and managing his weight, "If your waist line is too big [laughs] and you're overweight, you're putting more pressure on your heart and your vessels to supply the blood." Lou's neighbours – inactive and obese according to Lou – frequently told him he was acting like a 20 year old due to his active lifestyle; furthermore, they did not understand why he did not take it easy in his old age. His response to their criticism was that he had a choice to be obese or not. Lou's view of his body coincided with biomedicine's reductionist view where disease is determined by deviations from measurable somatic norms (Engel 1977:129-136). From Lou's perspective, the normal body had a specific weight and size that, when deviated from, resulted in an improperly functioning cardiovascular system. This was a common discourse amongst participants.

Lou also had arthritis. In the same way that Chloé mitigated her post surgery pain with exercise, Lou managed his arthritic pain through PA. He believed that the release of endorphins, through exercise, eased his arthritic pain. Additionally, Lou used acupuncture to control his pain and, like Chloé, he was determined to "stay away from medicine as much as possible." Other participants shared Lou's avoidance of pharmaceuticals.

Foothill Hiking Club members attached a moral value to medications they believed could be avoided, or doses reduced, if they remained active: such as medications for pain relief, diabetes, or heart disease. Similar to Dionigi and O'Flynn's (2007:359-377) and Laz's (2003:503-519) findings, participants considered people who were able to control their illnesses through PA as strong-willed, healthy, and of good moral character. Furthermore, they did not judge participants who had to take medications due to the severity of their conditions. They considered these individuals to be of good moral character for being proactive and joining their group to improve their health and fitness.

In addition to pharmaceuticals, several key informants had become desensitized to the plethora of potential accidents and illnesses associated with their age group that were endlessly reported in the media. R was told on several occasions that if they worried about all the

potential hazards of life, they would never leave home. It is a reaction to what Scheper-Hughes and Lock identifies as the "medicalization and the overproduction of illness" (1987:27). The medicalization and overproduction of illness is also linked to Laws' essentialism in which specific biological changes and diseases are associated with chronological age. Therefore, as experienced by Lou being told to act his age, there are specific activities an aging person is not expected to engage in. This also contributed to how they viewed their own age. A frequent response from key informants when asked if they considered themselves healthy was, "for my age." This response was an acceptance that by a certain age a physiological decline will be experienced (Laz 2003:503-519). This was mainly due to biomedical research filtered through media outlets and presented as anti-aging products and recommendations for a youth obsessed culture (Cardona 2008:475-483). They were constantly being reminded that an older body was not welcome in Western society (Cardona 2008:475-483). This was illustrated when a key informant told R that his presence had brought a certain "vitality" and provided the group with a feeling of importance, "Now we can puff our chests up and say, 'we, are being, studied.'" This informant's life before retirement consisted of academic research and teaching. He missed it desperately, resulting in feelings of abandonment:

> I don't feel I have a purpose. It's annoying that people try to attain this [retirement], and when they get there, [as] in my case, I want to be helping. I want to be contributing. I buy into this thing though [that] you should be paying back to society, and now – I can't go to the university and say, "I'll do lab work. Well our salary, cap… No-no I'll work as a lab tech or something at half the salary. No-no we can't because our grid (a union hierarchy of jobs and wages), doesn't allow it." It doesn't make me happy.

Hiking provided this informant with something to do with his spare time. He was an avid photographer and would share his photos with other members. It provided an opportunity for him to socialize, be active, and indulge his creativity. Therefore, hiking for this group was sometimes viewed as a form of protest against biomedical essentialism. Instead of submitting to aging expectations, group members had taken the privileged position of institutionalized established norms and placed it on par with their ability to consider alternatives when dealing with their health and age (Helman 2001:501; Scheper-Hughes and Lock 1987:6-41). They allowed biomedicine to provide the diagnosis, occasionally the "cure," but they also had a voice in the decision making process. This form of empowerment created a unique social identity that we explore in the next section.

Healthy Bodies, Healing, and Age

The values of a society can be expressed through symbolic equations and metaphors that delineate individual roles through daily activities (Csordas 1990:5-47; Geertz 1973; Scheper-Hughes and Lock 1987:6-41). According to Csordas and Scheper-Hughes and Lock, these symbolic equations and metaphors can be used to create an idealistic vision of health and reveal how a group views a healthy body in relation to a healthy society and a diseased body in relation to a dysfunctional society (Csordas 1990:5-47; Scheper-Hughes and Lock 1987:6-41). The symbolic structure of the FHC is located in the physical act of bipedal motion (Ingold 2004:315-340). Our observations and experiences with the group coincide with Ingold's (2004) argument that the routes people walk becomes an expression of their lived time and space. For example, walking for Chloé was linked to her overall sense of wellbeing. She endeavoured to walk routes that were difficult enough to ensure she was exercising at a high intensity. She embodied active aging and attributed it to her healing. This also influenced how Chloé viewed the inactive body during her cancer treatment. She equated the inactive and obese body to being lethal to a person's overall health because she saw inactive and overweight patients having difficulties healing, whereas her active body did not experience the same problems healing. However, her perspective on activity does not recognize that these individuals may have faced challenges beyond their control or associated with their diagnosis and treatment regiments (Asquith 2009:255-269; Davey and Glasgow 2006:21-27). Chloé thought that someone should help them become more active to improve their conditions. This building of health and healing symbolic equations holds true for FHC members. Members shared in the physical experiences of their environments and the changes their activities made to their bodies. These experiences also made them uniquely aware of their age and body parts susceptible to injury.

Joint health of the lower body was a major concern for all FHC members. Injury to a knee, ankle, or back could severely limit their mobility. Foothill Hiking Club members attached meaning to an upright and mobile body in the same way that, as pointed out by Scheper-Hughes and Lock, "old stock" American farmers from the Midwest attached meaning to the backbone of their bodies and "upright" posture (1987:18). When these hard working

individuals were bedridden, it was extremely damaging to their ego. Their society equated wellbeing with an ability to remain upright and mobile. Erwin Straus (1966:164-192) in his paper "The Upright Posture" identified the symbolic importance of an upright posture. According to Straus, in Western society "to be upright" has literal and metaphorical meanings: the literal meaning is to physically stand up without assistance; the metaphorical or symbolic meaning is linked to a person's morality (1966:530). An upright person, or as expressed by our participants as "a stand-up guy," is a person of good moral character. Foothill Hiking Club members attached similar symbolic meanings to the reclining body as Midwest farmers by viewing it as lazy or disabled. It represented a loss of independence and a potentially demoralizing, even fatal, situation if an individual was forced to endure long periods of inactivity or lying down.

Hal (69 years of age) tore his Achilles tendon the summer before he was interviewed. It had been a long recovery for him, but he refused to stop hiking. He believed that hiking would eventually heal his condition. Like Chloé, Hal was a cancer survivor and attributed his recovery to his physical activities. Hal underwent a six-hour surgery, followed by 12 hours in post operation, to remove a tumour from his brain. He was up and walking within a few days after his surgery to the chagrin of hospital staff. They told him he was a bad patient and his response was, "You want the most efficient sort of patient who lies in bed, but I'm not a patient anymore. I've had the operation. I've got my own way of getting fit now and I go for walks." Hal allowed biomedicine to treat his cancer, but, like Chloé, Lou, and others, he was determined to proceed with his healing on his own terms. He fully believed walking had helped his healing process and eight weeks after his surgery he was back at work.

After surviving his cancer, and seeing other members in the group with serious health problems still hiking, Hal believed his torn Achilles tendon was not enough of a health problem for him to stop hiking. He felt an obligation to his fellow hikers who hiked with more serious health problems than his. Therefore, Hal had to maintain his upright and mobile body image as a symbolic gesture of solidarity with his fellow hikers. Also, hiking just might heal him.

It was not just joints of the lower limbs that were a concern for participants, back problems were another frequently discussed health problem. Back pain is a common problem in aging populations. In the United States alone, cases of back pain have increased from 7.8 million to 12.8 million between 2000 and 2007, with chronic back pain accounting for over half of the increases (Smith et al. 2013:2-11). During this same time period, the average age of back pain sufferers increased from 46 years to 48 years (Smith et al. 2013:2-11). Furthermore, over 25 percent of older adults had chronic back pain as they entered retirement (Smith et al. 2013:2-11). So it comes as no surprise that back problems were a source of considerable discussion with FHC members. Participants would discuss how back pain in aging friends and family members had made it difficult for them to live an independent and mobile life:

> [S]he [wife] unfortunately can no longer participate [in walks]. She's got back problems.... She never has a day that she doesn't have pain...
>
> [W]e have some physical problems with my wife at home…. Once you are destabilized it's just incredible how bad it is when you can't get out and do anything. She's got a bad back.... When you can't even walk it's pretty miserable.

Their indirect experiences of their spouses' conditions had given them an appreciation for their bodies and the motivation to maintain an upright, and pain free, posture.

Maintaining an upright and mobile body were key symbolic acts by FHC members that demonstrated to others their independence and health status. Their attitudes towards the upright body embodied the connection between the individual and the group. Hiking with painful injuries or illnesses provided other members with inspiration and enforced the belief that their hiking will heal their injuries or mitigate side effects due to illness. For many, submitting to pain or sickness by reducing their level of activity was equated with a loss of mobility, independence, and overall health.

Several participants discussed how their mental pain was also managed or completely eliminated through their hiking experiences; as one key informant suggested, "It gives you the ability to cope with life a lot better when you do physical activities." It was a mind-body interaction that they were aware of and attributed to their overall sense of wellbeing. They frequently discussed the importance of hiking to improve their mental state, so there was an acknowledgment that the mind and body functioned as a whole:

> [Y]ou keep your body loosened up, like I say you release endorphins and I really do believe that it helps so you don't get depressed and people that sit

> around, feel sorry for themselves rather than get out and exercise, they just seem to go downhill in my opinion. Whereas, if you're out exercising, it just gives you a little lift…

Jemma, an FHC member who had been living in a very difficult marriage, found escape and comfort in her fellow hikers who provided her with a coping mechanism for her emotional pain:

> Oh it [hiking] made all the difference, I felt like I was holidays all the time, because one day a week I had a fantastic holiday. I had people I enjoyed outside of the family situation, and the family situation had some conflict, so it was great to get out of that, and it gave me something to look forward to.

The camaraderie that Jemma experienced amongst her fellow FHC members was created through the sharing of leadership responsibilities and adventures. Leaders were both male and female and treated as equals during our observations. Although leadership was an undesirable position due to the extra responsibilities, members felt a duty to lead the group to ensure the continuation of hiking trips. Men and women hiked together, helped each other out, and shared in adventures resulting in the formation of deep bonds between participants. These bonds helped them mitigate the occasional negative experience associated with their age.

Foothill Hiking Club members were constantly challenging the stigma attached to age and the aging process. Jemma provides a couple of examples of how they used their activities to challenge traditional notions of aging:

> [T]hey push themselves sometime to the limit and some of them have gone beyond their comfort level to achieve that and I feel that they're a good example to anybody who is looking at people who are getting older and see that they don't sit around [laughs]...I think as you get older – especially if you're retired – I think it gives you a new lease on life and makes you want more, or not, depending on the individual [laughs].

> [W]e went [hiking], and there were two 20 [year old] girls…and they looked at all us "old people" and they said, 'Oh, we should have no trouble with this hike. If these people can do it we can do it' and I snickered to myself…so, they struggled, and they struggled. They were a little bit behind us, but we kept encouraging and talking to them and some of our group were insulting like they thought, 'Oh this younger generation…' They had negative comments, but I said, "You know what, no. Let's encourage them," and so when we got to the ladder [to climb a cliff], they were already going to turn back, but we told them to join us and we helped them up the ladder and told them to watch for us when we left, so we could help them down. I thought that was so good. It probably helped them have a different attitude about aging and maybe helped some of the older people have a different – like, we've made a difference in their lives.

For the majority of FHC members, emotional and physical pains were unifying experiences. It defined their experiences of sickness and healing. Similar to Cholè's experiences with using walking to mitigate her sickness, group members controlled their pain through hiking. They viewed their hiking activities as liberating experiences that motivated them to continue their active lifestyles and provided them with a sense of control over their lives. However, the production of acute pain was also considered a part of the healing process and a rite of passage.

The physical strain and pain associated with the physical demands of walking and hiking acted as a rite of passage for group members. It was a therapeutic experience important to their healing. Hsu (2005:78-96) suggests that acute pain can break down barriers between individuals and create a space for interpersonal connectedness and healing. The sharing of these physically demanding experiences created a bond between group members and provided them with new social identities (Hsu 2005:78-96). Individuals recovering from sickness or injury were able to change their life narratives to ones where their health issues were not the only experiences that defined them.

Another source of embodiment was our participants' experiences in nature; the feeling of being in a special space or place. Boyes' (2013:644- 665) research…successful aging. The author found that respondents embodied their experiences in nature through their sensory descriptions of being in nature, adventures in nature, and learning about nature. Boyes (2013:644-665) research into successful aging coincides with our findings. Boyes found that the natural environment was integral to the experiences of his research group (80 members of an outdoor adventure group ranging in age from 54 to 83 years) and their successful aging. Margaret Rodman (1992:640-656) observes that the experience of place is unique to each individual and shared amongst members of a group; that is, places are compared, manipulated, or interpreted to provide an idealized landscape. This was seen in the hiking groups by the taking and sharing of pictures. The pictures represented

trophies of hikes completed or their constructed image of an ideal place. It was a way of confirming to each other that their experiences were unique and special, therefore, the group and its members were unique and special: they had a unique level of experience, health, and fitness to traverse long distances, ascend great heights, and navigate the relatively difficult terrain to reach the aesthetically pleasing locations depicted in their pictures.

Conclusions

In this paper we explore how a group of middle-aged and older adult hikers embodied their experiences of age, health, and healing. The major themes that identified dimensions of embodiment were: resistance to essentialism, activity, and camaraderie. Hiking was considered as an activity that would improve the aging body and make the body less reliant on medications and other forms of medical interventions. It was also a way to maintain a healthy weight and avoid the negative consequences of inactivity and obesity. Furthermore, hiking activities allowed middle-aged and older adults to challenge perceptions of the aging body and strengthen bonds between members through the adventures they shared.

The authors acknowledge that their description is not an accurate depiction of all middle-aged and older adult hikers. We are only able to provide evidence of a single group of hikers in a particular time and place. Future research on health and healing in this age group would benefit from an analysis of hiking groups that consisted of more diverse ethnic backgrounds. It would also be of value to establish if socioeconomic (SES) status influenced participation in hiking activities and if aging hikers from diverse SESs embodied their activities in relation to age, health, and healing in the same way as our participants. Furthermore, gender and aging was beyond the scope of this study and could be a source for rich analysis in this population.

Understanding the role of culture in how groups embody their activities as they relate to age, health, and healing is vital to providing tailored activity programs for specific aging populations (Lloyd and Little 2005:147-181; Weiss and Tomasa 2010:473-475). The FHC served as a meaningful space where participants could explore all aspects of their health with the support of others who had undergone similar life experiences. The physical activities they engaged in as a group were therapeutic and transformational for many members. It created a deep sense of community and aided in their healing processes. The health benefits of gender- and age-based groups have been documented by Gleibs and colleagues (2011:456-466; 2011:1361-1377) and others (Haslam et al. 2008:671-691; Haslam et al. 2010:157-167; Haslam et al. 2005:355-370; Haslam et al. 2009:1-23). As the global population lives longer (World Health Organization 2012), healthcare professionals will continue to be challenged with maintaining the health of aging populations. Holistic health programs such hiking groups could provide an alternative or ancillary treatment option to aging populations. However, cost, location, opportunities for socialization, and the physical ability of their target demographic should be seriously considered (Meisner et al. 2013).

Notes

[1] This is a pseudonym, as will be the case with all names of individuals and places referenced in this article.

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Population Aging as the Social Body in Representation and Real Life

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Abstract
This article uses three levels of body analysis as presented by Nancy Scheper-Hughes and Margaret Lock to compare old age as a construct in population aging discourse with research on lived experience of people aging in the United States and Ghana. I first describe how demographers construct social bodies as becoming "gray" through population statistics and how policy makers then use dependency ratios to rationalize intervention on behalf of older adults in the body-politic. The construction of old age within this discourse is then compared with ethnographic research that suggests this construct leaves out much of the lived experience familiar to anthropologists of aging. Rather than debunk the old age construct, however, the purpose of this article is to argue for study of population aging discourse as constituting a social body reflecting cultural constructions of nature and society. Moreover, this representation is made real through policy and social intervention work, and with very real effect on people's lives. As such, an anthropology of aging bodies can include the social life of old age as a social construct.

Keywords: Ghana, United States, global intervention, population aging, social body, cross-cultural studies

Introduction

In a call for greater anthropological study of the body, Scheper-Hughes and Lock (1987) argue for examination of three, interrelated bodily forms: the body-self, the social body, and the body politic. Anthropologists of aging can most easily identify our work in the body-self when we study aging as a bodily and social experience that varies across cultural contexts (e.g. Sokolovsky 2009). The social body refers to how the physical body is used in many cultures as "good to think with" (Scheper-Hughes and Lock 1987: 18) about the nature of society. For example, drawing from Janzen (1981), Scheper-Hughes and Lock explain, "every society possesses a utopian conception of health that can be applied metaphorically from society to the body and vice versa" (Scheper-Hughes and Lock 1987,:20). The body-politic refers to how individual and social bodies (first as representations in discourse and then as live subjects) are managed through politics and social control. In this article, I argue that population aging is a social body construct through which modern, bureaucratic societies think about aging body-selves as an aggregate that can be managed and modified through social policies and social service interventions. This thinking happens through policy discourse supported by professional research and practice targeting subsets of social bodies such as children, families, and older adults. While population aging is identified by demographers as indications of successful effort to promote health and longevity (Crampton 2009; Kinsella and Phillips 2005), population aging in policy and other social intervention discourse has characterized growing segments of older cohorts as a socioeconomic problem to solve (Achenbaum 1978; Gee and Gutman 2000; Victor, Scambler, and Bond 2009). The dominant construct of old age in population aging discourse is one of individual loss and decline over

time as a universal, singular, and inevitable experience. Chronological age is used to determine when the boundary into that state of loss is reached. This construct helps explain how populations statistically identified as aging are then characterized as "graying." The image of a populated social body that is going gray then has been used to link population aging trends to economic crisis both nationally and globally (e.g. Peterson 1999).

This representation of aging as a social problem is not only a cultural construction but also one that has been highly productive in shaping everyday lives within the body-politic. Constructs are operationalized through policy implementation and social service delivery. For example, Andrea Campbell (2011) argues that the Social Security Act in the United States helped form the social identity of older adults and helped create the social and political category of the senior citizen. At the same time, my ethnographic research from Ghana and the United States conducted in 2003, and 2004-5 suggests that the individuals represented in the social body as aging often do not identify as old and instead actively work to preserve autonomy as a mature adult. The disconnect between aging as constructed in the social body and aging as experienced by body-selves in the body-politic may help explain the responses of those in Ghana who argued that aging is "a white man's problem" in Ghana as well as those in the US who were aged sixty and over but did not identify as old and rejected aging services. As this construct is made real through social intervention work, however, it does take on a life of its own, suggesting the need to study its social life as part of and apart from that of aging selves.

The first part of this essay presents numbers and narratives of population aging discourse that form a social body subject to policy and other social intervention in the body-politic. I argue that national and global social bodies are formed through demographic statistics and given meaning through demographic transition and modernization theories. Proportionate and absolute numbers of older adults relative to working age adults are used to evaluate whether social bodies are acceptably age balanced or require intervention. Dependency ratios become assessments of whether there are enough productive adults to support young and old dependents. A social body that is unacceptably young, growing, shrinking or aging may be nationally or globally constructed as a body at risk to economic health and well-being: too many aging body-selves become a burden and a responsibility. The second part of this essay takes these assumptions as a point of inquiry in ethnographic research. How does the aging body-self as represented in the social construction of population aging compare with lived experience of aging bodies in society? The data used in this section are taken from a sixteen-month ethnographic study from 2004-5 of elder mediation programs piloted by nationally recognized elder advocacy organizations in the United States and Ghana (Crampton 2007). The finding presented in this paper is that the construct of old as frail and dependent was salient to people but actively avoided in personal experience. Even those who identified aging as a social problem located that problem more in others than in one's own body-self. These aging adults therefore avoided services for old people, while drawing from informal resources as necessary.

The concluding section provides a way to connect study of the social body constructed through population aging statistics with the lived experience of aging body-selves by examining how the representation in the former is made real in the social contexts of the latter. I argue that there is a social life to the dominant construct of old age found in the body-politic that is of ethnographic interest when operationalized through policy implementation and social service delivery. Rather than a passive embodiment of "old," people in Ghana and the United States actively engage with symbolic implications and material consequences of this construct, potentially transforming both the social meanings and objective implications of aging social bodies in the process.

Methodology

The first part of this essay analyzes population aging discourse and underlying demographic statistics learned through library research conducted for a working paper series for the Frederick S. Pardee Center for the Study of the Longer-Ranger Future (Crampton 2009), as well as academic and professional training in gerontological social work from 2001-2007. The second part of this essay is based on the ethnographic study in Ghana and the US conducted within the context of graduate training in cultural anthropology, social work, and gerontology. The research methods in each country site were similar in that each began as a qualitative program evaluation of the mediation project piloted by the elder advocacy organization selected in each country. This included immersion in the daily work of each nonprofit organization, participant observation of each program (generally beginning with some participation and then "switching hats" to a research role [see Crampton 2007]), semi-structured interviews with program participants,

and examination of program documents and reports. In addition, methods from legal anthropology were used to "follow the ideas" (Starr and Goodale 2002, 64-5) of old age as social problem and mediation as intervention solution to better understand the underlying assumptions of each program, and how participants perceived program success and failure. Data collected included program documents, fieldnotes, and audiorecorded interviews.

As explained by Annelise Riles (2000, 2004), one challenge in conducting ethnographic work within professional and professionalized intervention networks is how to get outside the logics of the network given that anthropologists have been trained in the same ways of collecting and interpreting data. My approach to following ideas and to getting outside the network was to travel frequently among professional training, intervention, and everyday contexts with the same questions of "who is old," how is this definition constructed and by whom, and whether/how this question is salient inside and outside of each context. I asked these questions indirectly through participant observation in a range of professional and community contexts, and directly through engaging a diverse range of interlocutors. The latter included professionals who worked and did not work in the field of aging, older adults who used and did not use aging services, and formal and informal caregivers of older adults.

Because my research fellowship required professional training in gerontological social work, I frequently moved from professional to informal contexts of aging within and between Ghana and the US. I also audiotaped fifteen semi-structured interviews with participants in the US pilot project, while informal engagement proved more useful with program participants in the Ghana study. For example, I conducted twenty semi-structured interviews with older adults in a Ghanaian village but the data from Ghana used in this essay are primarily from ethnographic fieldnotes written about informal conversations and interactions in the village (and the capital of Accra) that took place outside of more formal interviews. Informal engagement also proved useful in the US as well, and examples of strategies used by older adults outside of formal intervention were learned through immersion in US daily life. Observation of private mediation sessions and more formal, audiorecorded interviews were obtained with written consent, while informal interviews were obtained with verbal consent in order to not interrupt the flow of interaction. Data were collected with IRB approval.

Representing the Social Body through Population Demographics

Numbers and Narratives

The representation of national and international population aging is constructed through demographic statistics. Similar to the photomosaics technique (http://www.photomosaic.com) in which an image is created from the collection of many smaller photographs, the image of a social body as young, aging or graying is formed through

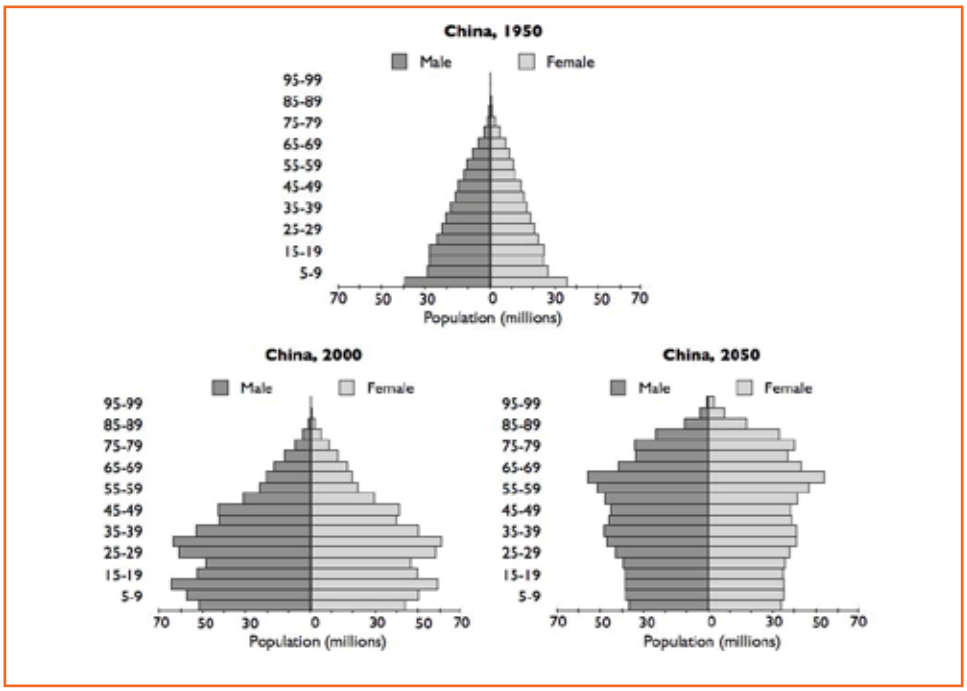

Figure 1: Population Pyramids for China (Data Source: United Nations World Population Prospects: 2008 Revision)

aggregate ages of individual body-selves. The numerical image is called a population pyramid, in which each stack of the pyramid consists of a chronological cohort in five year increments. The left side of the pyramid is for males and the right side for females. Historically, the most common social body has conformed to a pyramid type shape in which the larger and younger age-stacks taper quickly to a peak representing the relatively few who live into old age (Bengston and Lowenstein, 7). Figure 1 shows how China's pyramid took this historically classic shape in 1950, and is predicted to change due to declining fertility and mortality rates.

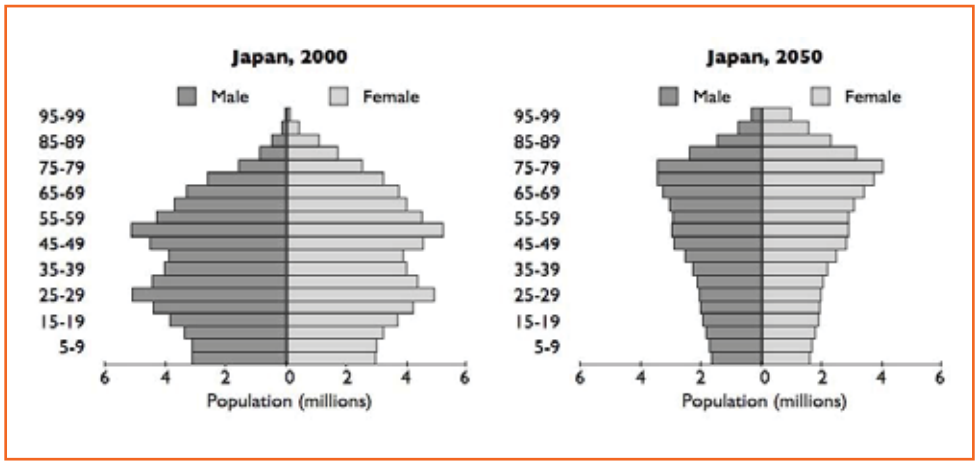

Figure 2: Population Pyramids for Japan (Data Source: US Census Bureau, International Database)

Demographers subdivide population pyramids in order to distinguish younger and older social bodies. Age fifteen is the typical boundary between young and adult, while the boundary between adult and older adult is more fluid. International statistics typically use age sixty. However, national statistics for countries experiencing a "longevity revolution" (Butler 2000: 19) tend to use age sixty-five, while countries characterized as youthful and developing may use age fifty. One measure of population aging is when the proportion of younger individuals is shrinking, stable, or growing at a slower rate than the proportion of older adults. The popular metaphor of graying populations, then, can be misleading when the proportion of older adults is greater simply because the proportions of younger individuals is shrinking, stable, or growing at a slower rate. Demographers refer to this as "aging from below" (Vallin: 113) as pyramid bases shrink but reduced child mortality means tapering becomes less steep. Over time, aging from below produces a pyramid that is more columnar, as can be seen in Figure 1 for China in 2050.

In addition to "aging from below," populations age "from above" (Vallin:113). Population projections for Japan are one example, as shown in Figure 2. This is the trend of longevity revolution most remarkable for the numbers of older adults living into old-old ages of eighty-five and older. It is identified through proportional increases (overall numbers or rates of increase) of older adults as well as increases in life expectancy. For example, the current national leader in longevity is Monaco, with an average life expectancy at birth of eighty-nine years (CIA World Factbook 2012). Population aging from above, coupled with low fertility results in a shape has been described as an inverted pyramid (Crampton 2009). The third most common measure of population aging foregoes the pyramid and cuts the social body in half by a calculation of mediation age. For example, the median age in China is projected to increase from age thirty-four to forty-eight by 2050 (United Nations 2010). In other words, by 2050, half of the individual body-selves of the body-politic will be in their late forties or older.

How do national bodies age? Although migration does influence proportions of aging body-selves within the social body, demographers focus on fertility and mortality trends within national borders (Kinsella and Phillips 2005; Lloyd-Sherlock 2010). Demographic transition theory is used to explain how social bodies may predictably move from a youthful first stage of a triangular pyramid shape through stages of population aging. There are four stages that progress from high fertility and mortality to low fertility and mortality. According to population equilibrium theory, social bodies move through each stage and then stabilize at a level in which fertility and mortality rates balance (Vallin 2002). At this point, the demographic transition is complete. These stages reflect historic patterns of population age change as countries of the "West" (or "global North") developed and modernized. Since then, analysts use these stages as a universal model to evaluate the aging of national social bodies as predictable, too fast, stalled or reversed (Crampton 2009). An example of reversal is in Russia, where increasing male mortality contributes to population shrinkage rather than stability (Coleman 2006). Policy interventions are intended, in part, to assist social bodies in correct progression through stages,

achievement of stable population growth, and manageable age distribution. The global spread of population aging among social bodies is regarded as a result of successful effort to improve health that then can become a problem of surplus older adults (Kinsella and Phillips 2005).

Why would greater numbers of people ages fifty, sixty or sixty-five and over require policy or service intervention? As argued by Cowgill and Holmes (Cowgill, 1974; Cowgill and Holmes 1972), the answer has been modernization theory (for more recent review, see Street and Parham 2002 or Lloyd-Sherlock 2010). While demographic transition theory is used to explain shape shifting of social bodies over time, modernization theory is used to naturalize a particular progression and universal policy prescription for social bodies going gray (Crampton 2009; Robine and Michel 2004). This theory ties the demographic statistics of aging body-selves to social, cultural, and economic contexts. The two-part stage model is a binary from traditional, youthful populations to modernized, aging populations (Cohen 1998). In traditional societies, there are comparatively few older adults who are well looked after through kinship networks. Through modernization, however, older adults might become casualties of development as younger family members move to cities in search of work, seek outside authority of formal education and professional roles, choose wage labor over hopes of inheriting family land as their main source of wealth, and lose traditional faith that associates elders with powerful ancestors. Older adults thus lose status both objectively as they lose control over valued resources, and subjectively as they become a care burden within family systems (Aboderin 2004).

The overall result is an inversion of high socioeconomic status from old to young as resources and values shift to younger adult generations. This analysis helps naturalize the historical development of retirement policies and social welfare nets for older adults in market economies. These policies and programs are now expanding to countries with much smaller social welfare states as "traveling rationalites" (Craig and Porter 2006, 120) within such policy efforts as the Madrid Plan of Action on Aging (Lane and Serour 2008). In social bodies that are becoming "old before rich" (which means population aging precedes expected economic growth, [Olshansky et. al. 2011]), solutions are found in help outside the state from nonprofit organizations (NGOs) and call for international aid. In making this argument, some scholars argue that elders are still valued and respected but that the objective problem is stress on family systems due to inadequate and uneven benefits of development (Aboderin 2004). Younger generations travel to cities and abroad out of economic necessity and are simply unable to fulfill familial caregiving roles (ibid 2004). Older adults, whose knowledge and skills may have become out of date, are reduced to a burden on families and society.

Narratives and numbers come together in policy making through dependency ratios.

Dependency ratios compare the numbers of people working and thus actively contributing economically to the social body relative to those dependent due to age (Goldstone et. al 2012). That is, those under the age of sixteen or over sixty-five are dependent while those aged sixteen to sixty-four are productive because they should be working in the market economy (Lloyd-Sherlock 2010: 19). The use of dependency ratios helps create old age as a self perpetuating problem for the body-politic; first helping to produce problems of retirement, dependence, and exclusion by definitions used to distinguish adult from old, and then offering policy solutions to enable old people to be secure, independent, and integrated within society. This process fuels a continual need for support as more people reach the age defined and addressed in policy as dependent and in need of rescue. Carol Estes has criticized such policy and social intervention as an "aging enterprise" (Estes 2001) that marginalizes older adults and best serves professionals who build careers on fears of aging characterized by frailty, dependency, and vulnerability. John McKnight (1995) argues that the real purpose of these policies is to help younger workers compete by pushing out older workers and reducing them to consumers of gerontological expertise. As cultural artifact, this construction also embodies fears of aging as decline and loss not only to individuals but also to national populations and economies. For example, Donald Rowland describes how,

> nations with the oldest populations could face the prospect of a 'demographic winter.' This would entail severe population decline and excessive aging, rather than the more hospitable 'demographic autumn' of population stability where the numbers of children and the elderly become nearly equal and constant (Rowland 2012: 3)

Dangerous Dependency Ratios in the Social Body

Given that old age has essentially been defined in policy discourse as an antithesis to development (i.e. as unproductive and dependent), it is not surprising when policy makers regard population aging trends with alarm. Stephen Katz refers to this as "alarmist demography"

(Katz 1992) while Ellen Gee and Gloria Gutman use the phrase "apocalyptic demography" (Gee and Gutman, 1). Within national populations, growth in older cohorts are associated with economic drain through retirement and social welfare policies (Goldstone et. al. 2012). In addition to the graying metaphor, calls for scaling back social programs have come with comparisons of older adults to natural disasters, such as an "age-quake" and "age-tsunami" in mass media (e.g. Gettler 2009). Population statistics calculating dependency ratios then rationalize fear as objective assessments of economic health and well-being. Proposed policy solutions include effort to recalibrate ratios through changing the numbers of younger dependents, older dependents, or both.

Ironically, calls for policy intervention have been sounded just as population age distributions change. Before fears of a social body that was too old, population policy concern centered on fertility run amok. In the 1950s, the metaphor was of population explosion, which then drove development of family and population planning programs worldwide (Demeny and McNicoll 2006). What was unknown in 1969, when the UN Population Fund was created, was that global birth rates were peaking between 1965-1970 (Sadik 2002). Concerted policy efforts were therefore implemented just as trends began to change. Successful intervention through policy helped fuel fertility decline (Caldwell, 2002). This decline is identified as the main driver of population aging, which then brought a new fear of a "gray dawn" (Peterson, 1999) and "demographic time bomb" (Vettori 2010) thirty to forty years later. Policies for control aging trends within the social body include pro-natalist policies to increase fertility, migration policy to add younger workers and families, and simply recalibrating the marker of dependency from age sixty-five to seventy in aging policies (Crampton 2009; Hudson 2009). A newer focus has been to reverse the previously assumed failings of older adults by promoting "active" and "positive" aging (Rowland 2012,:186-188). The Madrid International Action Plan on Ageing calls for "mainstreaming" older adults to reverse previous exclusion from development policy and projects (Lane and Serour 2008). As these policies continue to be proposed, the global growth in older adults is peaking, and projected by the UN to stabilize by 2050 (Börsch-Supan 2004).

The Populated Social Body as Cultural Construction

The social body as calculated through population statistics is a construction of western thinking, in which society is composed primarily of self-interested individual body-selves who more often compete rather than cooperate with others for scarce resources. The social is simply the sum of these individuals who can be meaningfully distinguished by birthdays. The predominant construct of old age in the social body of population aging is that chronological age marks when individuals become old, and that old means frail, dependent, and vulnerable. In aging social bodies, the state has to rescue individuals and families from dependency-care burdens. State welfare and service interventions are thus produced for the good of the body-politic on behalf of older adults, families, and communities. While these interventions were first implemented in Western Europe and North America, they are increasingly applied worldwide through identification of global aging based on demographic statistics and international comparison of dependency ratios.

The predominant construct used to manage aging of the body-politic as a universal and singular problem of becoming old and dependent has long perplexed social scientists and social historians who study the everyday lives of older adults (Cohen 1994, Edmondson and von Kondratowitz 2009; Katz 2005). We know through empirical research that growing old is much more varied than facing frailty, vulnerability and dependency as an individual at a specific point in time. Multiple examples have been published from rural and urban areas (e.g. Sub-Saharan African examples in Makoni and Stroeken 2002, US examples in Kaufman 1987), in edited volumes of international research (Lynch and Danely 2013; Sokolovsky 2009) and as global comparative projects, such as The World Cities Project (Rodwin and Gusmano 2002). Arguments made thirty years ago ring familiar, today, such as this quote about aging from Östör in the 1980s, "Like time, totemism, and kinship, (aging) is based on an illusion, an assumed and interpreted universal. It is true enough as a general expectation but false as a skeleton to which cultures bring the varying appearances of flesh" (1984). The expression of "no aging" later used in this paper builds from work by Lawrence Cohen and Sarah Lamb about rejection of modernist constructions of aging in India (Cohen 1998; Lamb 2000). Yet, across cultures, social scientists have also found a common term and culturally mediated concern for when someone becomes so frail and debilitated through aging that they become totally dependent upon others (Apt, 1996; Holmes and Holmes 1995; Kertzer and Keith 1984; van der Geest 2012). The presumed utility of chronological age to mark this boundary is replaced by an empirical question of when, whether, how and why this happens to body-selves within culturally mediated social contexts in anthropological studies of aging (for research by a development specialist,

see Lloyd-Sherlock, 2010). This next section draws from my research study comparing the construct of old age in demographic, policy, and professional intervention discourse as objective fact with old age as ethnographic question in the United States and Ghana. My interest was both in whether body-selves accepted policy and professional representation of old as reality, and what realities might this representation either distort or omit.

Representation meets Reality of Who is Old in Ghana and the United States

Before conducting pre-dissertation research on aging in Ghana during the summer of 2003, I sought research permission from the Director of the Institute for African Studies. My proposal was part of policy and professional discourse on aging in that I proposed to study aging as a bodily and social experience of those aged sixty and over. Dr. Manuh read my proposal and then simply asked, "Who is old?"

She flatly rejected the use of chronological age or functional limitation. I then brought this question to colleagues, key informants, and elder mediation participants over the course of dissertation research as a way to test whether the construct of aging in population aging and other professional discourse was commonly part of every day experiences of aging. Given such a broad topic, the study focus was on a particular intervention used to address population aging as a social problem by two nationally recognized nonprofit elder advocacy organizations in two countries. The US was chosen as a country of "export" both of constructing aging as a social problem and inventing mediation as a professional intervention solution. The US is also my cultural background and I wanted to better reduce problems of internal validity (Thyer 2001, 280) by testing my assumptions of western constructions of old age against those of my fellow Americans. Ghana was chosen as a country of "import" of both aging as social problem and mediation as intervention solution. That is, research attention to population aging as a social issue in developing countries began in the 1980s (Martin and Preston 1994).

In Ghana, by the time of my research in 2004-2005, there were a growing number of nonprofit "NGO" organizations advocating on behalf of older adults, the development of a national health care policy for adults aged seventy and over, and promotion of national policy on aging (in part driven by the work of HelpAge International, based in London). At the same time, aging was identified as "a white man's problem" both for cultural reasons and greater policy concern over youth. In addition, mediation as culturally mediated response to interpersonal conflict was more widespread in Ghana than in the United States but the professionalized mediation model was regarded as a US invention. It was being imported through trainings, local legal professionals, and court reform. Thus, aging and mediation were being imported not in recognition of local realities as much as part of the geopolitics of social intervention work and international constructions of social problems and solutions. I argue that the representation of aging as social problem has had very real effects in the United States even as it does not fully represent lived experiences of aging, and that these representations are beginning to have more influence in Ghana.

In this next section, I present my argument about the relationship between old age as represented in population aging discourse and as lived experience. My data suggest that while a singular construct of old age dominates policy and intervention discourse and service delivery in each country, aging as lived experience is often an act of avoiding identification with this construct and promoting interdependencies and reciprocity over acceptance of total dependence.

No Aging in the USA?

Similar to Sharon Kaufman (1986) in the United States and "no aging" described by Laurence Cohen (1998) and Sarah Lamb (2000) in India, there was often a disconnect in my data between the construction of old age in policy, professional, and advocacy work on the one hand and everyday social meanings and practices on the other. While there was an acceptance of the construction of old as applied to others and within society as a whole, this did not necessarily extend to one's body-self. For example, an adult who signs up for Social Security and then delivers meals on wheels to seniors out of sympathy for the elderly, or a seventy year-old professional delivers a speech on the needs of older persons as the apex of a distinguished career rather than a spokesperson for this frail, vulnerable, and dependent population.

The question, "Who is old?" was thus both obvious and provocative to answer. Although sometimes taken aback, response in the US research site often started with the easy answer of bureaucratic choice, such as age sixty (as used in the Older American's Act) or sixty-five (as associated with Social Security). When resisting an easy answer, however, many stressed that old age is not a number. For example, one more formal interview respondent said, "My mother is ninety and I did not think of her as old

until she had a stroke and changed quite a bit. She had been the kind of person who is careful to put on makeup and select what she wore before going out and she was no longer interested in that. Then, my sister and I noticed she had become forgetful." Another added that people can become old in their forties while there are others she does not consider old who are in their nineties. The difference is one of attitude and activity. Thus, "old" was defined by loss of traits identified with mature adults and as a bodily and social experience that is actively avoided. This means policy makers and professionals may often be in the awkward position of serving involuntary clients—that is, people who would rather not identify as "an official geezer." One clinical social worker explained that the hardest part of her job was convincing an older adult to accept being a client. At a senior center, a staff member described seeking older volunteers in the hope they will be more willing to later use the services themselves.

Of course, old age cannot always be avoided. In this research and other studies, however, most old people still eschewed old age services. Instead, they turned to informal services and networks. For example, one woman in her nineties relied upon neighbors, church members, and her therapist. She was afraid to live alone and yet even more afraid that social services professionals would move her to a nursing home. So, she cheerfully refused agency help as she became increasingly frail and housebound. Her preference was to place newspaper ads for people to stay with her as needed. Her informal network helped monitor the situation, and she eventually found someone who would also provide basic nursing care. Eventually, she did need formal intervention and moved to a nursing home. However, she was able to avoid this move for several years in comparison to if she had tried to live entirely independently. In her new environment, she continues to both give and receive. Although bedridden, she calls out greetings to caregivers and reads to her roommates. She does not self-identify as totally dependent.

The Importance of Social Ties and Reciprocity in Ghana

As in other cultural contexts, old age in Ghana was based on whether one can support him or herself. In a labor-intensive economy, this often meant being physically fit enough to work. For example, the most common response from twenty interviews conducted with older adults was that the onset of old age came when one was no longer able to contribute to one's own care or that of others. For many Ghanaians, this becomes more likely as people reach age eighty and over. Until then, many develop strategies to earn income and contribute despite aging bodies. I learned this distinction when working with a research assistant who offered to identify an interview sample of older adults. As I learned her construction of aging as limited to those who are frail, dependent, and vulnerable, and explained my study included anyone over sixty, she complained that this would include too many people and perhaps the entire village.

Proverbs are often used in Ghana to explain and enforce social norms. One focused on aging is that, "Just as the elder helped you as you cut your first teeth, so should you help them as they lose theirs." This describes a social contract. That is, one does not care for others solely as tradition; one cares for elders because of what they have done for you. Those who do not or cannot provide for children as they grow may find that there is not as much care as they grow older (see also van der Geest 2005). This is not to say there is a calculated exchange but rather that respect and love as an elder has to be deserved on some level. Barbara Stucki refers to elder strategies to manage interdependent relationships as "managing the social clock" (Stucki 1995). Many in the research study also complained that this love was more abundant in times when resources were also more abundant. In villages, children used to be routinely sent to share food with elders during harvests. This practice is less likely as resources deplete. A related comment was that old age seemed to come earlier to people today because of stressful life circumstances. At the same time. people noted that social norms have changed such that older adults cannot expect children to offer help as readily nor for younger people to seek their advice.

Overall, old age was not a particular chronological age or even state of being as much as a status negotiated within interdependent relationships. People who have "done well" and shared generously with others are more likely to enjoy their later years as ones of rest and a sense of achievement. One example is an older woman who has become the head of her extended family. This means her opinion is consulted for important matters, her presence is especially requested for special events, and her advice is sought in counseling. She has earned her elder status not only within her family but also in the village through the care she has given to others and for organizing and leading various associations. For example, she has created, "a practical approach" to what she perceives as the problem of old age in her village. She began offering help to old people after a trip to Zimbabwe taught her that Africans might otherwise turn to creating nursing homes. That is, she visits old people at home, tries to reduce family conflict

that compromises elder care, lectures on reciprocity and care, and offers health promotion presentations. In doing this work, she has modeled the care she many need if she becomes old.

Relating Representations to Realities

In both research sites, there was an answer to the question of old age that was similar to the old age construct of decline and dependency. Yet, who was old and how one became old was more than a passive response to passing time and the aging of the body-self. Most adults aged sixty and over actively avoided identification with old age, and those who had become frail and dependent also found ways to contribute so that the relationship was also one of interdependence. This contrasts with the zero sum relationship of independent and dependent implied through dependency ratios in which a body-self is either productively working or receiving care. This also contrasts with the representation of an aging social body as constructed through population aging statistics, in which the real options and varied choices made by older adults are reduced to description of a highly stigmatized and helpless condition. Of course, as pointed out by Timothy Mitchell (2002), all representations are limited by what information has to be left out in order to provide a coherent construction. At the same time, old age as a number seems better explained by the need for clear, bounded, and mutually exclusive categories for use in statistical calculation and bureaucratic decision-making than as a proxy for the lived experience of body-selves.

The ethnographic significance of this representation is less in how real it is than in how real its impact has been. This is primarily through translation into retirement and social welfare policies coupled with service delivery for "seniors." Policy and intervention implementation across the world have re-distributed financial resources, produced new forms of knowledge (as gerontological expertise), and reinforced associations of aging with frailty and dependency. Anthropologists cannot simply dismiss a construct of old age because it is not literally true when it is made symbolically important in discourse, and then given material and social significance through policy and professional intervention. As such, old age as construct has a social life in a similar way to how Arjun Appadurai suggests we study "the social life of things" (Appadurai 1986) made politically and socially significant through culturally mediated exchange. His concept of describing the "cultural biography" of material things as they move across time and context can be usefully applied to identifying a cultural biography of old age and its relationship to the 'real' aging of body-selves in the body-politic.

Towards a Cultural Biography of Old in the Aging Social Body

Previous work by social historians and critical gerontologists provide groundwork for describing the cultural biography of old age as a construct (Katz 2005). They focus not as much on aging as an individual, body-self experience as a highly social and political process. In the United States, for example, W. Andrew Achenbaum (1982) explains the importance of industrialization and subsequent labor policies of business and then government limiting the workforce beyond a certain age. During the early 20th, century, professionals also replaced older people as the experts on growing older. Correlated with this was the association of old age with decline and loss as scientific experts and technical experts promised to address problems and promote the health and well-being of elders. Acting out of genuine concern and in service to promotion of their fields, professionals convinced the general public that old age was a time of incurable disease and that long life was not necessarily the reward for living well. As a result, "new scientific theories and data forced people to reevaluate their opinions about the elderly's values in other capacities" (Achenbaum 1982) such as their own expertise on health and well-being learned through life experience. Stephen Katz (1992) traces the association of old age with disease and decline to changing policies and practices for managing the poor in the US Through reform efforts to remove and rehabilitate the able-bodied poor, the relative proportion of old people left in almshouses grew. The mainstream public then began associating old age with poverty and wasted life opportunities. Carol Estes (2001) explains how an "aging enterprise" among professionals has capitalized on fears of aging in the social body. When this is coupled with Lawrence's (1998, 94) observation that much of gerontological expertise has been exported from the United States and Europe through foreign policy and international conferences, a research area opens up on how the construction of old age in population aging and related discourses has taken an active role in shaping what may be a globalization of the aging enterprise. In Ghana, for example, an executive summary posted online as a government policy report on a national aging policy passed in 2010 lists several international conferences as sources of commitment to creating such policy (Government of Ghana 2010). However, the same report explains that lack of implementation had been due in part to "the apparent

lack of ownership by older persons" who had not yet assumed their presumed role as "primary stakeholders" (ibid, 8).

My research on elder mediation programs in the United States and Ghana provides another example of intervention on behalf of older adults who may not respond as grateful clients (Crampton 2007). Neither mediation project attracted many adults over the age of sixty as old, people in need of help. Instead, interest in elder mediation in the United States has been driven by mediators seeking to expand client bases through capitalizing on population aging trends. Professionalized mediation in Ghana has been brought in through Ghanaians trained in the US and USAID funding for court reform. The specialty of elder mediation was not successful within the pilot project even as mediation continued to be used informally as a local cultural norm. In neither study site were the mediation programs able to attract older adults who sought help as frail and vulnerable adults. However, there were adults over the age of sixty in each site interested in training and practice as mediators. And, the organizations in both countries drew from population aging discourse to explain the need for services. In addition, one volunteer in the Ghanaian organization, who happened to also be over age sixty, complained of "crafty old people" who exploit agency resources by faking helplessness. In other words, old age as constructed social problem provided funding and rationale for services, and adults engaged with these programs in ways more complex than as younger providers and older (dependent) consumers. The aging enterprise may have a marginalizing impact in discourse and at the same time produce more complicated social relations and interactions in practice.

Conclusion

In this article, I use Scheper-Hughes and Lock's (1987) call for study of the social body to suggest that anthropologists seriously consider population aging as a cultural construct of anthropological interest. Demographers construct this body from population statistics, and then policymakers and other professionals use it to think about how to intervene in the body-politic. This social body is thus not only a cultural artifact providing insight into cultural constructions of the nature of society but also shapes the lives of body-selves as policies and services become part of everyday life. The driver behind this may not come from older adults themselves nor from the lived experience of getting old, and yet it still has a social reality of ethnographic interest within the body-politic. Old age as construct has a social and political history that begins in countries identified as "the west" and is now going global. As such, it has a social life that provides a rich area for ethnographic research.

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The Uncertain Bodies and Spaces of Aging in Place

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Abstract
In the United States, "aging in place" has been established as the preferred method of aging. This article examines the work, processes, and tensions involved in aging in place in the southwest US, focusing on the experiences of chronically ill older adults receiving Medicare-reimbursed home health care. Based on an in depth ethnography, it examines the resources and work that go into aging in place amid uncertainty, and highlights how processes related to the integration of person and place are negotiated and contested between older adults, family members, and home health nurses. Drawing on definitions of place from geography, I argue that aging in place should be understood using a processual lens to highlight the ways that health regimes aimed at facilitating aging in place can, at times, reinforce and introduce sense of bodily risk, shift embodiment and daily practice, and require negotiations among household members. I also point to the difficulties people face in maintaining aging in place when supports are lacking and futures uncertain.

Keywords: place, home care, medicalization, United States

In the United States since the 1980s, there has been a growing political and social imperative for "aging in place." However, the value, experience, and processes involved in remaining at home for the elderly have not been sufficiently investigated, particularly in this time of economic insecurity, scale backs in social services, and uncertainty about entitlement reform. Aging in place is a period of change and the work, adaptations, and resources required to support and enable remaining at home can be fraught with complications.

Home health (HH) care often provides bridging care for persons with chronic illness. Following acute health problems, frequently involving hospital and or rehabilitation stays, HH professionals assist patients in their home on a short-term, intermittent basis. Receipt of increasingly high-technology care in the home allows an otherwise relatively immobile, ill person to remain at home. While these processes can lend a sense of assurance in the face of uncertainty, they also must be negotiated among household members and can involve individuals in new ways of experiencing and acting upon their bodies, and inhabiting their homes. When HH necessarily ends, people are often left to do the work of chronic illness and manage uncertain futures in an environment of few known supports and threats to benefit programs.

Background

Aging in Place

Throughout the 1900s, the percentage of older adults institutionalized within nursing homes grew steadily (Estes and Harrington 1981). Within the US, this trend was facilitated by gains in longevity, rise in chronic disease, medicalization of aging, changing family residence patterns, specialization of hospitals, increasing

government support for these facilities, and development of the nursing home industry within a medical model (Johnson 1987).

The idea of "aging in place" gained broad prominence in the 1980s along with positive development theories of aging (e.g., Atchley's continuity theory, concept of "successful aging"). These theories purport that frail older adults can remain more independent and enjoy a better quality of life, as well as avoid the trauma of relocation, by residing at home. They contend that especially for the elderly, an attachment to place is adaptive (Rowles 1993). Advocacy for aging in place took place amid broad social and economic shifts, such as deinstitutionalization efforts, concerns about nursing home quality and safety, and reforms in hospital reimbursement. Advocates argued against previous age-segregation approaches to the problem of aging and for more inclusive, integrated solutions. Policy makers facing fiscal crisis, were concerned about the high costs of health care and the expense of handling aging issues within facility-based medical models (Estes and Harrington 1981). They were also subject to lobbying efforts of the health care industry and providers of community health services. Providing care in the home and community became viewed as a more cost-efficient means for caring for older adults in their later years. Thus, advocacy takes into consideration both humanistic and economic concerns (Estes and Harrington 1981; Wiles 2005).

Elements of Place

The construction of place is a lifelong process. Homes as places are multifaceted, subjective and objective, as well as dynamic. They are sites for the weaving of social relationships and practices, and the production of narratives of self (Dyck et al. 2005). As such, place must be analyzed in relation to its physical and relational contexts (Wahl and Lang 2004). One such relationship is that between person and place.

While home is often conceptualized in a bounded way, as a personal and private space standing outside public life, it is better thought of as a permeable space, at times more or less accessible to the outside world. Homes are permeable both physically (e.g., through the introduction and exit of people, materials, and equipment) and ideologically (e.g., social values), and thus affected by broader conditions, supports, and demands. Because the home is not fixed or bounded, Moss (1997) has suggested the concept of home be pushed in a relational sense, to be "home environment." In the context of the elderly, particularly those with chronic conditions, understanding the relationship between the home and the outside world becomes important in understanding how aging in place is accomplished.

The imperative to age in place draws on cultural understandings of place and home. Within the US, the successful acquisition and maintenance of a home has become a sign of adulthood, competency, and independence. Home is often taken for granted as a safe and therapeutic landscape, a site where control and dignity can be maintained. In the context of aging, this stands opposed to hospitals and nursing homes (Fairhurst and Vilkko 2005; Wiles 2005). These institutional settings segregate residents, disrupt normal social relationships, limit residents' control over their space and time, and reinforce associations between old age and dependence (Hugman 1999; Johnson 1987). They evoke many negative emotions and are sometimes perceived as sites where one waits to die (Wiles 2005).

By contrast, living alone can signify mastery, control, and competence (Rubinstein, Nagy, and Kilbride 1992; Sixsmith and Sixsmith 2008). Definitions of place often stress a "rootedness" or "centeredness," and senses of belonging and purpose (Williams 2002). Aging at home is represented as providing opportunities for individuals to construct their daily activities and networks of support in ways that are individually meaningful and coherent (Rubinstein, Nagy, and Kilbride 1992), and giving a sense of comfort, security, and privacy (Sixsmith and Sixsmith 2008). It is also described as ensuring continuity in environment, independence, and social ties (Barrett, Hale, and Gauld 2011), and generally a better quality of life.

The discourses that take aging in place as the ideal have linked old age as a problem of place, and made it imperative that the domestic sphere be the "arena for aging" (Fairhurst and Vilkko 2005:2). Successful aging is realized whence one is able to continue in place, when one is able to "stay put." However, despite homes' positive associations and the comfort they can provide, homes are not always safe or comforting places, especially when supports and resources are scarce (Sixsmith and Sixsmith 2008). Lack of access to safe, accessible and affordable housing and transportation have been identified as barriers to aging in place (Farber et al. 2011). While there are broad rhetorical supports for aging in place as both a humanitarian and financial good, acknowledgement of the social and material supports needed for its realization are lacking.

Aging Bodies in Places

The materiality of a place is dynamic, changing with the composition of people and things within it and the resources available . When person-environment fit, place contributes to well-being and is thus therapeutic (Williams 2002). The fitness of places and people are in constant flux, as both people and environments change. People actively create their homes and surrounding environments toward certain ends, arranging materials such that activity and pursuit of interests are facilitated (Rosel 2003). The process of place integration is a lifelong one (Cutchin 2003), however for older adults with chronic illness, particular shifts are highlighted. While discourses attempt to present a more positive representation of the process of getting older through the ideal of aging in place, aging in itself remains a highly marked endeavor, inscribed at every corner with risk. Perils such as loss of senses, falling, dementia, dependence, abuse, and being forced from one's home are socially salient and associated, at a societal level, with the conception of aging.

The medicalization of aging emerged in the twentieth century with changing family patterns, the marginalization of older adults, the rise of gerontology as a discipline, and, ultimately, the construction of "old age" as a problem (Arluke and Peterson 1981; Estes 1979; Estes and Binney 1989). Narratives within medicine identify the aging body as physiologically distinct, which helps to legitimize the surveillance of older adults for signs of deviancy. Such signs are then medicalized and intervened upon (Powell and Longino 2001). Tools such as geriatric assessments are used to uncover abnormalities and extend the medical gaze from the person into his or her behavior, social system, and environment (Kaufman 1994). As medical institutions' processes define, manage, and treat within the narrow medical model, the potential increases for the management of the elderly (Estes and Binney 1989), particularly within the home.

As functional status declines, items in the home can become barriers, with adaptations necessary for best fit and practical utility. Once mundane objects can become hazards. These new dangers reinforce and make more visible the riskiness of the bodies associated with them, and by extension, the vulnerability of being old (Barrett, Hale, and Gauld 2011; Fairhurst and Vilkko 2005). As one's space is conceived of as a place of potential risk and harm to the self, it can in turn affect the embodiment and practices of the older person within a once known and familiar space (Sixsmith and Sixsmith 2008), and enhance the sense of uncertainty.

The inscription of bodies and spaces with risk provokes attempts to control those dangers with therapeutic checking and treatment practices (e.g., medical assessments and monitoring, medications, exercise) and material adjustments (e.g., assistive devices). These changes generally aim to bring person-environment back into better fit, however they might have unintended consequences (e.g., create new hazards) and be resisted by household members because of what they symbolize or how they change existing home practices (Sixsmith and Sixsmith 2008). Throughout these processes, there is a tension between risk, uncertainty, and control.

As efforts are made to help people age in place, new care practices and materials enter the home space from the medical sphere. As yet, there is little literature on how the home becomes site for new caregiving regimes (Wiles 2005) and how this affects bodies within spaces. Below, I examine the dynamic nature of aging place within the context of home health care.

Mediating through Home Health Care

Medicare, the US insurance program for people older than 65 years of age and/or disabled, has a home health (HH) care benefit. HH is one of the few home-based supports for which Medicare reimburses. Persons deemed to be homebound, with intermittent (acute) skilled need can have HH ordered by a medical doctor, if their condition is expected to improve under that care. Care is provided by non- and for-profit Medicare-certified HH agencies.

Depending upon needs determined by a standardized assessment, HH services may include skilled nursing care, physical and occupational therapies, social services, and HH aide help. There is no limit on number of visits for a beneficiary during a care episode. Persons with Original Medicare plans (i.e., administered by the government) are given 60 day care episodes which are reimbursed according to assessed needs; HH agencies decide how many visits to allot during that period and/or whether additional care episodes are needed. Persons with Medicare Advantage plans (i.e., administered by private insurers contracted with the government) are often authorized for a handful of visits at a time, though this depends on the nature of the plan (e.g., HMO, PPO); HH agencies can request additional visits as needed.

The strictures of Medicare HH benefit, which stand as a model for other US private insurers, lock the provision of care in a medical framework (Cabin 2007; Hood 2001). While nursing care in the home has traditionally been

more custodial in nature, the Medicare benefit was always intended for acute not chronic care (Cabin 2007). Thus, the acute, intermittent limitations placed onto the benefit affect how patients are assessed and treated. Because care takes place in private homes, provision brings health care field logics and practices into the home (Exley and Allen 2007), where they interact with existing practices (Angus et al. 2005; Martin et al. 2005).

HH, in the form of nurses, routines, medications, can be welcomed and needed. At the same time its treatment processes can be contested as they meet conflicting desires and practices of patients and their families (Exley and Allen 2007). Home care often affects the existing modes of activity and manners of engaging with the space, posing a threat to privacy and sense of identity (Dyck et al. 2005). All of these impact and structure sense of embodiment and lifestyle to varying degrees as will be discussed below.

In examining the complexity of this encounter, we can begin to deconstruct the static notions of place that seem to adhere to "aging in place." Much of the existing literature takes aging in place as an objective, something to attain, without examining aging in place as a complex material and social process (Wiles 2005). Taking the concept of place from humanistic geographers, we can start to understand home in a relational sense, as a site of social relations, and one's perspective shifts to the processual and formative nature of aging in place.

It is too simplistic to think of "aging in place" as something that just happens. Following the work of Cutchin (2003) and Stafford (2009), I argue for understanding aging in place as a process that is not without tradeoffs. People work with available material and social supports to adapt bodies and spaces amid changing circumstances. During times of economic crisis, this work can be especially tenuous and fraught. I also follow Kearns and Joseph (1993) in examining the processes involved in health care, illness, and caregiving, and the impact those have on the experience and meaning of bodies and homes. As the provision of HH is aimed at preventing the institutionalization of older adults, as bodies and needs change, the flows of resources into the home and the practices and relationships within the home shift. HH care is a support that helps bridge institutional and community-based care, assisting in the reintegration of acutely ill persons back into the community and preventing future facility-based care. HH nurses accomplish some of this work by identifying bodies and spaces as risky, and introducing new devices, spatial arrangements, and practices. Patients and their lay caregivers are critical to these efforts, particularly given the private nature of the space. People manage these experiences and practices in a variety of sometimes contradictory ways, such as through active participation, tolerance, and resistance that vary according to circumstances.

In this article, I explore the experience of aging in place and how it is mediated by HH care. Using ethnographic data, I flesh out issues identified in medical geography, nursing, and sociological literatures, providing a picture of the nuances of the experience of aging in place through the mediation of HH care. I do so by first asking how the experience of and practices within the home shift with ill health. Within that context, through what methods does HH care intervene and affect aging in place? Finally, how do people experience, contest, embrace, and regulate these interventions?

Methods

Data for this paper have been principally derived from 12 months of ethnographic fieldwork in a metropolitan area in the Southwest US (November 2009 to November 2010). The study was approved and conducted in accordance with the University of Arizona IRB.

This paper rests heavily on observations gathered during job shadowing of nine HH nurses from two Medicare-certified, for-profit HH agencies. Job shadows were also utilized to recruit patients into the study. Patients aged 65 and over, with Medicare or Medicare Advantage Plan paid HH episodes, were eligible to participate. I asked nurses to recommend participants with chronic illnesses and at risk for future hospitalizations or acute health crises. Twenty-two patients (10 men and 12 women) initially agreed to participate in three interviews over the course of five months. Patients ranged in age from 65 to 94, with a median age of about 82. All patients were white. The older adults had a range of formal and informal support arrangements: 41% (n=9) had a child caregiver, 36% (n=8) had a spouse caregiver, 9% (n=2) had a friend or other type of informal caregiver, and 41% (n=9) had a paid caregiver of some type. Housing also varied: 45% (n=10) lived in freestanding homes, 27% (n=6) in age-restricted manufactured home parks, 18% (n=4) in apartments, and 9% (n=2) in independent living facilities. Patients occupied a range of socioeconomic situations, from low income and living off government assistance, to middle income and mostly living off Social Security and some additional retirement assets, to high income.

Many were being treated for pressure ulcers or open wounds, while others were recovering from and being monitored following strokes or falls. However, their situations were generally complicated by chronic conditions such as heart and other circulatory issues, pulmonary diseases, as well as diabetes and various cancers. Their episodes of care varied dramatically, from a handful of visits spread over the course of a few weeks to six months or more of biweekly visits.

I conducted 55 semi-structured interviews with patients. While I attempted to interview each informant three times, given patients' health problems, scheduling follow-up interviews proved difficult. Fifteen patients participated in all three interviews, one declined participation after the first interview, two had health problems that precluded participation after two interviews, and four could not be reached after one or two interviews. Interviews with patients lasted between 40 minutes and three hours (averaging about an hour). Interviews covered a wide range of topics, including patients' experience receiving HH and aging, thoughts and feelings about their homes, and hopes and fears for the future.

Nine nurses (all women and white) were each shadowed through the course of a standard work week. I spent between one to four days shadowing each nurse, for a total of 23 days. During the 77 patient visits I observed, I made deeply descriptive notes on setting and interactions between nurses, patients, and caregivers. This allowed for the documentation of mediation of HH care in real time. In between visits, I rode with the nurses in their cars and conducted informal, unstructured interviews.

Nine current HH nurses (four of whom also participated in job shadowing; seven women and two men) and six women with previous nursing and HH experience (n=15), also participated in semi-structured interviews of about an hour in length. Approximately 73% were white (n=11), 7% were Asian (n=1), 7% were Native American (n=1), and 13% were of indeterminate racial or ethnic background (n=2). Interviews centered on their experience being a HH nurse and their practice. Additional interviews (n=29) were conducted with family and other direct caregivers to provide additional perspectives and insights into the experience of HH care specifically, and aging at home more generally.

Audio and detailed notes were taken at all interviews, and audio from the interviews were partially transcribed. Interview, observational, and other fieldnotes were uploaded into an Atlas.ti database and coded. Codes were constructed based on original research questions, themes drawn from the literature, and emergent topics from fieldwork.

Bodies out of Places/Spaces

Many patients are provided HH care following an acute health problem and stay in a facility, such as a hospital or rehabilitation center. The time away from home for treatment took people out of their daily lives and familiar contexts, reduced their access to privacy, and limited their control of space and activity. Most patients and their caregivers were happy to return home, but their experiences were sometimes conflicted and often marked by uncertainty. While homes were sources of comfort and stability for patients, continued ill health and social isolation could contribute to their feelings of discomfort, fear, sense of risk, and boredom.

For the most part, patients described returning home as an opportunity to relax into a known and more controllable environment. Being in a personal space, amid customary sounds and smells, with family and pets, and part of household rhythms lent to a sense of being rooted in place and grounded in a personal history (see also Stafford 2009). Evocative objects in the home, such as photos and memorabilia from travel, contributed to this. Donald, a 93 year old, described returning home as "a little breath of heaven." For other informants, the sensation of relief was palpable but difficult to articulate.

People found consolation in plush chairs, stretchy clothes, and supportive beds, and pleasure in sitting in the sun, reminiscing or receiving affection from pets. However, they described the tiresome monotony of being housebound, where days might feel "endless" or, as one described, like a series of transfers from bed, to living room, bathroom, and back again. Doctors' appointments were sometimes welcome opportunities to leave the home but were also exhausting. With limited mobility and assistive devices, trips outside the home required time, effort, and planning. In general, many of the people I met at least initially had their days structured by previously mundane activities, such as getting out of bed, taking medications, and watching television shows. These became new orienting points that set both a comforting and sometimes tiresome tempo to their days.

While returning home was a hopeful time for many, marking a step toward possible wellness (Cartier 2003), it was also a liminal period. With hospitals releasing patients "quicker and sicker," a large percentage of patients were

quite ill and waited in dread for the next health crisis. Some with few social and economic supports also worried about obtaining help. Andrew, an 85 year old man, said, "I felt that I was being discharged [from rehab] and I was on my own. I had no idea that we were going to get any help after my discharge." His 91 year old wife added, "We were both very scared. Scared, insecure. Alone, NO help of any kind." Many faced similar uncertain futures, not knowing their needs, insurance benefits, or where to begin to find help, and dealing with living as an at-risk person.

Physical constitution and mobility were affected by a range of factors, such as weeks of being relatively bed bound, medications (and their synergies), infections, broken bones, and changes in blood flow. Embodiment also changed, with one woman saying that after she returned home from the nursing home, on water pills, with constant diarrhea, and nearly bed bound, she felt like a "wet noodle." Others provided anecdotes about their bodies acting in unexpected and perplexing ways. These changes could leave one feeling at-risk, particularly for falling.

Falls presented logistical difficulties for caregivers, and were a particularly salient social and physical signifier of vulnerability and dependence. Those with a history of falling articulated a fear of falling and a sense of embodied risk. Abe, an 87 year old, described these sentiments to me during a friendly afternoon visit:

> I worry about falling. This "whole mess" started when I fell and broke my hip. Now when I fall, because my wife can't get me up and my leg strength is so diminished, we have to call 911. One day, before going out, my wife left me in her bathroom. I fell and was stuck, because her bathroom doesn't have grab bars like mine. I crawled out into the bedroom and fell asleep on the floor. When my wife came home, she thought I was dead. She was very upset. We called the firemen to get me up. It really does something to your ego to be in such a situation and to see your physical capacities diminishing. I have this swelling in my legs that I don't know what to do about. I can't find a position that is comfortable and that will allow me to still do things. And I'm worried about my wife, she does so much for me, I don't want her to break.
> (from fieldnotes, Abe, older adult)

This conversation illustrates the emotional complexity and sense of lingering vulnerability involved in falling that was echoed by other informants. Abe expressed a sense of embarrassment, shame, frustration, and guilt at his circumstance that he felt more generally in day-to-day life, but that was brought to acute awareness in the event of falls.

Fall risk also brought to focus how mundane objects in the home, such as stairs and rugs, could be transformed into hazards and barriers to action (Williams and Wood 1988). To negotiate, people described adapting their behaviors in their spaces in order to accomplish tasks and practices, and reduce embodied risk. They might only shower when they knew someone else was in the home, walk around the edges of rooms to use walls as support, and avoid spaces with rugs.

Regulating Flows and Surveillance

The opening of the home, a domestic and private space, to the unfamiliar nurses has the potential to change the meaning of home (Milligan and Power 2009). Nurses, generally, enter patients' private spaces as strangers, their presence and authority legitimized through their occupation (Fairhurst and Vilkko 2005). Through surveillance of the patients' lifeworlds, nurses suggest physical and behavioral changes to enhance patient (re) adaptation to their condition and environment, and prevent patient displacement to facilities.

HH care personnel and practices were not always warmly embraced by patients. As noted, transitioning home can be a scary and overwhelming time for patients and their caregivers. Often patients were not able to clearly articulate how HH came about. For many, HH referral most likely occurred during discharge from a hospital or rehab facility, a time many described as rushed, emotion-filled, and confusing. Informants described varying levels of activity in managing their use of HH. Some accepted HH because doing so allowed them to leave a facility, others did so at family members' urging. Many were uncertain who would pay for HH or whether taking HH would erode their Medicare benefits and negatively impact their access to other health care. It was not surprising that many informants returned home without a clear sense of what would transpire.

Despite the potential power of nurses to intervene, almost everyone I spoke with in doing fieldwork (e.g., patients, nurses, community providers) constructed HH, as opposed to facility-based care, as empowering to patients. Nurses continually positioned the home as the purview of patients and highlighted patients' freedom of choice in complying with treatment. However, given the fragile states of many of the patients, it was often evident that informants did not have many practical choices.

In some cases, nurses' presence in the home was limited to a handful of visits and only a minor disruption. Episodes which lasted longer might be integrated into the normal rhythm of the home. For patients and caregivers who spent most days at home, these visits could be an opportunity to talk to someone new, vent frustrations, get practical tips, share a laugh, and find sympathy. However, at other times, I found interactions stilted and uncomfortable. Some patients complained of nurses who had been unprofessional or were inconsistent in their visits. No matter how much the nurses were liked, depending on the frequency of the visits, the number of HH people involved, the patient's condition, comfort level, and support from caregivers, the visits could also be exhausting and disorienting. However, patients and caregivers' complaints were often slight and most expressed gratitude towards HH as a useful support to their condition and home life.

With the entrance of nurses and other HH personnel into the home, the medical gaze extends into the normally private space of the home and lifeworld. The surveillance can be difficult for patients who might feel at their worst and for caregivers who might perceive they are being judged. But being overseen by medical professionals was also a source of comfort, especially in a context of uncertainty about health and desires to regain wellness.

Surveillance in patients' homes allows experienced nurses to identify potential problems. They can spot possibly risky behavioral practices or noncompliance which might be effectively hidden in other medical settings. Nurses valued this because patients were often viewed as unreliable sources for information. Nurses explained that patients might not fully disclose to them to avoid shame or because they do not know or fully understand their health history and why certain pieces of information might be relevant.

Surveillance was a negotiated process. Patients attempted to collaborate with, limit, and shape HH professionals surveillance through management strategies. They might define spatial boundaries for the visits (e.g., not give access to certain parts of the home), clean spaces before visits (e.g., throw out bottles of alcohol), and physically present themselves in particular ways during those visits (e.g., bathed and dressed, feet elevated) to garner more or fewer interventions. Nurses likewise chose where to and not to intervene. I observed nurses opting to attend to and follow up on, or to ignore cues suggesting home life difficulties. Nurses were sometimes caught in the middle of conflicts between their patients and their families, which could be difficult to navigate. In several instances I observed nurses trying to change the course of conversations when patients started to discuss family problems, even in cases where the issues might point to abuse or neglect.

Measuring was essential to surveillance efforts, as well as in reinforcing and mediating informants' embodied risk. Informants' bodies were already marked by diagnosis, physical condition, and roles when they entered HH, and each visit their bodies were further highlighted as they were scanned visually and tested with instruments for signs of improvement or ill health. Urine clarity and odor, consistency of feces, blood pressure, wound drainage color and texture, and smell of bile were all potential fodder for evaluation. Body relations during the act of measuring and treatment were frequently intimate. Nurses kneel and bend by, and come into bodily contact with their patients. Expressions of pain could be audible, but also palpable in gripped tables and chairs, grimaces, and quivering limbs. While instruments (e.g., pulse oximeters) were routinely used to obtain precise measures to document, nurses relied heavily on their sensory observations and conversations with patients. They looked beyond the physical body for signs like poor grooming or tense social relationships that might suggest abuse or neglect. Identification of signs that were perceived as problematic for treatment opened up opportunities for intervention (e.g., occupational therapy, social work, Adult Protective Services) to ensure best fit and reduce risk.

Informants became habituated to being objects of surveillance and topics of intimate discussion, and were called upon to engage in self-measurement. I frequently spotted blood pressure monitors and glucose meters in dining rooms and kitchens. For informants, the measures became new frames in how they viewed their bodies and cues for assessing their health. Often this was a continuation of a practice they had been socialized into in facilities and doctors offices. They showed varying interest in the measures. Some would become visibly anxious if the measures differed from what was normal or would show relief when the scores had not changed. The act of measuring reinforced the construction of the body as at risk and socialized informants to new relationships with their bodies and home practices, while also providing a sense of control.

Embodiment was further affected by prescribed changes to bodily comportment, such sitting and walking. Nurses and other health professionals worked to reset informants' expectations for their bodies, encouraging them to pay attention to their feelings and to rest when

feeling tired, and dissuading them from thinking about what they could no longer do. Many were prescribed physical therapy exercises that could be difficult, draining, and discouraging. Some of those with histories of falls expressed fear about having to do these exercises. For example, 88 year old Beatrix refused physical therapy when it was offered because the therapist wanted her to practice walking on the road by her home. Throughout our interviews, she expressed generalized anxiety about her condition and lack of social supports, but a very particular fear of falling that contributed to a reluctance to leave her home. By contrast, other informants were diligent in their exercise, described it as their personal responsibility to perform, proudly demonstrated to me what they were able to do, and seemed to hold out hope that they would continue to see improvement in their conditions if they maintained their exercise practice.

While there were certain formalities and obvious surveillance activities, HH nurses often adopted informal approaches to interacting with and gaining information from patients and their caregivers. This helped them negotiate the control issues that came with practicing in home spaces. By gaining access to patients' places, nurses had access to a broader perspective of patients' contexts, allowing a more patient-centered intervention, tailored to addressing the fit between patients and their environments, thereby reducing risk and, hopefully, supporting aging in place. These practices also worked, however, to create a representation of informants' bodies, and in a less direct way aging bodies, as risky and needing of monitoring and control. Combined with factors such as physical condition upon returning home and other particular circumstances, this also shifted informants' embodied experience and involved them in new, medically oriented practices.

Changing Spaces

The penetration of intimate space occurs through increased gaze on informants' bodies, as well as in the reconfiguration of spaces and activities. Assistive devices were integral in helping to improve body-environment fit to lessen perceived risk. They also helped people improve their range of activity and independence of action, in some cases reducing what they felt was a burden on their caregivers. During the course of HH, nurses might suggest using preventive materials and other durable medical equipment, such as cushions, air mattresses, and motorized wheelchairs.

The homes I visited were populated with such artifacts. The introduction of aids changed spaces both materially and practically (Fairhurst and Vilkko 2005). I often navigated walkers and scooters when visiting informants, and frequently found myself surprised when I encountered hospital beds in living and dining rooms. Materials not only changed spatial arrangements and flows, they also brought in new smells and sounds, like the sucks and hums of an oxygen concentrator.

For many, devices and equipment were constant companions. Emma, a 76 year old with Multiple Sclerosis who had received HH for a pressure wound, was sitting on a gel cushion on her couch, with her feet propped up on her motorized scooter, next to her hospital bed, as she explained the equipment that meant most to her:

> "The bed, the scooter, the bathtub bench, things that make me feel…comfortable, I can take a shower without anybody's help. I feel like I'm independent that way. And this cushion I'm sitting on, I couldn't sit on the couch by itself, because that would make pressure points on my behind. [Chuckles] […] Right now, I don't feel like I need anything. I feel pretty well in control of my life."
> (Emma, HH patient)

These materials were enabling for her, assisting her in having independence and the ability to direct her life. Even though she spent most of her time in the privacy of her home, the devices were likewise important to her in her social sense of self. During a previous visit she had explained that her cushion enabled her to get out of bed and, even though largely housebound, to sit up and, as she put it, "feel like I'm part of society."

However, people expressed fears about adopting and adapting to assistive devices. Emma, who above described the instrumental qualities of these materials, later talked about how difficult it had been to decide to get her first motorized scooter:

> "it tired me out to walk around. [Pause] It really hurt my legs […] And when I got on the scooter I felt, oh! So relieved. I didn't like givin' up- I didn't, you know, I don't know if I gave up. I gave up walkin' because it was more comfortable to drive around, it hurt my legs to walk around."
> (Emma, HH patient)

As Emma describes, adopting an assistive device could be experienced as a sort of defeat, giving up on certain capacities. However, taken practically, devices could provide much relief, make one better fit in their environment, and increase functioning.

While assistive devices were generally enabling and lent a sense of security, they could also be limiting, even risky, and fit awkwardly into existing life. Devices could become burdens and challenges to navigate both physically and socially. Spatial challenges might include maneuvering a walker through a narrow doorframe, while practical maintenance issues could mean figuring out how to replace spent oxygen tanks. These could be difficult even when family members were available to help. In addition, sometimes it took time, effort, and bumps and bruises to acquire the body knowledge to use a new device. People described abandoning devices because they were frustrating or otherwise did not fit into their life.

Equipment often had to be negotiated and sometimes interfered with engaging in meaningful activities. For Marsha, while large oxygen concentrators provided her body with oxygen, they could be social barriers:

> "My two best friends […] do things together. I'm never invited any more. I'm left out. Because they'd have to take my walker and take my oxygen and be, they're afraid that I will fall again and get hurt. So my social life is zero." (Marsha, HH patient)

Thus, her perceived riskiness, proven by her falls and health problems, and symbolized in the materiality of the devices, as well as the logistics of moving with the devices, disrupted her normal social life.

Informants and family members varied in the degree to which they were willing, and able, to change the environment and behaviors. Seventy-six year old Celia explained that her home was not the same as it was before her stroke. She said, "I like my house but it's a prison for me now." She walked me around her home, showing me the paint and drapes she had put up when she moved in. When we arrived to her bedroom, she pointed to her handmade bed and gestured to the commode next to it. She explained, "My bedroom used to be a very welcome place, but now I'm almost afraid of it. I don't sleep that well." While Celia had many things going on in her life that left her quite unhappy and frustrated (including lack of familial support), the aesthetic disruption of the home she had so carefully nurtured seemed to be an irritant and reminder of her changed state. She struggled to accept the changes, much as she worked to negotiate her new sense of embodiment.

Many homes were family spaces and changes had to be negotiated with other household members who might not be supportive. Theodore explained that the rugs layering his home's floors, while functionally a hazard to him and his sometimes dragging leg, were kept at his wife's insistence. He felt for the sake of the relationship that he had to support her wishes and as a prompt to pick up his leg. However, during my next visit, I found him shaken after tripping on a rug. Coffee still stained the kitchen floor where he had fallen, vomited, and lain for five minutes waiting for the dizziness to subside. While in talking to me Theodore transformed the rugs from objects of risk to objects of pleasure and body-helpful challenges, they were still obstacles that at least periodically reminded him of his changed physical state.

As noted above, home routine was altered for persons receiving home care. People's altered movements within and without their homes were to a degree structured by new assistive devices, medicinal regimens, and treatment. In a context where aging is stigmatized, these new objects and behaviors sometimes evoked negative emotions and a sense of heading down a road of increasing dependence (Wahl and Lang 2004) and restricted social life. They could be symbolic reminders of reduced capacities and, often, a feared future that might include increased dependence and institutionalization, which were markers of the end of life.

The Other Side of the Bridge

Many patients and caregivers look forward to discharge from HH. Technically, discharge occurs when there is an end to a skilled need, when the specific problem has been resolved, or no further improvement is expected. Discharge is a signpost for the end of an ordeal, a closure, a successful refit into environment, and a return to "normal life."

In practice, vestiges of one's experience and the mediating role of HH linger. These can be physical, such as in scars from a wound, indentation in a bone from a fall, "glue" stuck on skin from a dressing, or a new wheelchair. Or they can be practical, such as adjusting to new devices, technologies, and medication regimes, and dealing with medical bills. They can also be behavioral, as in continued participation in therapeutic exercise or self surveillance. Many informants were discharged whilst resetting themselves to a new normal and described a future of a "long down slope" with constant renegotiation of fit with home environment. As 81 year old Paul said, "the longer time goes on, the more I realize I'm never gonna get to the point of where I think I used to be."

During our last meeting, Marsha expressed similar sentiments. With a very limited income, some insurance

coverage, and her daughters' help, she had managed to continue physical therapy for about a month after her HH episode. However, she could not continue that and was frustrated to see how her assistive accoutrements and physical difficulties affected her life:

> "And it'll never get better, that's, THAT'S what really bugs me. If I thought I could have this [oxygen concentrator] on for a month and then it'd be gone, I wouldn't mind it at all, I wouldn't mind tripping over it and stuff like that. I'm just NOW, all this time, I'm just now coming to the (Slight pause) realization that I'll be this way forever. And I think that's hard." (Marsha, HH patient)

For Paul, Marsha, and others, their embodiment had shifted in the course of their chronic illnesses and the future provided an unknowable, uncertain, and new landscape. In some cases, the end of HH and the future of aging at home were ambiguous and the sense of uncertainty, reinforced and constructed during HH, persisted. This appeared most commonly among persons with newly identified or problematic chronic illnesses and short episodes of care (e.g., a handful of visits over the course of a couple weeks). Discharge could occur abruptly and unexpectedly, either at the behest of insurers, nurses, or patients and their caregivers.

Those with access to caregivers (whether informal or paid) might be able to continue care regimes within the home, often on a more limited basis, which provided some assurance and sense of control. In some cases, family members seemed confident in taking up these roles. Others seemed more overwhelmed with the tasks at hand, especially when other social supports were lacking. Stu, a 90 year old, was discharged under ambiguous circumstances. Blanche, his wife and sole caregiver, seemed overwhelmed and confused. She explained that she had liked the nurse very much, but had not been adequately trained in how to care for Stu and his breathing machine. She felt that she had cared for their nurse on a personal and material level, and suggested she expected the nurse to reciprocate in kind. This relates more broadly to the emotional and ethical landscape of care. HH occurs within intimate space and the personal-professional lines between patients and HH staff can be blurry.

I saw many informants and family caregivers grappling with their conditions, needs, and available supports. In some cases, HH nurses could help by offering limited social work assistance. However, community resources were scarce and many informants failed to qualify for them. To varying degrees, nurses could also try to help by extending the HH episode if they could document need and the insurer authorized it. While these extra bridges could be helpful, they were not available to everyone or for the long term. This left those with continued long-term needs, with limited economic and social resources in a lurch.

As such, the situation upon exit might be tenuous, at times frustrating, and lead to a cycling between home and facilities with new health crises. Such relocations are disruptive and, in part because of poor coordination of services, make management of chronic care difficult and require a negotiation of a web of different service providers (see Cartier 2003). Several informants contemplated movement into an assisted living facility or nursing home, sometimes at the suggestion of HH nurses. Dyck (1995) described residential movement as an active strategy women in her study chose in order to maximize independence and fulfill social roles. Often relocation was described as something necessary because of an inability to maintain a larger home and reluctance, or inability, to ask family members for assistance. In a sense, they were choosing a different type of mediated aging experience given a range of possible, usually limited, options.

The policy imperative to age in place in some cases might represent a trap (Fairhurst and Vilkko 2005), providing for few options and supports outside of the home. As Martin (2005) noted, home is often reified as necessarily therapeutic, but that is not always the case. I encountered a handful of cases in which informants described themselves as being stranded, unable to access possible family caregivers who lived in other parts of the country, because their conditions (physical and economic) made movement impossible. In some cases, the amount of care available might be insufficient and around the clock, supportive nursing care in a facility might be a more positive option (Bamji 2010; Flynn 2007).

Conclusion

This article documents how aging in place is a process that for chronically ill older adults is frequently an uncertain and marked endeavor, often involving physical, behavioral, and social adaptations. HH mediates this experience by helping control risky bodies and environments, while helping maintain person-place integration and quality of life, whilst also taking advantage of the healing qualities of place. However, its introduction is experienced, negotiated, and contested in multiple ways. It works to reinforce and at times introduces a sense of bodily risk,

and helps to shift embodiment and daily practice.
I discussed how patients were socialized into being the objects of the gaze of health professionals through repeated and varied interactions with the health care system (e.g., doctor's visits, nursing home stays). I observed and nurses described ways patients attempted to shape how they were evaluated and receive fewer or more interventions. Future research could examine these processes in more depth, with focus on the efforts employed, for what purpose, and to what success or failure.

While HH care can assist a person to refit changed body conditions into home practices, the lack of availability of long-term supports for many older adults makes aging at home complex and uncertain, and perhaps marked by multiple hospitalizations and acute health crises. The older adults I met were very worried about the stability of their own financial resources, concerned about burdening adult children (many of whom were unemployed or at risk of becoming so, or embroiled in other health or social issues), and had no idea what services were available or where to go to look for help.

In a time of economic crisis, government cutbacks to programs such as Medicaid, and concerns about Medicare reforms, despite intentions for older adults to remain in the community, some were concerned they would be forced to be institutionalized in facilities of uncertain quality. While many were not aware of services offered by various agencies, such as meals, transportation, and friendly visiting services, community providers consistently told me these services were restricted and limited. For certain individuals, such as those who expressed feeling isolated and at risk because of lack of physical, social, and economic resources, longer term community supports would make aging in place more easily and reliably attainable.

Remaining at home is a complex experience for people and not wholly positive. This does not mean that people, in general, see institutional settings as a better option, but neither are they and their family members satisfied with the limited range of options and opportunities for at home support. However, making home-based long-term care more accessible is only part of the solution. Disparities experienced across a lifespan contribute to individual aging experiences. Addressing broader political, social, and economic disparities, and exploring how these manifest in peoples attempts to age at home is an area for future research.

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The Familial Dyad between Aged Patients and Filipina Caregivers in Israel:
Eldercare and Bodily-based Practices in the Jewish Home

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Abstract
As the population in the US ages, there is increasing need to study aging In this article I describe a familial dyad between the Filipina caregiver and the Israeli aged patient. I argue that a familial dyad emerges based on bodily forms of care. This familial dyad becomes a mechanism for adaptation to and enduring of the daily and intimate encounter of a foreign caregiver and an aged dying patient. The familial dyad provides insight into the phenomenology of the care experience as a function for re-conceptualizing social relations and intra-family dynamics. This will broaden our understanding of the possible varieties of bodily-based practices and their relational repercussions as interpersonal care engagements. The form of a familial dyad underscores the dynamism and complexity of care practices as intersubjective and corporeal modes through which one body engages the other. These care practices which are based on repetitive physical actions allow immediate first-person access to the other participants' subjective state. Thus, in an era of globalized care, the familial dyad takes form and shape at the most intimate juncture between the subjects, their corporeal and interpersonal being.

Keywords: Israel, bodily-based practices, eldercare, Filipina caregivers, empathy, family, dyad, work migration, Jewish home, phenomenology of care

Introduction

During the night, on September 2004, Jina called for an ambulance after Sima had trouble breathing and then accompanied her to the hospital. Sima was hospitalized and I came to visit them the next morning at 11:30 am in the ward. After an hour, the nurse entered the room and declared that visiting hours were over. While I prepared to take my things I asked Jina whether she was planning to stay again that night. She answered without hesitation "Yes, of course until Ima [mother in Hebrew] will get out" The nurse immediately added, "who else will stay here, she [Jina] is the only true family she [Sima] has".

While leaving the ward, I thought about these family-like connections and relational terms. Sima has five children and Jina isn't one of them yet the nurse considered her the "only true family" Sima has. Jina is one of the migrant workers from the Philippines employed in Israel as caregivers for the country's aged, dying citizens, who reside in their patients' homes and provide them with round-the-clock care. On what basis are these familial terms applied to them? What is their meaning and practical significance? What do they convey about the relationship between the Filipina caregiver and the Israeli patient who have different cultural modes and conceptions regarding familial behavior? It is precisely against the backdrop of such cultural and language difference that this family-like relationship emerges, unfolding through the social and bodily nature of care practices.

In this article, based on extended fieldwork among the migrant caregivers from the Philippines in Israel, I describe the family-like relations in order to broaden our understanding of the possible varieties of bodily-based practices and their relational repercussions as interpersonal care engagements.

I argue that the family-like relationship creates a familial dyad between the Filipina caregiver and the Israeli patient based on bodily-based of care practices. This familial dyad becomes a mechanism for adaptation to and enduring of the daily and intimate encounter of a foreign caregiver and an aged dying patient. The kinship terms emerge spontaneously in the course of the interaction between caregivers and patients; their use is not the result of a decision reached in advance between them or with the patient's family members, nor as a precondition for the employment of caregivers, but as a sudden articulation that emerges through ongoing bodily closeness and intimacy. The term dyad provides insight into the phenomenology of care experience as a possible function for re-conceptualizing social relations and intra-family dynamics. As I will show below through the analysis of two ethnographies, the social and familial dynamics takes form and shape at the most intimate juncture between the subjects, and the fusion of their corporeal and emotional beings into a novel interpersonal entity which will be called here the familial dyad.

The form of a familial dyad underscores the dynamism and complexity of care practices as intersubjective and corporeal modes through which one body engages with the other. The care practices are located in the interactions between the Filipina caregiver and their patients. More precisely, in the interface between the intimacy of the aged body and the Filipina's body so the care practices are combined between the two bodies while the Filipina becomes an extension of her patient's body and daily movements. For example, they walk together at the same rhythm and the patients learn to eat according to the way the Filipina feeds them.

These care practices which are based on repetitive physical actions allow immediate first-person access to the other participants' subjective state and intention that could result in empathy. Empathy, argues Throop (2012, 408), is

> A multimodal process that not only involves perception, intellection, affect, and imagination but also the bodily, sensory, and tactile aspects of lived experience…It also highlights how particular cultural contexts, including ethnomedical and therapeutic ones, may significantly shape the expression, recognition, value, and experience of empathy as a basic existential human capacity for orienting to, interacting with, and experiencing others.

In this sense, the familial dyad emerges in the most basic therapeutic context of care. The repetitive care practices assist the person being cared-for and the caregiver to orient and interact and through that to develop a sense of empathy based on recognition, gratitude, attention and physical closeness. This care practices bringing them close together as a family despite the fact that the Israeli patient and the Filipina caregiver have disparate language and cultural backgrounds and their current intimate encounters have neither a common past nor a future (in contrast, for example, to a mother-child relationship). This relationship is all the more ephemeral because it is bound in time to the remaining life span of the patient. This temporality is due to the Israel's Immigration Administration's policy which determines that after the patient dies, the caregiver is eligible for deportation to the Philippines unless she finds employment caring for another patient. Accordingly, the caregivers referred to as "daughters" by their dyad-partners are not entitled to remain in the society in which their life-work takes place nor do they have any familial rights after the patient's death. Despite these circumstances, these daily and corporeal encounters, which can extend over months or years, constitute a profoundly familial relationship, with their participants often being described as "true family". Given these circumstances, the familial dyad is not an object that is "good to think with" metaphorically but a matter of practical adjustment for both the patient and the caregiver.

Following a brief description regarding the circumstance in which the Israeli eldercare system has led to the employment of caregivers from the Philippines and an overview of the research methodology, I will describe and analyze the ethnography of care practices to get a better sense of the role of the body in such a familial dyad.

The Context of Eldercare and Filipina Migrant Workers in Israel

The caregivers from the Philippines are mainly young, female, non-Jewish and noncitizen temporary workers employed as live-in caregivers for the country's aged, sick, and dying citizens. The option of recruiting Filipina caregivers is delivered through local placement agencies as one of the National Social Security (NSS) system services available for eldercare in Israel.

Based on the Israeli Nursing Care Law of 1988, Israeli citizens who cannot care for themselves in at least one out of five Activities of daily living (ADL) index of bodily practices - eating, dressing, walking, bathing or controlling urine or bowel movements - are considered in need of a permanent daily attendant partially paid for by state funds. This care can be obtained either in the

form of a nursing institution or by home care assistance with migrant caregivers most of whom migrated from the Philippines (today it is also possible to recruit foreign caregivers from Nepal, India and Romania).

In contrast to Israeli caregivers who staff a nursing home, the Filipina workers provide round-the-clock care while residing in their patients' homes until the patient passes away. Within this cocoon, performing mundane and intimate life activities entails ongoing close physical interactions. Before the passing of the Law, it was accepted that the family (especially female daughters) acted as the major caretaker of elderly members. However, in the subsequent period this function has been provided by foreign guest workers.

The outflow of caregivers from the Philippines to Israel not only meets Israel's local need for eldercare, but is also part of a growing globalized economy of domestic services. Female caregivers from the Philippines are employed worldwide as caretakers for young, healthy children and families or as housecleaners (cf. in Malaysia see Chin 1998; in Kuwait see Shan et al., 2011: in Los Angeles and Rome see Parreñas 2001; in Hong Kong see Constable 1997; and in Taiwan see Cheng 2003) transforming the Philippines into the contemporary modern "empire of care" (Choy 2003).

In Israel, female migrant worker from the Philippines is known as "Filipina". A "Filipina" has become the Hebrew generic term used to describe the employment category of in-home, female non-professional caregivers who perform "bodywork" (Twigg 2000). They work according to contracts which define their temporary and low-paying conditions. The term "Filipina" in Hebrew reflects the Philippines as the caregivers' country of origin, as if the ability to provide care is part of Filipinas' natural makeup.[1] This term is based on the cultivated reputation of the Filipinas as maternal caregivers, which has actively promoted their export in the global market for domestic, geriatric and family care service.

However, in contrast to their worldwide tasks, in Israel, only working with patients known in Hebrew as se'udi is considered legal. The Hebrew term se'udi refers to a patient whose dependent condition requires the attendance of a caregiver to support in meeting the requirements of basic bodily functions. In contrast with the visually or physically challenged, who are defined according to a physical absence, the "se'udi" patient is defined as such due to the necessity of his or her dependence on the care provided by the caregiver (cf. Mazuz, 2013b). The term se'udi as used here explicitly conveys the caregivers' and the patients' physical proximity and symbiosis. This symbiosis is manifested by the close and often long-term interactions between the patient and the caregiver who, though they are two different people, engage based on bodily and tactile forms that delineate the familial dyad.
Most of the Filipina work migrants I encountered during my fieldwork were not professional medical nurses. This emphasis how the globalization of domestic and care service from the Philippines illustrates how the feminization of care is based on the stereotypic notion of women as maternal, sensitive and de-professionalized caregivers. Upon arrival in Israel, they received a few hours of training at the manpower agencies before beginning their work with their patients. Occasionally, they receive further instruction from the physicians and nurses of the health maintenance organization. Most of the Filipinas' job description consists of providing basic care such as preparing meals, feeding, bathing, walking, and dressing, assisting with personal hygiene, changing diapers or taking care of toileting and cleaning the house. But over time and in tandem with the patient's deterioration they perform more responsibilities involving para-professional medical skills including dispensing medicine, installing bags to the feeding tubes or connecting the patient to a dialysis machine.

On one hand, the Filipina must develop culturally intuitive sensitivity (e.g., understanding facial and body language, sickness behaviors and gender attitudes) rapidly while caring for the patient body; a body she learns to know better than the patient's own children. As a result, she will be aware of any deteriorating change in the body which could be a matter of life and death. However, on the other hand, the Filipina's culturally intuitive abilities, which can be lifesaving, are not professionally acknowledged or compensated by the manpower agencies or the medical establishment on par with Israeli caregivers. Thus, from a bureaucratic point of view, any Filipina can be repeatedly replaced by subsequent Filipina woman.

Although the Filipina caregivers occupying the lowest ladder in the formal employment nursing structure, at the home of the patients they have become the exclusive, skillful and authorized caregivers. Over time, the Filipina foreign homecare has emerged as socially acceptable solution and respected standard of care chosen by Israeli-Jewish families, despite initial fears and suspicions on the part of the patients' family members (in this aspect see Ayalon, 2009) This, notwithstanding that this involves transferring the bulk of family responsibilities to outsiders

who become part of familial dyad.

Methodology

This study is based on ethnographic research conducted between the years 2001–2008 among Filipina migrant workers in Israel. In broad terms, it examines eldercare as a local industry which includes a large number of senior citizens, governmental agencies dealing with them, and the global network of domestic Filipina caregivers who tend to the elderly. This study presents an investigation into the particular meanings of care work that expressed in practices emerging from the caregivers' daily and social lives, such as the swan folding (cf. Mazuz, 2013a) and kinship terms (cf. Mazuz, 2013b).

The research was based mostly on observation and participant-observation at the homes of thirty Israeli patients cared for by Filipina caregivers in a town located in the southern region of the country. The majority of the patients were Jewish-Israeli female citizens, widowed mothers over the age of 68, who had migrated to Israel during the mid-1950s from North Africa. They were Hebrew and Arabic speakers, predominantly of middle to low socioeconomic status.

The caregivers had migrated largely from the rural areas in the northern islands of the Philippines. The majority of the migrants are uneducated Catholic women from a low-socioeconomic level, between the ages of 35-55, both married mothers and singles. All of them supported their families by sending material remittances back to the Philippines. The monthly salary of the Filipina caregivers is US$500-800, paid partly by the Israeli government incentives through the agencies and partly by the families or by nursing insurance coverage. The migration process starts at the local branch of the Israeli placement agencies located in the Philippines.

The application of observation methods was particularly relevant in studying these encounters because the Filipina caregivers and the Israeli patients do not share a common language or cultural background and beliefs. In this cross-cultural context, they had little verbal communication since the caregivers usually spoke no Hebrew or Arabic and the patients spoke no English or Tagalog. The Filipinas knew elementary words of conversational Hebrew and they had difficulty reading and writing in that language, particularly with respect to specialized care and treatment terminology. The patients had lack of language proficiency in English and in most of the cases Hebrew was their second language. Additionally, in cases of physical or mental impairments, the patients had difficulty communicating verbally thereby making this form of communication between the two even more difficult. As a result, speech was not central to communication between the patient and caregiver even though they lived together under the same roof. When I was present and if requested, I would translate the conversations between the two parties from Hebrew and Arabic into English and back; in some cases this function was conducted by the patients' grandchild.

Surprisingly, this difficulty that was a source of some problems also functioned as a generative source for communication of a different form, that is, the use of the most immediate alternative communicative medium: the body. The body then is the medium and locality of the care practices and ultimately of the familial dyad. Consequently, the daily tasks which were based on body-to-body practices rendered the use of language as a tool of communication unnecessary.

Through daily care practices the Filipina migrant becomes a part, an extension, of the patient's body. Through care practices such as bathing and dressing the Filipina attends to the patient's body with her body since both constituents of the dyad learn how to use their bodies in a manner that engages and synchronizes the two bodies to perform as one and at once. So the two bodies combine in a symbiotic, mutualistic and bidirectional relationship which at times continues the movements of one's body and at other times generates them. As the following ethnographies will show, eldercare in this context is a dialogic process between two bodies and as such it is constituted in terms of social and embodied relations.
The work of caregiving was exercised through actions that were carried out repeatedly as the most useful and sensual tools of communication and comprehension. Observing the practices of caregiving convey the meaning of the familial dyad.

In the following sections, ethnographies regarding the care practices repertoire are described.

Caring-For

Jina and Sima

During three days of hospitalization, Sima was cared-for by Jina who slept next to her bed. It was not the first time that Sima was hospitalized; Jina, 36-year-old married woman and a mother of two children in the Philippines had cared for Sima since 2001 and had become experienced in what hospitalization entailed. Sima's children trusted Jina and

came to visit the hospital according to their work's hours but always called Jina's phone to gain further information and updates about their mother's condition.

During the third day of hospitalization, I came for another visit in the morning. Sima was asleep in her bed and Jina sat next to her. Jina approached Sima and started to wash Sima's face and ears with a wet towel while Sima's eyes were still closed. Jina continued to dab Sima's lips, wiping her shoulders beneath the hospital's dress. Sima moved slowly calling "Jina, Jina". Jina bent over Sima's bed and repeated "Ima [mother], wake up, the nurse told me you can bathe today."

Jina intuitively stuck to the care habits she employed at home, positioning the pillows behind Sima's back and preparing Sima's breakfast. She fed her slowly, spoon by spoon while encouraging Sima to open her eyes by touching Sima's eyes. Feeling Jina's hand, Sima opens her eyes and began to eat the hot gruel. Sima became fully awake and Jina approached her bed, held Sima's hand saying in Hebrew "Ima Bohe [mother come]" and continued in English "come to bath, if you bath they will let us go, that's good, you want to go home, to your bed, to your neighbors". Sima smiled at Jina, and though she couldn't understand her English words she responded to Jina's request to make an effort, Sima replied, uttering slowly in Arabic "thank you, God will bless you binti [my daughter]."

Jina helped Sima out of bed and onto the plastic wheelchair, and wheeled her to the bathroom at the end of the room. The nurse came to the room and praised Jina's ability to assist Sima in such a gentle way and telling that "we prefer someone from the family to bathe the patient so she can keep her privacy and usual habits, and Jina is the right person to do so."

Jina and Sima went into the bathroom and closed the door. After completing the bath, Jina wheeled her back to the bed, lifted her into the bed while Sima banding over Jina to assist her, and Jina covered her with a blanket saying loudly "well-done, Ima [mother]" and sat next to Sima's bed and leaning against while saying loudly and happily "Now she looks good, I can see it."

It is important to note that Jina appreciated the familial terms. She told me that She felt honored when the nurse articulates her bonding with Sima as "true family," as it made her feel she belonged and in-place. Significantly, neither she nor other caregivers are forced to use familial terms. The caregiver receives emotional meaning through the familial gratification as part of the dyad's mutuality that goes beyond the financial compensation she receives for work. The dyad validates the importance of the caregiver's work which became significant in this temporal context. The familial terms were especially significant for caregivers who were first employed as servants or as au-pairs in other countries. There, according to their stories, they experienced displacement with no special treatment from the host families (in this aspect see also Parreñas, 2001; Chin 1998). Thus the familial terms are unique to the working conditions in Israel as caregivers for the aged and dying citizens.

Jina attended Sima's state and needs based on her daily intelligible communication with her which was expressed in kinship terms (Ima and binti) and reinforced by the nurse description of their bonding as "true family". The care practices emerged in a dialogic process between them based on bodily-based practices: Jina's washing, dabbing, wiping, moving is followed by Sima's moving slowly and calling her; Jina then replies and continues by feeding, touching and feeling and Sima opens her eyes, eats, talks, smiles, makes an effort, and so on in a continuing process. In bidirectional relationships Jina generates movements of Sima's body who continues them over and again while paying attention to each touch, blink of the eye and facial gesture. Attention in this context creates a mutual bodily familiarity which evidences non-verbalized trust, awareness and interconnectedness: Jina knew that Sima felt better just by her attending to her appearance. "Paying attention" for Jina entails her reliance on bodily contact in attempting to understand and empathize with what Sima was experiencing. Attention, in this context, brings one into being by perceptual consciousness of the other, this is a multisensory engagement. Attending "to" and attending "with" the body are processes called "somatic modes of attention" (Csordas, 2002 p. 244). Somatic attention requires both sensory and tactile engagement as a mode of attending to each other. In this sense, we can refer to the use of familial terms as cultural elaboration of eldercare that accompany daily attention to the bodily form and movements (of the carer and cared-for).

Lisa and Miriam[2]

Lisa cared for Miriam from 2002 until Miriam passed away in December 2004. At first, it was like a 'blind-date' where there was nothing the two had in common, including language and cultural background. But based on day-to-day practices and interactions, they become familiar and relatively close, over time, despite the fact that they still did not speak the same language.

When Miriam was asked to explain her medical condition, she usually described it as "something sweet that eats my body". Miriam suffered from diabetes that caused loss of vision and a problem with pain in her legs. On the morning of Sunday, February 2004, I entered Miriam's house, and saw Miriam lying down in her bed and Lisa sitting next to her, holding her hands. They were still both dressed in pajamas. Miriam's three floor house was narrow, thus they were unable to get their two beds into one room. Although Lisa had her own room, she put her bed in the living-room next to Miriam's bed in order to watch and attend to Miriam's needs immediately.

Lisa whispered to me: "During the night she was in pain and the pills are not effective. I gave her a little glass of arak [Mediterranean alcoholic liquor]". Miriam opened her eyes and moaned quietly. Lisa touched Miriam's face slowly and gently, whilst holding her hand, until Miriam's eyes closed again and she fell asleep. After ten minutes, Lisa released Miriam's hand and went to the kitchen to prepare breakfast. Half an hour later, Lisa woke Miriam up, calling her "Ima [mother] wake-up you need to eat". Miriam opened her eyes, moaned, and Lisa lifted her over some pillows and began to feed her spoon after spoon. Unexpectedly, Miriam closed her eyes and bit her lips in pain. Lisa held her hand and stopped feeding her, telling her in Hebrew again "Ima [mother] I am here". Miriam's voiceless tears began to fall. She held Lisa's hands and told her in Arabic, "T'iech binti [thanks, my daughter]". Lisa relaxed Miriam by touching her face and reorganizing the pillows and helping her lie down.

When Miriam's pain overshadowed everything, she closed her eyes. Lisa responded in touching her, providing her support. Miriam's pain had become a medium for social interaction with Lisa who instinctively responded to it through the mode of touch while holding her hands. Through touch as a tactile practice they both shared the "'here and now'" of the pain experience and by doing so they both participated in temporal and spatial immediacy with the same focus of attention.

Lisa responded to Miriam's pain by employing a variety of practices which do not treat or cure but show awareness and intentionality towards the painful state. Also the use of arak exemplifies the cultural sensitivity of Lisa, since it is considered as a method of pain relief among Moroccan Jews in Israel. Although some treatments have not been medically proven as effective, their use—along with attending to the patient's bodily pain with the carer's body, sensitive attention, deliberate touching corresponding to Miriam's pain—does appear to make a difference in terms of the pain experience. The carer's touch is not taken for granted; it is part of the mutualistic relationship between them as mother and daughter. The touch, the proximity, the calling, the attention is already embedded in their bodily-based relationship.

The Body of Proof

The content of daily care between Miriam and Lisa as well as between Sima and Jina is embedded in bodily actions that are carried out repeatedly each day. As these patients' physical situation declined and their range of bodily movements narrowed, they became increasingly dependent on the Filipinas' care practices. Lisa and Jina fed, touched, held and bathed their patients. The Filipina used her hands -without gloves- as the most useful and sensual tools of apprehension and of action. There was intelligible communication between them through bodily practices. Within their hushed intervals, silences and fragments of words in three different languages, conversation and discourse were not major tools of communication.

In these encounters, given the lack of a shared verbal and cultural habitus (Bourdieu, 1977), between the Filipina caregiver and her Israeli patient, the tactile aspects of touching and bodily closeness becomes social instruments for communication that can be put to use inter-subjectively. In this context, by placing bodily-based practices at the center, the familial dyad is taking shape and form.

As both ethnographies suggest, the use of familial terms is not idiosyncratic behavior or a cross-cultural metaphor but part of their corporeal daily lived experiences. The ways in which the care practices are put together, the relative proximity between the two bodies, paying attention, the setting of parallel beds at the hospital and at home, the touching of the face, the holding of hands, the use of familiarity as noted by the nurse, are manifested through the care practices throughout they become a mother and a daughter, a single kinship unit. Thus, the physicality of the familial dyad has a communicative role that socially organizes their relationships and providing them with sense of meaning.

The familial dyad is marked, then, by the bodily practices that create relatively static, corporeal dimensions of inter-subjectivity and sensual continuity. This is especially so in hand holding and touching. In the ethnographies above, the familial terms appear as the most immediate auditory utterance after or during the care practices which are based on and demand corporeal and mutual

involvement. Another unique aspect of the familial terms is their inherently reciprocal, allowing the one to be a mother and the other to be a daughter at the same time. It is not a unidirectional relation but rather bidirectional. My objective here is not to offer an ethnomedical model of eldercare as a romanticized alternative by suggesting that the familial dyad is built as quid-pro-quo. The familial dyad never exists outside of the specific context of their encounters and it is limited to particular actors (the Filipina and patient) in a specific time and place. Nonetheless, though it is not pre-negotiated or imposed, it emerges as an integral part of the caregiver/patient relationship and serves to maintain order, respect, and status by elevating their shared experience to that of a dyad characterized by daughterhood and motherhood.

Care and Empathy: beyond words

Throop(2012) suggests through ethnography of bonesetting practice in the island of Yap the term "tactile-based empathy". The term outline that empathy is not reached only through verbal or visual modalities but as "rooted in alternate embodied and sensory forms of attuning with others" (p. 424). Throop suggest this term especially in contexts in which the capacity to gain quasi-first-person access to another's lived experience is problematic. Thus, empathy "is considered a mode of disclosing ongoing embodied forms of intersubjectivity" (p. 425).

Accordingly, the care practices that are bodily-based are crucial tools of communication especially given the disparate language and culture as a problem to gain quasi-first-person access. In this context, the care practices are not just technical or "empty" forms but materialization of "tactile-based empathy" (Throop 2012). As described above, these caregivers and care receivers used a few words in three languages - Hebrew, English, and Arabic - and still none were enough for a correct and complete conversation. At the beginning, those words were meaningless. However, they became gradually loaded with significance not through their translation but rather through the bodily care practices that accompanied them. These care practices require intuition, attention and sensitivity as essential aspects of tactile-based empathy through which the familial dyad emerges.

In their research among Indonesian nurses working in Japan, Alam & Wulansari (2010) describe two care practices that emerge between the Indonesian nurses and the elderly Japanese patients due to the lack of language proficiency: "skinship" and empathetic caring. The term "skinship" is derived from "skin" plus the suffix of "friendship" and has surfaced as the Indonesian nurses' strategy to maintain a close relationship based on skin-to-skin practices in the absence of a shared language. "Looking at their patients as they were their own grandparents" (2010: 190) strengthens the Indonesians' empathetic caring.

Thus, in a theoretical manner, the application of care through physical intimacy, bodily proximity (such as skinship) and tactile moods of touching facilitated the caregiver and patient role to extend to the utmost degree of engagement, familial dyad and empathy as the main aspects of eldercare.

The familial dyad which concretely demonstrates empathy is central to our understanding of how bodily attention and practices create identifications and bonding in a reality of sickness and displacement caused by ageing and migration. The familial dyad is entangled in and acts as vectors of sociality and subjectivity; it is a new adjustable way of being-in-the-world for both the caregiver and the patient in which no one could take a part. In this context, empathy is the vehicle for adapting to the changing environment of both the cared-for and the caregiver in an era of globalized care.

The familial dyad consequences: the function of the family

The familial dyad became a bonding essence created solely between the Filipina caregiver and the Israeli patient that no one else, including the patient's children, can take a part in. The nurse at the hospital describes Jina as the "true family" acknowledging Jina's irreplaceable position and daily stance of action which is part of eldercare.

This gives rise to the question, what are the familial dyad consequences? The familial dyad, which provides insight into the phenomenology of care experience through implementation of bodily-based practices, re-conceptualizes social and intra-family dynamics of both the caregiver and the patient's family.

The patient's children do not approach the Filipina as a sister but in some cases do refer to her as a "bat Michpaha" [family member]. The Filipina caregiver frees the children from the routine and dirty, tedious and exhausting work that is considered part of eldercare. The Jewish family is reconstituted because there is one Filipina who is a noncitizen, who holds no residential or inheritance rights, and yet is essential to the operation of the Jewish family especially in the face of the modern labor system (so in Sima's case, her children could continue with their works

and came to visit at the hospital). The Filipina allows the physical and social functioning of the aged parent as well as of the whole family. Consequently, the Filipina lubricates the gears of the Jewish family system. The Filipina enable the children to go on—consciously and practically—with their everyday lives without torments that they neglected their aged parents. Moreover, it assists them with encountering their aged parent as they would like to remember them: As one of the children told me with a somber tone "I don't want to remember my mother being diapered, she is more than that". The children's visit often occurs after their mother/father has been treated and cleaned. Thus, a Filipina foreign homecare became a standard of eldercare that Jewish-Israeli families choose and maintain as both a moral necessity and a socially acceptable option in the face of the modern labor system. The Filipina caregiver enables the children to continue functioning by transferring responsibility for ongoing bodily interactions involved in the decay of the aged body to the Filipina who, by necessity, lives and works as one unit with the patient in close physical proximity.

Another consequence affects the irreplaceable Filipina. The Filipina homecare, which shoulders the Jewish family, demands a total attendance which only a foreign female body constructed as foreign noncitizen, non-Jewish temporary resident displaced in space and time, separated from her language and culture of origin, and deprived of rights and citizenship could carry repeatedly. As I concluded (Mazuz 2013, 109): "eldercare in Israel has been viewed as temporary work. Despite the fact that it shoulders and sustains the Jewish family's burden, it is based on an endless supply of a frequently changing flow of foreign women, and new, refreshed Asian bodies, until their supply becomes depleted".

Consequently, the familial dyad is located at the crossroads of global and local economics, the state regulation and bureaucratization of work migration, and cultural conceptions of eldercare. Paradoxically, this junction also fosters the most intimate and familial bond between the subjects, their corporeal and interpersonal being. These, in turn, generate an alternative conception of intra-family dynamics and burden, belonging, and empathy which are dependent on bodily-based practices and tactile interconnectedness as the core of eldercare.

Notes

[1] It is interesting to note that the term "Filipina" has became a generic category of low-care employment so even if the caregiver migrated from Nepal, India or Romania she is considered to be a "Filipina" because of her employment status

[2] Based on an ethnography taken from: Mazuz, forthcoming

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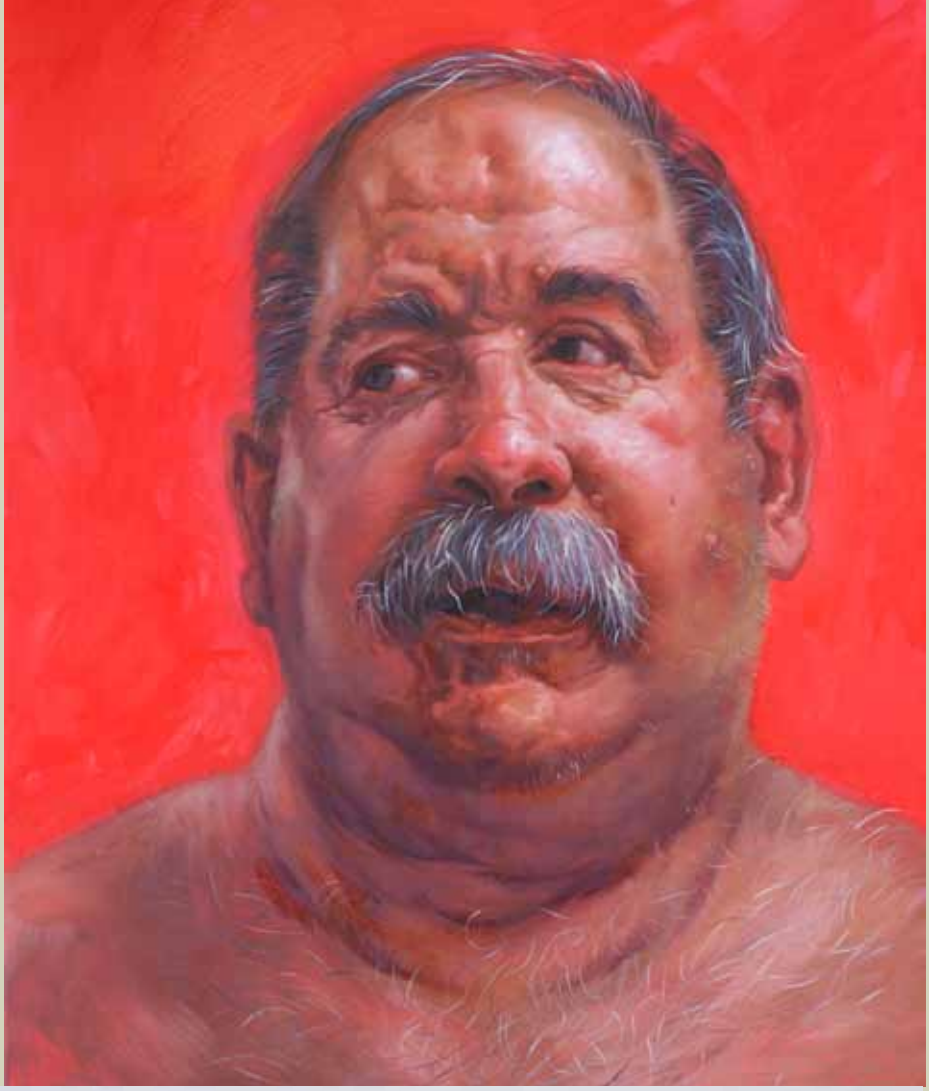
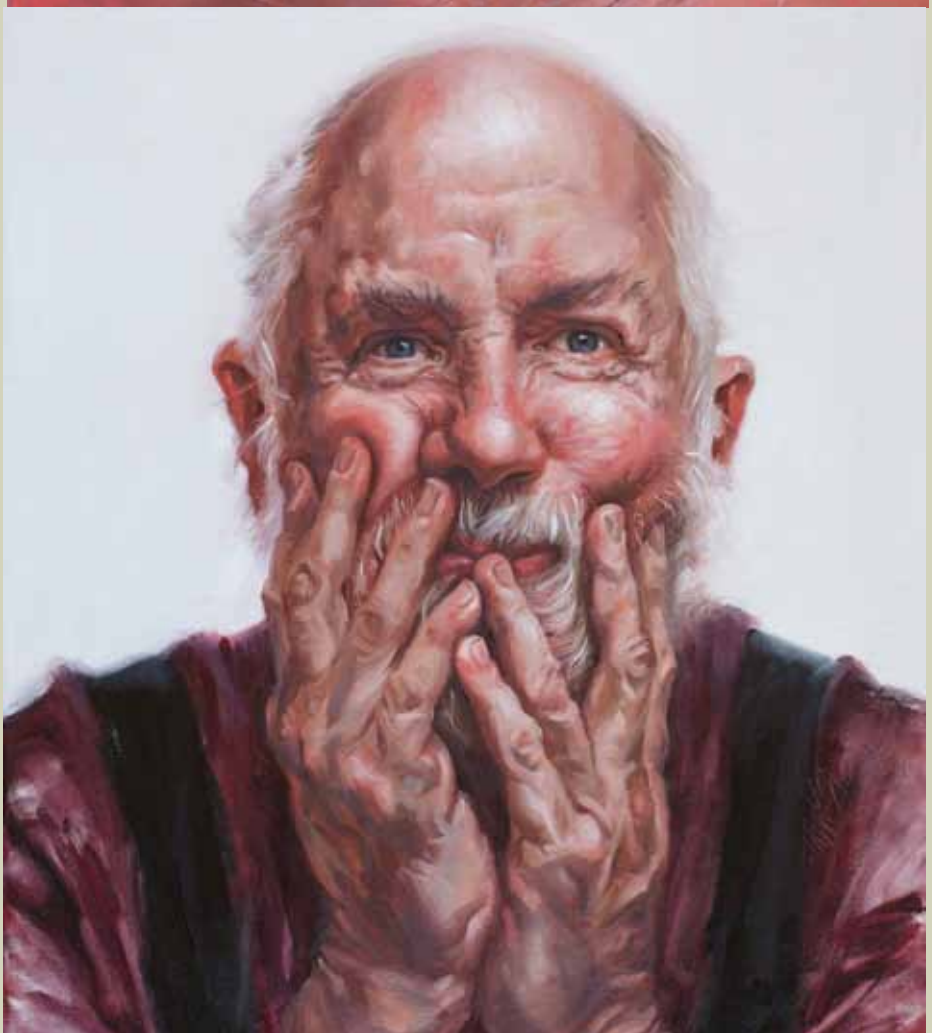
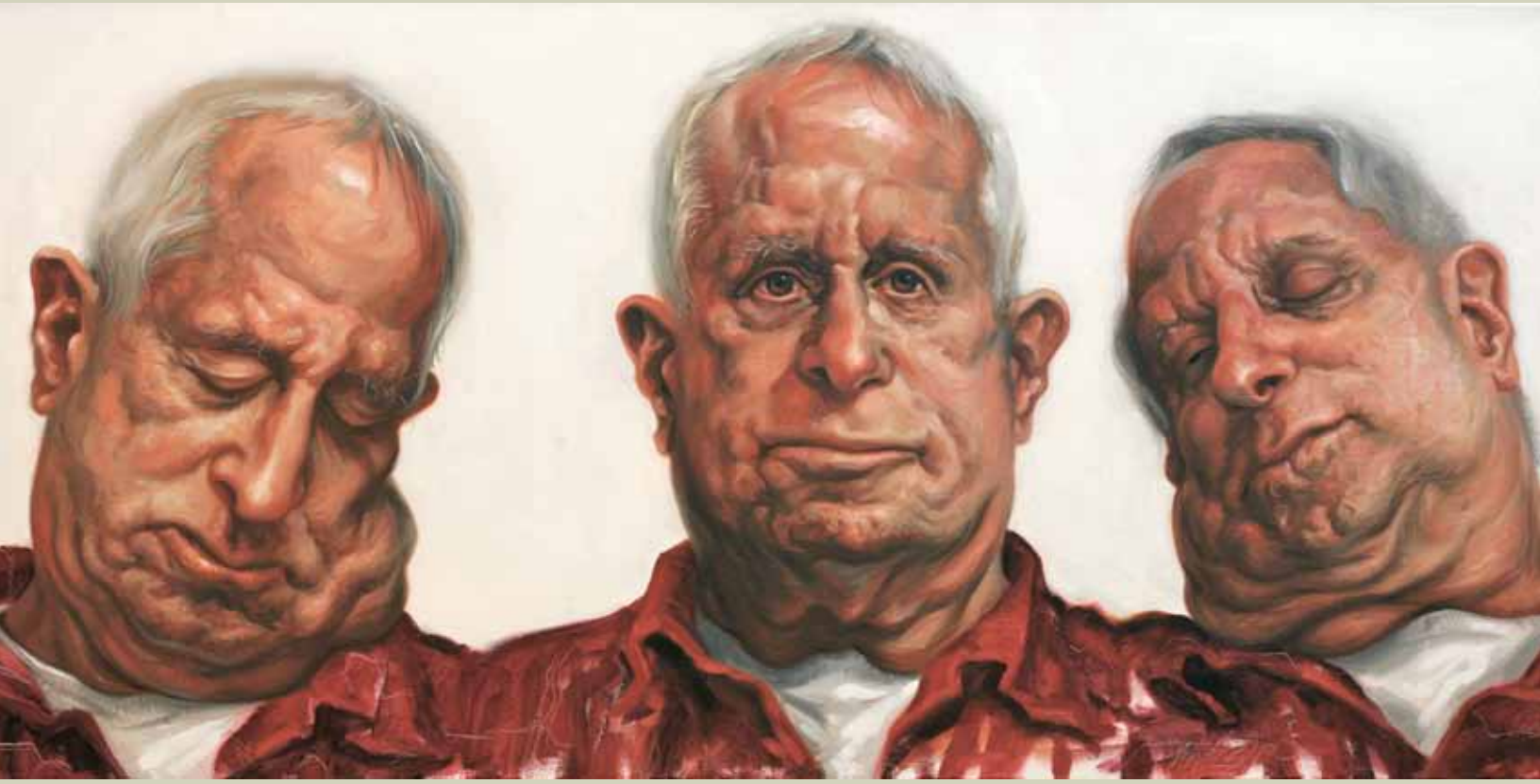
Fascinating Wisdom
The Solon Senior Art Project

Portraits by Judy Takacs







About "The Solon Senior Project"

Judy Takács

If the delicious signs of aging were considered fascinating and revered in our culture, how would they be honored in art? What if every pucker and fold were celebrated and every fine line that appeared along the path to old age were welcomed with the glee of having leaped the next hurdle?

What if we as a culture saw the physical markings of old age as a badge of courage awarded to one who has gained the precious wisdom that comes from a life thoroughly lived?

"If wrinkles were a good thing, how would I paint them?"

I see them that way and try to paint a wrinkle as if it was a very good thing indeed.

I luxuriate in them. I celebrate every purse of flesh and caress the twists and turns. I massage the subtle color and texture changes and paint them with hedonistic pleasure. These portraits are not flattering by the narrow standards of beauty society has defined, but artists have for centuries been shaping ideals of beauty, so, true to that pioneer creative spirit, I fight the good fight and celebrate the fascinating wisdom of beautiful seniors and hope my joy becomes contagious.

The paintings shown here are from a collection of larger than life size portraits of beautiful old souls that I created during my yearlong public painting project painting seniors in the busy lobby of my local Senior Center. It was a lively demonstration of painting skills and provided me with an ample supply of faces with stories and wisdom.

This project was surprisingly easy to orchestrate. My local senior center was eager for this "enrichment activity" for their seniors, and because I paid my senior models $20 an hour to pose, they were more than eager to sign up. My signup sheets filled up quickly within the first week or so. Then, when the project started, each Thursday, I came to the senior center with my paints, seated easel, fold-up tables and of course a giant drop cloth to protect the carpeting in the lobby. My senior of the week was, without exception, there early and ready to work; all of them carried a strong work ethic with them into retirement, and enjoyed having an important job to do.

Once my model was seated, with the lighting adjusted, I explained to them about holding still to pose; finding one spot to focus on, and, even if they talked a bit, to keep focusing on that spot. Because as a painter of peoples faces, a minute shift in the angle of an eye can mean major changes in a portrait.

I also explained to them that I'd be taking photos as I painted. Their two-hour posing session was only the beginning of this 30 or more hour painting I would be creating. I needed to finish the painting using the photos as reference. Sometimes, if I felt the model was up to it, I'd ask them to pose for different expressions, so I could compose a psychological drama if I chose to, later in the privacy of my studio.

As I became more comfortable painting and talking in this public setting, so did my models. Later sitters would often spend the entire two hours telling me about their lives. I heard about amazing grandkids and about how some of the younger seniors were caring for their older senior parents or spouses…while dealing with their own illnesses and losses. I was honored that one gentleman used the posing date to mark the one month anniversary of surviving being hit by a car on his bicycle. And I also heard about

the good stuff; many had joined choirs, acting troups, art classes and volunteered their time to charity.

The paintings from this project made their public debut in a solo show at the Solon Center for the Arts, November 2012 and the book is available on blurb.com. (search: The Solon Senior Project: Judy Takács Paints Fascinating Wisdom) I invited the seniors to the opening reception as honored guests, and gave them each an inscribed copy of the book. It was fun for the younger guests to recognize the older faces from the paintings, and the older folks were proud to be part of the art. Many have continued to follow my art by coming to my art events since that show. As much as I feel I have enriched their lives by inviting them to participate in the creative process, they have given me so much more in sharing their lives and beautiful faces with me.

Links

For more of Judy's work:

judytakacspaintspeople.com

For more information on these and other portraits from the Solon Senior Project Series:

www.judytakacspaintspeople.com/judytakacspaintspeople.com/The_Solon_Senior_Project/The_Solon_Senior_Project.html

Follow the blog about her current project, painting unsung female heroes;

chickswithballsjudytakacs.blogspot.com

Featured Paintings

Contemplation of Leo
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The Activist (top)
Anna has Heart (bottom)
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Chuck Shrugged (top)
Right and Better Left Unsaid (bottom)
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The Third Watch (bottom)
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Anthropology & Aging Quarterly
The official publication of the Association for Anthropology & Gerontology

Information and Submission Guidelines

Anthropology & Aging Quarterly is the official publication of the Association for Anthropology & Gerontology (AAGE). It is published quarterly (March, June, September, December) by AAGE. AAGE is a nonprofit organization established in 1978 as a multidisciplinary group dedicated to the exploration and understanding of aging within and across the diversity of human cultures. Our perspective is holistic, comparative, and international. Our members come from a variety of academic and applied fields, including the social and biological sciences, nursing, medicine, policy studies, social work, and service provision. We provide a supportive environment for the professional growth of students and colleagues, contributing to a greater understanding of the aging process and the lives of older persons across the globe.

AAQ welcomes submissions of new and engaging work that contributes to the anthropological study of aging. This may take the form of original ethnographic or experimental research, or work that applies anthropological methods and perspectives to the study of aging more broadly.

Submission Process All manuscripts should be submitted electronically, via e-mail attachment. *Anthropology & Aging Quarterly* accepts four types of submissions--*Research Reports*, *Policy and News Reviews*, *Commentaries*, and *Articles*.

AAQ invites unsolicited contributions in several forms. *Research Report*s are brief discussions of ongoing or recently completed study and should be no longer than 2,000 words. *Policy and News Reviews* are pieces which offer thoughtful and reflective commentary on current events or social policies pertaining to aging and culture. *Commentaries* provide authors with an opportunity to discuss theoretical, ethical and other time-sensitive topical issues which do not lend themselves to a full-length article. *Policy Reviews* or *Commentaries* may range from 1,000 to 4,500 words.

Articles are peer-reviewed and manuscript submissions should include the following: a cover page with the author's full name, affiliation, mailing address, and manuscript title; a 200 word abstract; the text; references cited; and tables or figures (*Chicago Manual of Style*, 16th edition). Endnotes are permitted but should be used sparingly and with justification. *Articles* should not exceed 9,000 words, including all materials. Published materials will publically accessible and protected by a Creative Commons copyright.

We are also encourage submissions of visual work for the "*Portfolio*" section of our journal, including photographic essays and artwork relevant to the subjects of the journal.

All submissions should be submitted via e-mail to the Editor, Jason Danely journal@anthropologyandgerontology.com

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Book Reviews

Whitfield, Keith E., ed. Annual Review of Gerontology and Geriatrics: Focus on Biobehavioral Perspectives on Health in Late Life. Springer Publishing Company. Volume 30: 2010. ISBN 978-0-8261-0613-1, pp. 296. Price $90.00 (Hardcover)

The Annual Reviews of Gerontology and Geriatrics (ARGG) have been in existence for almost three decades. The focus in this volume is on how biobehavioral perspectives impact health and aging and is edited by Keith E. Whitfield, Ph.D. of Duke University who brings a wealth of knowledge and experience to the editor position. Together with twenty-nine interdisciplinary expert contributors, the authors present approaches and conceptualizations on how complex biological, behavioral, and social systems interact to create and impact aging health. Chapters take in to consideration the life span and life course approach to aging as a process. The content is organized in three distinct sections with the goal of "stimulating thinking about how biobehavioral perspectives help to accurately account for complex phenomena relative to aging" (2).

Whitfield explains the broad conceptualization of biobehavioral as the descriptor of choice when referring to interdisciplinary research that encompasses the biological and social foundation of behavior. This approach accentuates the expanding interest in exploring the aging process by determining complex connections between social and behavioral factors that impact all other processes and may help to explain the etiology, symptomatology, and life course of chronic disease states in late life.

Szanton and colleagues offer a society-to-cells resiliency theory that represents theoretical synthesis but highlights the impact the social environment can have on aging resilience. This proposed theory "posits that resilience can be manifest in resistance, recovery, or rebound processes, viewing resilience as a process in which all individuals engage as they progress in life" (7). This approach seems logical when thinking about aging Baby Boomers and their desire to maintain physical, mental, and social function for as long as possible – their need and desire to be resilient.

In chapter 3, authors present an overview of biobehavioral methodology including implications, strengths, and weaknesses. More integration of theory-driven explanatory models needs to occur in education and research training. Analysis of data from biobehavioral aging research is difficult given the complexity and lack of formal training in biobehavioral design; something to think about when designing undergraduate and graduate research courses for future leaders in aging research.

Cells to Homeostatic Systems: Chapters 4 through 8 cover an interesting range of topics: the roles of oxidative damage, exercise and caloric restriction to late life health; genetic and environmental contributions to cognitive decline in aging and Alzheimer's disease; hypertension and neurocognitive function; vascular depression and the cardiovascular implications for mental health; and, stress and aging. Interesting and current aging topics that give the reader pause when thinking about crossing the behavioral, psychological, social, organ systems and molecular levels. Or perhaps the mind-body connection within a social context would be the take home message. The study of psychoneuroimmunology - the interactions among emotions, neural, endocrine, and immune functions - exists. What might we term the study of environment, social, behavioral, psychological, genetic, cellular and molecular levels? Optimageresilientology? Another point to ponder in our quest for understanding the process of aging so we can make an impact on the quality of aging.

Person to Society: The final 6 chapter topics include: religious involvement; personality; an ethnographic treatise on poverty and health; breast cancer biology and behavior; the socioeconomic gradient in healthy life expectancy; and, neighborhoods and health in later life. In chapter 9, Hill presents his model of how religious involvement impacts health and longevity. Social and psychological resources, health behaviors and biological markers are identified from a biopsychosocial perspective. Generally, religious involvement impacts aging in a positive manner. However, Hill does include the "dark side" of religious involvement which was insightful as I am sure many clinicians working with older adults have witnessed the negative as well as positive aspect. I would have liked to seen an exploration of spirituality, especially since the importance of religion is currently being defined differently by the aging Boomers.

Hooker and colleagues remind us of how important knowing the lifelong personality of the older adult assists us to understand their health issues of today. Gaps exist and further research is essential. Burton and Bromell report on the cumulative health disadvantage of being born in to poverty by using an ethnographic approach. The reader is reminded that "cancer in the older adult is increasing and regarded by

some as a geriatric syndrome" (295). The work by Harden and colleagues reminds us that with advancing life expectancy and cancer treatment advances, we have an obligation to treat older adults past the typical end dates of 70 years and work toward updating current evidence-based guidelines for health prevention. And lastly, Crimmins and Hagedorn tell us that "estimating healthy and unhealthy life is an attempt to estimate life of varying quality" (p. 317). Using and understanding how socioeconomic factors impact aging can help us to change health policy and determine appropriate resources for leveling the playing field regarding quality.

This book is a relevant resource for researchers and educators in many disciplines as well as clinicians and health care profession students. Traversing levels of analysis helps us to think about aging as a process impacted from birth by external and internal factors that combine to formulate health and longevity for all aging individuals. Understanding the impact of life on living is essential in healthy aging.

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Peggye Dilworth-Anderson and Mary H. Palmer, eds. Annual Review of Gerontology and Geriatrics, Volume 31, 2011: Pathways Through the Transitions of Care for Older Adults. New York: Springer Publishing Company. 2011. ISBN #978-0-8261-0793-0. pp. 270, $95 (Hardcover)

This installment of the Annual Review of Gerontology and Geriatrics is organized as an answer to the complex question of what is needed to improve the quality of care adults aged 65 and older during their transitions from one health care setting to another. Pathways focuses on care transitions because this is where things are most likely to go horribly wrong for the patient, and the overarching goal is to improve patient outcomes, which in turn will reduce spending.

The complications facing older adults who are experiencing care transitions are broadly contextualized within the recent public policy issue of health care reform, and even more broadly in the rapidly shifting age demographics of the U.S. that is slated to exacerbate an already strained system. While the many factors contributing to poor health outcomes during transitions are not unique to older adults, comorbidities like dementia do occur at higher rates in this population, further complicating their care.

Pathways (and specifically "Coming Full Circle") casts transitional care as a way of reorienting how health care is provided in the U.S. Because transitional care as the authors frame it focuses on the patient, with care providers and family members coordinating the patient's care in symphonic harmony, transitional care is held up as a site for the catalysts that could systematically increase the quality of care provided while reducing its overall cost.

The health care system's current state of disarray can be located in the five thematic "pathways" that this volume treats as the current health care system's greatest weaknesses as well as its areas of greatest hope: family involvement, education and retention of the health care workforce, patient care quality and outcomes, reimbursement policies, and the fundamental fragmentation of the system. Taken together, these themes have the power to make or break continuity of care as patients transition from one health care setting to the next.

Several solutions also recur thematically throughout the volume. Among the most popular are patient-centric care models, inter-disciplinary team (IDT) coordinated care, multi-directional and ongoing communication, judicious use of technology, tying reimbursement rates to care quality, including family and direct care workers in decision-making, and holding health care providers and institutions accountable via standard performance measures.

A few chapters, notably "Public Policy Implications" (Reinhard and Lind) and "Educating Direct Care Workers on Transitions of Care" (Stone and Bryant), highlight the models and best practices that currently exist, and what promising programs the recently-passed Patient Protection and Affordable Care Act (PPACA) and other public policies may facilitate. But these same chapters also note the particular barriers that exist to further implementation of these best practices.

All of the authors admit there are quite a few stakeholders who are not exactly eager to see things shift to a patient-centric model. In response, "Coming

Full Circle" advocates that we consider stakeholders "in relation to each other" so that common interests can be identified and leveraged for the improved health of the system and the people it affects (252). And the contributors also hold up the potential of PPACA as a way to implement systematic changes. But knowing what we do now about the potentially dire straights the PPACA is in given the current political climate, how do we read the contributors' optimistic suggestion that this federal policy is something we will be able to leverage to change the system for the better?

Despite this shadow of doubt, the Pathways is thoughtfully written, its sections building easily upon one another. The recurring themes are interwoven throughout to create a consistent whole, allowing the volume to logically reach its conclusions and policy recommendations of the final chapter. The research herein has obvious widespread implications not just in the arena of public health, but also for our society as a whole. After all, as the authors point out, this crisis in health care is part of a larger socio-economic crisis. And while this volume focuses on the impact the system's shortcomings is having and will continue to have on older adults, the authors consistently stress that it is not only patients who experience their health crises, but also their families and friends.

The authors employ a variety of research methods, statistical sources, and ethnography to build their cases. A broad spectrum of people contributed to the solid scholarship in this volume, giving Pathways a rich, interdisciplinary scope that bolsters its insightful suggestions for future research and policy. Many of the contributors hail from the medical field, and there is representation of the health policy, social work, and psychiatric fields, as well. These are researchers who may actually have the influence necessary to change the lives of the people they have so meticulously studied.

Like all the volumes in this Annual Review series, Pathways is intended for students, researchers and clinicians in the fields of gerontology and geriatrics. But this volume contributes useful knowledge not only to the field of aging studies, but to multiple disciplines and public policy. Anyone interested in aging studies or health care would find this volume useful and enlightening.

After reading this book, it seems that by improving care during transitions using the various suggestions the authors put forth, the impending health care and socio-economic crisis that the influx of older adults poses could be averted. However, the disconnect that all the authors identify as so dangerous during transitions of care mirrors the disconnects that tend to occur during the transitions of knowledge from research to policy and from policy to implementation. Pathways is undeniably successful in what it aims to do: providing tools to think through ways of improving the quality of transitional care for older adults in America. And the contributors do an admirable job of discussing the underlying, systematic barriers to the application of its important and well-researched conclusions. I simply wish its contributors had provided clearer pathways through the transition from research to practice.

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Hayslip, Bert, Jr.; Smith, Gregory (eds.), Annual Review of Gerontology and Geriatrics, Volume 32 2012: Emerging Perspectives on Resilience in Adulthood and Later Life. Springer. 2012. ISBN# 978-0-8261-0874-6, 299 pp, $99 (Hardcover)

This collection is a timely and excellent contribution to the study of resilience and the field of gerontology. Recognizing that resilience as a construct is complex and lacks a unified and agreed upon definition, the editors conceptualize resilience as multifaceted and multidimensional, while demanding "attention to a virtually unlimited array of interacting biological, psychological, and environmental variables that must be truly viewed from an interdisciplinary and life span perspective" (p.24). As a result, the volume is organized in two parts: the first (chapters 1 through 7) addressing domains (physiological, biopsychosocial, and environmental aspects) of resilience and the second (chapters 8 through 14) discussing application (intervention and value of resilience in specific age-related contexts). Contributors to this volume address the multidimensional nature of resilience while considering how the research has evolved and developed given its historical context. Additionally, contributors present the most pertinent issues related to the measurement and application while advising and encouraging scholars to explore the complex and unanswered questions as they investigate and develop programs of resilience research. This volume showcases prominent scientists studying resilience. Additionally, contributors review the current state of the literature and articulate trends in the frontier of resilience research at large. The content in almost every chapter is accessible, compelling, and

stimulating. The collection is intended for both lay and expert readers wishing to understand the state of resilience research as it pertains to later adulthood, and would be an excellent text for graduate courses allied with aging and adult development.

Part I of this volume details various domains and contexts for which resilience is important. Key themes are: defining and conceptualizing resilience, resilience as it pertains to major issues related to aging (immunity, cognition, stress and coping, environment, and spirituality), and the call for future research that better measures and models resilience in later life i.e., research that deals with the temporal nature of resilience as a process. In chapter 1, Smith and Hayslip provide a comprehensive discussion of resilience as a construct and adequately define and situate resilience in relation to protective factors, risk and adversity. Fagundes, Gillie, Derry, Bennett, and Kiecolt-Glaser in chapter 2 examine the biophysiological aspects of resilience in the context of immunological functioning. In chapter 3, Lavresky explores the relationship between stress, resilience, and mood disorders such as depression and anxiety. In chapter 4, Ryff, Freidman, Morozink, and Tsenkova deal with resilience in the context of emotional expression and regulation. Stine-Morrow and Chui in chapter 5 explore the need for maintaining and coping with cognitive functioning in later life as a way to enhance resilience. Aldwin and Igarashi in chapter 6 treat resilience as the key factor enabling older adults to successfully manage poor person-environment fit. In chapter 7, Ramsey discusses the role resilience plays in promoting spirituality as a resource and component of successful aging.

Part II of this volume "focuses on the application and value of resilience to a variety of issues key to successful development" (p.151). Key themes are: translating resilience into the lives of older adults and best practices for doing intervention based work in the context of resilience. In chapter 8, Walsh applies key components of resilience to later life families using a family systems perspective. In chapter 9, Rybarcyzk, Emery, Guequierre, Sharmaskin, and Bethel look at indicators of resilience of individuals in rehabilitation following a stroke, fall, or onset of a chronic condition. Bonanno, Westphal, and Mancini in chapter 10 discuss resilience in the context of individual differences in adaptive coping. In chapter 11, Sterns and Dawson consider resilience in the workplace and how it relates to the older worker. Coon in chapter 12 explores the resilience of caregivers. In chapter 13, Diehl, Hay, and Chui discuss the role stress plays in the process of recovery and resilience in the everyday lives older adults. Lerner, Schmid, Weiner, Arbeit, Chase, Agans, and Warren in chapter 14, using person-environment interactions, consider the constructs of biological and psychological resilience in the context of a lifespan developmental perspective.

Traversing the life course promises that individuals will encounter a multitude of life events, and for some these events will be sources of hardship, adversity, and trauma. What determines whether people thrive or survive when encountering these events? What circumstances increase the likelihood of having resilience, or the capacity to maneuver through adversity in a manner that protects health and well-being? Is it simply inner strength, self-regulation, or innate human capacity? Why is it important that we investigate resilience in the later decades of life? How do we translate the underpinnings of resilience into interventions and policies that benefit older adults and society at large? If you are a looking for a volume that addresses these questions and more while offering new and exciting ways to fill existing gaps in resilience research, reading this volume is a worthy investment of your time and energy.

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Jean-Marie Robine, Carol Jagger, and Eileen M. Crimmins, eds., Review of Annual Review of Gerontology and Geriatrics. v 33, 2013. Healthy Longevity: A Global Approach. Springer Publications. New York: 2013. ISBN-10: 0826109942 $95.49 (Hardcopy)

This volume is part of the series of reviews of research in aging. As the subtitle specifies, it addresses research on living longer. The sixteen chapters, each by different sets of authors, included have a consistent conclusion: with appropriate medical care, older people will live longer with less destructive effects from debilitating conditions. More people will live to be the older elderly and men will live longer than before. The effect of this older elderly aging has significant policy and fiscal implications, because appropriate treatment and monies will need to be applied to them.

The chapters address different issues that are of interest to students of gerontology, geriatrics, and especially the members of AAG. Chapter 2,

for example, by Mikael Thinggard, Matt McGue, and Kaare Christensen, "Age Trajectory of High Cognitive Functioning," notes that: "It is reassuring that exceptional longevity does not necessarily lead to high levels of cognitive disability in the 1905 cohort. (p.45.)" The authors ask that this finding be tested in later born Danish cohorts as well as cohorts in other countries. They go on to suggest appropriate statistical methodologies be used to make certain any missing data be addressed

These findings are further confirmation of earlier results. Zarit and Zarit, in their review of aging disorders, explore cognitive functioning longitudinally and across cohorts. They note data drawn from the Seattle Longitudinal Study that show stability in most areas as people reach older ages (2011:25.) Of course, both medical and psychological factors can detrimentally affect cognitive skills. This is reassuring as we find ways to diagnose both sets of factors.

From this example, and others to follow, it is clear that except for Japan, the volume focuses on European and North American studies. The editors and chapter writers note that comparable studies should be done elsewhere and continue to be done throughout the First World, with particular reference to appropriate statistical methods that connect both longitudinal and cohort studies.

Several of the chapters focus on biological factors in health aging. In Chapter 7, "Optimizing Human Health Span and Life Span," Bradley J. Wilcox et al. look at the phenotypes that define human aging. They conclude from a number of studies: "…the phenotypes of 'healthy' or "successful' aging or 'health span' are complex and ill defined. It is difficult to assess predictors or correlates of these phenotypes and even more difficult to replicate findings if the phenotypes are unclear and differ from study to study. (p.156.)" They suggest continued use of autopsy studies, especially given the advances in micro-technology that allow more accurate study of organs to determine aging issues.

Others focus on medical service, education, and self-care factors. Chapter 13, for example, in Karine Peres, et al., "Recent Trends in Disability Free Life Expectancy in the French Elderly," follows the general theme of the chapter reviews and studies in this book. The authors suggest that "…the health of older people has significantly improved over the last two decades concurrent with a rise in LE [Life Expectancy]…" They go on to note that healthier life styles—e.g., better diets, more exercise, decreased consumption of nicotine—have helped as well. Furthermore, they note that some of the gender differences of the past seem to be changing outcomes: "Men and women may have developed some competency in areas traditionally dominated by the other gender in previous cohorts, such as doing the shopping or preparing meals among men and driving a car or handling finances among women. (p.306.)" Some alternative research suggests that women may report more disability than men: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448463/ Consequently, in this reviewer's experience as an anthropologist and psychologist treating the elderly, researchers and therapists should be sensitive when doing assessments and treatment to this possibility when working with the elderly.

As this chapter and other chapters throughout the volume suggest, there are policy implications for this healthier aging. In simple terms, as the later chapters portray, more elderly are living longer. The readings suggest that appropriate medical and psychological care, with suitable funding, can help the elderly achieve a more successful and fruitful experience during these years. The various authors do note the limitations in the research they do and suggest further research in the First World should be done to address uncertainties in their findings. Meanwhile, those of us concerned with issues of aging will find this collection welcome in terms of enhancing positive outcomes for the elderly.

2011 Zarit, Steven H. and Judy M. Zarit. Mental Disorders in Older Adults: Fundamentals of Assessment and Treatment. 2nd. edition. The Guilford Press. New York.

2004 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448463/

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Book Reviews

Levine Madori, Linda. Transcending Dementia through the TTAP Method: A New Psychology of Art, Brain, and Cognition. Baltimore, MD: Health Professions Press. 2012. ISBN 978-1-932529-72-2, 243 pp. Price $42.95 (Paper)

Dr. Linda Levine Madori has developed an approach to enhance the quality of life for people with dementia. The twelve-step Therapeutic Thematic Arts Programing (TTAP) offers a way for administrators to implement person-centered dementia care for residents of nursing homes and assisted living facilities. The TTAP embraces finding out what animates a person and taps into what Levine Madori refers to as the mind's eye throughout the book. TTAP allows the individual to reminisce, reflect, and share with others in a group setting by utilizing a variety of communication and self-expression forms. TTAP focuses on the arts which include painting, music, dance, sculpture, and writing. The resident is empowered by their ability to choose colors, media, word choices, and music styles. The resident is further empowered to plan social events celebrating their accomplishments by planning events such as themed meals for other residents, staff or family members. Finally, the most important opportunity to engage in empowerment and self-advocacy is when the individual is asked to evaluate their experiences and offer suggestions for improvement and options for future TTAP experiences.

Upon first impression, I felt that this book was directed towards Therapeutic Recreation and Activities professionals. The text provides an overview of Alzheimer's disease and dementia, an overview of the TTAP, basic brain anatomy and physiology, and details of neurophysiological responses in clients engaging in the TTAP. Upon further reflection, this book is meant for everyone. Culture change within a care center, regardless of the method chosen, can only happen with support from administration. Once administration has chosen the method of culture change there must be education and acceptance by all stakeholders, particularly the nursing assistants. In the final chapters there is discussion about the replication of Levine Madori's TTAP at multiple care facilities. As an administrator, the part that caught my attention was that one facility claimed an estimated cost savings of over $160,000 in one year (170). As an educator, I could see this text being utilized in gerontology, activities, and recreation courses. Of further interest to the academicians is the chapter that highlights how the TTAP is grounded in interdisciplinary research with foundations from theories in developmental, life span, recreation, psychology, life review, neurodevelopmental, object relations, and gerotranscendance.

I found the appendixes to be a great strength of the book and helpful to me as an administrator. In Appendix A, Levine Madori provides sample protocols for the TTAP which details the treatment protocol, the materials needed for the session, the rationale for the session, how clients are referred to the sessions, risk management, the structure of the session, time allotment, outcome and evaluation gathering as well as personnel needed for implementation. Appendix B provides sample assessment tools. Appendix C provides ideas for programming using affordable, everyday supplies that are budget friendly. Appendix D provides samples of graphic visual organizing tools to help clients to develop themes for the session. Appendix E provides a list of suggested themes to initiate the session. A weakness for me is that I personally would have liked to have seen more detail in Appendix A as well as more information on actual implementation. However, upon further research at www.levinemadoripdd.com I found that the author has written other companion books that may provide the additional information I am seeking. As my interest was piqued by the cost savings at one facility, I would have like more information in this area.

As facilities and those who regulate them struggle to meet the changing demands of the industry and their clients, I find this book to provide an excellent opportunity to begin or advance current progress on implementing person-centered care. Finding the method that meets your facilities personality and culture can be a challenge. Whether the TTAP is the right one for a particular facility, only the staff and residents can tell. Regardless of the method adopted, there are definitely lessons to be learned and incorporated into any activity or recreational program.

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Karen L. Fingerman, Cynthia A. Berg, Jacqui Smith & Toni C. Antonucci, Eds. Handbook of Life-Span Development. Springer Publishing Company, New York, 2011. ISBN 978-0-8261-1079-4. pp881. E-book ISBN: 978-0-8261-1080-0. Price $125.00 (Hardcover)

(Karen L. Fingerman et al. continued)

Karen Fingerman, PhD is Professor of Developmental and Family Studies at Purdue University; Cynthia Berg, PhD is Professor of Psychology at the University of Utah; Jacqui Smith, PhD is Professor of Psychology at the University of Michigan; Toni Antonucci, PhD is Professor of Psychology and Research Professor of the Institute of Social Research at the University of Michigan.

The handbook is an impressive collection of research studies and theories provided by knowledgeable contributors on life-span development from conception to old age. The 32 chapters are organized within four major thematic sections: 1) Theory and Overviews; 2) Physical and Cognitive; 3) Socio-emotional; and 4) Contexts of Development. Exemplars from each section are selected to demonstrate related content. Relationships, the environment and socialization threads are interwoven throughout the text. Study findings of population and generational groups are discussed; however, the uniqueness of the individual is addressed.

Theory and Overviews (8 chapters)- Several theories and models used by scientists and their study approaches are included in this first section of the book. Attention is given to biological and cultural processes involved in the human complex development system. Heredity accounts for only a portion of variance in human development, for from the moment of birth, a child's experiences and behaviors are shaped by the culture and customs of the environment. The parent-child attachment has a great influence—whether positive or negative—on the child's socialization processes. Socialization continues through interaction with important others that make up the immediate and social environments. The environment shapes a person's interpretation of self, relationships with others, social networks, and aids the individual in finding a sense of meaning in the past, present, and future life. Socialization represents stability and is composed of many discrete and related acts over an extended period of time.

The authors present an overview of the early research that influences the current work about human development. Erik Erikson (1950/1963 and 1968) based his psychosocial theory of task development on the work of the early 19th century scientists, Charles Darwin and Sigmund Freud. According to Erikson the success of completing an age specific task before moving to the next task, or failure to do so, is measured by sociocultural expectations. Robert Havinghurst, whose work was influenced by Erikson, stated that task development is accomplished through biological maturation, sociocultural pressures, and the values and goals of the individual. Many theorists have selected these theories as the basis for cross-sectional and longitudinal studies in education, sociology, anthropology, psychology and other sciences. Life-span developmental theory emphasizes that human development continues from birth to death; therefore, this theory can open new paths for examining the tasks of adulthood that have not been fully explored.

The Convoys of Social Relationships: Past, Present and Future model can be an excellent tool for an individual as the central person to identify the people that make up a support system in three concentric circles in the order of most importance. The scientist and the individual can, then, explore the type of support these people provide, and how the circles constrict and expand throughout the individual's life span. Each life cycle has its own challenges and rewards. The model can, also, help to explain how the individual adapts to these gains and losses. To date there is scant research on the transitional phases of life. Recommendations for future research include frequent observations of a cohort group and individuals to discover the subtle changes that occur over a life time.

*Physical and Cognitive (9 chapters)-*The authors in this section provide an overview of neurological anatomy and the structural changes in the developing brain. Study findings revealed that neurogenesis occurs prenatally and that the majority of brain growth volume occurs in infancy and the toddler years. Axons and new synapses are formed throughout life, yet some are eliminated as the person becomes more efficient in processing information. Additional studies were conducted to understand individual differences in behavior and cognition. Other research designs were used to study the effects of maturation on sensory, motor, cognitive, linguistic and social processing through childhood and adolescence. Magnetic Resonance Imaging (MRI), Positive Emission Tomography (PET) scans and other technologies have permitted scientists to begin mapping the brain structures.

Technological advances have also assisted neuroscience researchers in examining and identifying the changes in the aging mind and brain. Researchers have learned that long term memory in older adults varies, and some people use different brain areas to preserve their cognitive abilities. Research on these areas is relatively new. There is evidence that the brain is particularly sensitive to

social stimuli. Theories derived from these studies may provide key insights in ways to combat adverse effects of aging on cognition such as perception attention, working memory, executive control functions and long-term memory. The aging population is ripe for studying brain disorders like dementia which is not part of normal aging; however, the risk increases with age and the etiology is still not understood.

Socio-emotional (8 chapters)- The control of emotions is not an easy task for the very young. Researchers usually observe the mother as the principal care provider who serves as the external regulator of the behavior of the infant and young child. Personality and temperament are, also, frequently associated with emotional responses to environmental stimuli. Emotion control is particularly difficult for teenagers due to the changes in hormone levels and the effects on rapid changes in moods. Studies have found that the most dramatic increase in clinical depression rates peak during the ages of 15 and 18 years. However, maturity and the pressure of social behavior expectations have a great impact on the person's control over emotional responses and coping mechanisms.

Narratives have been important methods for centuries to convey historical facts to generations of people. Children enjoy listening to stories, and frequently create their own life stories about their identity and who they want to be. During the middle years, individuals focus their narratives on their memories of a specific life event or happenings over an extended time frame. Their accounts depict the "high and low points, turning points, and other emotionally charged events" (p. 596). Reflecting on these events may build social relationships, strengthen connections with family, and can substantiate the person's identity. Story telling can, also, be therapeutic in coping with losses and other negative life events. Research with older adults has revealed that narratives are a means for discovering the various strengths as survivors over their personal life challenges. Researchers have discovered that intergenerational story telling can affect the development of people of all ages. The narrative can be a legacy to leave for the next generation.

Contexts of Development (7 chapters)- The authors comment that research on cognition, emotions, and motivation development can be dependent upon the changes or consistency of social environments for individuals and groups. The context should be used to develop the research questions. Researchers are concerned about the inequalities that include race, ethnicity, gender, sexual orientation, class, age, and geographic location. Additional factors include citizenship, and the concentration of living in affluent or in high poverty neighborhoods.

The neighborhood environment is of particular interest to researchers in public health, sociology, developmental psychology, economics, and epidemiology. Residents often describe their neighborhood as an expansion of the family. Socialization that begins in the home moves on to the schools and into the neighborhood. Many researchers have examined neighborhoods from ecological and sociological perspectives. Several theories are needed to adequately explore the many variables involved. However, due to the inevitable changes and instability in neighborhood environments, researchers have difficulty in conducting longitudinal studies. The authors suggest that interdisciplinary collaboration and different methods of inquiry including inter- and intra-generational studies are required in order to capture all concepts that are involved.

There is a need for additional theoretical guided empirical studies related to racial and ethnic inequalities associated with neighborhoods where there is disproportionate allocation of economic and social services. Poverty neighborhoods can be dangerous living environments. Research has revealed that infant and pregnancy mortality rates are greater, unemployment is prevalent, and poor healthy lifestyles contribute to poorer outcomes including acute and chronic illnesses.

Reflecting back and Looking Forward to the Future- Our world is changing rapidly. The turbulent nature of post-modern society has resulted in many social roles that did not exist for older adults when they were young. Today's family roles have different responsibilities and realignment of activities than a few decades ago. Technology has a major impact on the lives of everyone, and will continue to do so. One often wonders what our world will be like in 2025, 2050 and beyond. My review was conducted within the health care perspective. I can envision many possibilities for research in the future. Perhaps a legacy for this book is being the first edition of handbooks that will follow.

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Book Reviews

Aldwin, Caolyn M. and Gilmer Fox, Diane. Health, Illness, and Optimal Aging: Biological and Psychosocial Perspectives Second Edition. New York, NY: Springer Publishing Company. 2013. ISBN 978-0-8261-9346-9, 416 pp. e-book ISBN 978-0-8261-9347-6 Price $90 (Soft cover)

The rising number of aging adults has increased exponentially both within the United States and abroad. This increase warrants a critical examination of the ways in which these adults can obtain and maintain optimal health and address illnesses throughout the aging process. Drs. Carolyn Aldwin and Diane Gilmer explore, address, and articulate ways in which optimal aging is understood. They revisit their earlier work with regards to optimal aging in the second edition of Health, Illness, and Optimal Aging: Biological Psychosocial Perspectives with the intent of expanding their current arguments, providing a useful toolkit for researchers, scholars, caregivers and health providers, to use in continued gerontological studies.

Aldwin and Gilmer have written a text that is accessible to senior level and honors undergraduates as well as graduate students across disciplines and orientations. This book also will appeal to researchers across the social, biological, and psychological sciences. It serves as an excellent medium for fostering and engaging in interdisciplinary research. Clinicians and care providers will find this text to be a useful tool in exploring integrated health care of the aging.

The authors are very explicit in stating that one of the primary goals of this expanded text is to advance and be a facilitator of knowledge as it relates to optimal aging. Throughout the text the authors intricately weave a multi-dimensional tapestry for late life studies. Each chapter critically examines emergent gerontological themes across disciplines. They posit that late life research and scholarship cannot be understood through a singular theoretical model; however, these areas of study would greatly benefit from an integrated and holistic approach. Aldwin and Gilmer argue that "gerontology is not yet at a stage in which a unified theory can be proposed. The book is organized so that it illustrates the various ways in which multiple theories can be used to advance research and scholarship. The authors indicate that their overall goal in this edition was "to examine the biological and psychosocial aging literatures to determine whether they can be organized using the aging accelerators and decelerators model, in order to enhance understanding of the many facets of aging and to promote optimal aging and to create a bridge for understanding across disciplinary boundaries (3,6)."

The book is organized into four very distinct sections: 1) Demographic, Theoretical, and Methodological Issues; 2) Aging of Biological Systems; 3) Psychosocial Factors Affecting Physical Health; and 4) Practical and Clinical Aspects of Aging. Each section is underpinned with the theme of accelerators and decelerators that factor into the ways in which individuals participate in aging. These sections serve as a backdrop for the anthropologist, psychologist, medical practitioner, and lay person to glean important interrelated components of aging.

Like the ways in which an individual progresses through various life stages, the strengths of the sections and chapters in this text follow similar trajectory. One of the many strengths of this book begins in the introduction, is followed by chapter 4, and concludes with chapter 14. In the introduction, Aldwin and Gilmer carefully outline the basic concepts in aging. They provide the reader with a set of definitions that puts aging and identity into context as well as delineates the notions of health and illness. In chapter four they walk the reader through the processes of aging research. This is a particularly useful section for the senior level or honors undergraduate student that desires to engage in aging research. Chapter fourteen defines and articulates the notion of optimal aging. Of interest in this chapter, are the sections on wisdom and optimal aging, religiousness, spirituality, and optimal aging, and ars moriendi-the art of dying. These sections portend a literary artful finality to the text. Finally, the primary strength of this book is the implicit optimistic tone of the text. Aldwin and Gilmer illustrate that an individual has the ability to age gracefully they need not take "the lay down and die approach" to aging. The aging adult is equipped with different ways of aging well (6). They are able to live sustainable healthy physical and mental lives.

Aldwin and Gilmer have supplied an interesting textual model for examining health, illness, and aging. Their homogenized approach to aging research is refreshing and insightful.

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Book Reviews

Van den Hoonaard, Deborah K. By Himself: The Older Man's Experience of Widowhood. University of Toronto Press. 2010. ISBN #978-1-4426-4109-9. 198 pp. $45.00 (Hardcover)

Deborah K. van den Hoonaard is a sociologist, professor and qualitative Research Chair at St. Thomas University in Canada. Her recent book, By Himself, provides a revealing look at the lived experience of widowhood for older adult men. The book is divided into four parts. Part One introduces the conceptual basis for van den Hoonaard's research, with Parts Two, Three and Four containing in-depth chapters that explore various aspects of widowhood for these men.

Part One orients the reader by describing the theoretical and methodological issues of van den Hoonaard's study. Chapter 1 situates her research within the wider body of literature on widowhood that is often based on the perspectives of women or younger widowed men. Van den Hoonaard's work is distinct in this area of research given its focus on older adult male widowers, a group that is relatively unknown in the literature. Grounding her study in a symbolic interactionism framework, van den Hoonaard interviewed older adult men living in rural Atlantic Canada and Florida retirement communities to explore how widowhood is conceptualized from their perspective. The author began recruiting for her study exclusively in rural Atlantic Canada. Yet she notes that "widowers were not easy to find" (van den Hoonaard 2010: 13), and expanded her recruitment to include widowers living in Florida. Although this geographic expansion of her research was not anticipated, the author felt the more diverse sample provided deeper analytical insights. In chapter 2, van den Hoonaard discusses how widowhood is inherently a gendered experience and consequently emerged as a key theoretical issue that she effectively integrates throughout subsequent chapters. She notes how the men never considered widowhood a possibility in their lives, operating under the assumption that their spouses would outlive them. When the men became widowers, they felt disoriented and "did not know where they belonged in the foreign country which they had entered when their wives died" (van den Hoonaard 2010: 21). Their sense of masculinity, already threatened by age, also became threatened by widowhood, a status that deprived these men of "visible heterosexuality" (van den Hoonaard 2010: 20).

Part Two focuses on the men's experiences coping with their wives' illnesses and deaths. In chapter 3, van den Hoonaard provides a compassionate account of the widowers' experiences interacting with and caring for their wives once they became ill. The author analyzed the widowers' discourse, which revealed speech patterns that "emphasize their masculinity" (van den Hoonaard 2010: 31). For example, when describing their caring presence at their wives bedside, the men's discourse revealed how they embodied the gendered role of the committed husband. The period immediately after their wives' deaths, the subject of chapter 4, brought a range of emotions from "shock" to stoicism (van den Hoonaard 2010: 49) for the widowers. The men described various forms of social support from friends, family and religious affiliations that provided a needed sense of comfort during this difficult time. The men also took comfort in how well their wives were thought of, symbolically represented in high number of funeral attendees. Yet the harsh realities of widowhood existed beyond these comforting social networks as some men had to settle financial affairs that included continuously furnishing death certificates, which acted as a stark reminder of their profound loss.

Part Three describes the widowers' various social relationships. Chapter 5 focuses on how the widowers interact with their children, and provides numerous ethnographic examples illustrating the multidimensionality of these relationships as well as boundary issues. Some of van den Hoonaard's findings about these relationships are not unexpected, such as daughters fulfilling some of their mother's gendered roles like cooking or maintaining traditional family events. Interestingly though, the author also discovered that some of the widowers used the interview as an opportunity to openly discuss their children's "flaws" and that "the men tended to blame their wives" for these issues (van den Hoonaard 2010: 76). Chapter 6 focuses on female companionship and begins with the author acknowledging that her data "reinforced the commonly held belief that finding a new woman is an intrinsic part of widowhood for men" (van den Hoonaard 2010: 84). Van den Hoonaard draws cultural contrasts between the men in Atlantic Canada and those in Florida regarding how each interprets their relationships with women. For instance, the Atlantic Canadian men describe a great sense of discomfort if women are too forceful when vying for their attention. Chapter 7 provides another viewpoint into the men's social networks through examining their friendships. The closing of one's social network after the death of a spouse is a common experience of many widowers, both male and female, according to the author. The men in van den Hoonaard's study

are no exception. For example, some of the men found that their widower status made them "the odd man out" (van den Hoonaard 2010: 109) when socializing with their married friends. Yet van den Hoonaard's method of qualitative inquiry reveals that the closing of one's social network is not experienced by all widowers. One of her participants, a widower living in a Florida retirement community, discussed how his friends rallied to his side after his wife's death and continued their friendships with him thereafter.

Part Four describes how the widowers conceptualize "everyday life" (van den Hoonaard 2010: 121), which includes "keeping busy" (van den Hoonaard 2010: 123), the focus of chapter 8. To stay busy, the men describe volunteering, doing "odd jobs" (van den Hoonaard 2010: 133) and informal socializing as opportunities for them to leave their home and engage in activities that reinforce their masculinity (such as fishing). Leaving the home is highly important for these men, as an empty home is a significant symbolic reminder of the loneliness associated with widowhood. Interestingly, van den Hoonaard notes that the men preferred spur-of-the-moment over pre-planned activities as it asserted their independence. Cleaning the home and cooking is the subject of chapter 9, and the men perceived these tasks traditionally female oriented. As a result, they had no desire to "to master" (van den Hoonaard 2010: 159) this domain; rather they preferred doing just enough cooking and cleaning to get by on a daily basis. When the widowers did clean or cook, they spoke about their experiences using very masculine language to justify engaging in these feminine tasks. In the following chapter, chapter 10, Van den Hoonaard concludes her book with an overview of key themes, and provides some insights for future inquiry.

Overall I found myself immediately engaged by van den Hoonaard's book that paints a poignant ethnographic picture of these men's lives as widowers. What makes this book so engaging is her ability to iterate detailed ethnographic examples with theory to provide a robust analysis of this experience, yet one that is firmly grounded in the men's experiences. This book showcases her skill as a qualitative researcher and storyteller, and provides a significant contribution to the gerontological theory on widowhood. This is a highly readable text that would be appropriate for both undergraduate and graduate courses in gerontology, sociology, anthropology and aging studies. Researchers interested in conducting qualitative studies with populations that are more difficult to access will also find this book a valuable resource. Van den Hoonaard includes her interview guide at the end of the text.

The views expressed in this review are those of the author and do not necessarily represent the views of the Department of Veterans Affairs.

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Feil, Naomi and de Klerk-Rubin, Vicki. The Validation Breakthrough: Simple Techniques for Communicating with People with Alzheimer's and Other Dementias. 3rd edition. Baltimore, MD: Health Profession Press. 2012. ISBN 978-1-932529-93-7, 304pp. $34.95 (paper).

Nearly five decades have passed since Naomi Feil originally developed Validation as a therapeutic tool and in this time, organizations and families throughout the world have experienced and attested to its benefits. In this most recent edition of The Validation Breakthrough (3rd ed.), Ms. Feil, along with co-author and master-teacher Vicki de Klerk-Rubin, continue to refine the terminology, concepts, theoretical underpinnings, and techniques of Validation. The authors have expanded the number of case studies and testimonials from certified Validation teachers, and updated resources for readers who seek additional training and information.

Stated simply, Validation is a method of empathetically communicating with and caring for disoriented older adults who have Alzheimer's disease or other types of dementia. It is intended to benefit very old persons who are disoriented and who frequently exhibit challenging behaviors, as well as the persons caring for them. The authors contend that challenging behaviors often arise from a person's struggle to resolve unfinished business during their last stage of life. As the disoriented person progresses through phases of resolution, caregivers can employ the Validation techniques to connect with the person and assist them with expressing repressed emotions.

As with previous editions, the book

is organized into three parts. Part one begins with descriptions of the theoretical underpinnings, concepts, assumptions, benefits, limitations, target populations, and techniques of Validation. A substantive chapter is then devoted to each of the four phases of resolution (i.e., maloriented, time confused, repetitive movers, vegetation) and one brief chapter is devoted to people with early-onset Alzheimer's disease. Although the authors attempt to review some of the literature about the efficacy of Validation (Ch. 8), this is by far one of the weakest chapters in the book. The authors conclude this section with a useful albeit brief discussion of how Validation compares to other therapies commonly used with disoriented older adults who have dementia (Ch. 9). Part two of the book focuses on case studies and testimonials from certified Validation teachers. It features stories of older adults in each of the four phases of resolution and how Validation benefited them and their caregivers. Part three provides a detailed description of how an organization can set up a Validation group.

Unquestionably, the greatest strength of this publication is the large number of real-life examples that portray the challenging behaviors commonly exhibited by the target population and how Validation techniques were, or could be, applied to the situations. These cases make the book easy and enjoyable to read, while also providing an accurate portrayal of challenges constantly faced by professional and informal caregivers. Testimonials from Validation teachers and authorized organizations throughout the world appear at the end of each chapter and also in the appendix, providing compelling stories about how Validation has helped their residents and staff.

This book has broad appeal to a variety of audiences, but is especially appropriate for health professionals and other caregivers who interact frequently with the Alzheimer's and dementia population. It is a useful guide for activity directors and nurses working in long-term care facilities and adult day centers. Students seeking an introduction to this particular method of care or seeking insight into the disoriented, dementia population will also benefit. The content is particularly germane to the fields of interpersonal communication, nursing, gerontology, rehabilitation therapies, psychology, and anthropology. Professional caregivers who are already familiar with Validation and researchers seeking a thorough discussion of the scientific merits of this method, may not gain much additional insight from this new edition. It is an essential read, however, for persons considering Validation certification as well as facilities that are considering becoming an Authorized Validation Organization. Family members and other informal caregivers struggling to understand and communicate with a disoriented older adult may experience greater empathy and may be able to more frequently connect with the person after reading this book and implementing the recommended techniques. Students, health professionals, and family members alike will most likely enjoy reading this book due to the numerous cases and examples of application. While Validation is not intended for all disoriented elderly populations, it is an important therapeutic tool for caregivers to have in their tool box.

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Film Review

Grandma, a Thousand Times (Teta, Alf Marra). 48 minutes. 2010. UAE/Qatar/Lebanon: Veritas Film. (Mahmoud Kaabour).

'Grandma, a Thousand Times' is a sweet and poignant documentary about an aging and spirited Lebanese matriarch in a memory-inducing neighbourhood of Beirut. Writer and director, Mahmoud Kaabour, pours his heart out in this measured yet never over-sentimentalized film about his grandmother Teta Kaabour (a.k.a. Hajjieh Fatima). Mahmoud, who has been living abroad, is haunted by an audiotape of his grandfather's violin playing. The seven taqsims (melodic improvisations) on the tape bring the filmmaker back to his home, to the house of Teta. There, we are treated to acts of love; love of a supra-motherly kind that only a grandmother knows how to impart. Mahmoud and Teta reconnect on the screen, and we are witnesses to acts of intimate kinship. We see Teta peeling an orange with a small knife expertly, and then feeding Mahmoud with her clean bare hands.

Part of the charm in this documentary rests with the fact that Mahmoud not only looks like his grandfather, but also bears his first name. In an intricate weaving of intergenerational ties and the annoyances for Teta surrounding Mahmoud's uncanny resemblance to his grandfather, grandma is once again ignited in her anguish and longing for her deceased husband. This is compounded when Mahmoud takes Teta down the street in the morning dressed up in fine clothes, donning a red fez hat before he gets married to Eva Star Sayre.

For most moviegoers, this short

film will function as a window into a family, largely kept together by Teta, and what she means to them and their memories of Beirut. They may also empathize with Mahmoud and his siblings' desires to keep their snapshot of Beirut and Teta alive and unchanged for as long as possible, even if that means turning a blind eye to Teta's hobby of Arguileh smoking.

What I came away with, however, were some other aspects that captured my attention. To begin with, the documentary showcases a very ethnographic account of what old age is like. Grandma realizes that she needs to exert herself intermittently, probably because of her lack of regular exercise and stamina. This amounts to getting out of the chair and taking a few more steps to fetch something instead relying on Hasna the hired caregiver to do so, and haggling on the phone with a desirous feistiness for the freshest and leanest cuts of meat from the butcher.

Her feet are old and swollen, and we see them juxtaposed against the newly laid out winter Ajami rugs. Teta tells her grandson, that she also likes gum, but she only puts it in her mouth; she is unable to chew it fully. We see how she moves, and waves deliberately and methodically without wasting energy or flexing unnecessary muscles. She inhabits her empty house, but for her children (and their children) she is the warden of their 'home'. Furthermore, Teta is not a boastful matriarch. She is a survivor thrust into her position by the people around her who invest their memories with and in her. Teta inherits and negotiates this role with a mixture of good humor and good politics.

We are often told that the elderly need to tell their stories, that reaching back is a way of providing continuity and narrative therapy. In this film, it is apparent that it is Mahmoud and his siblings that need the narrative as a reminder and a lodestone for their own history making and ontologies. We may need narratives of our elders, but for the aging, they need real time commentary, commentary on their lives as things change around and with them. Teta has perfected her daily rituals of smoking Arguileh, of sitting outside on the balcony, and of providing her own life commentary. It is this subtle and dual commentary: of us talking about our elders and our elders reflecting on themselves that merges the past, present and future.

Even though this documentary is all too brief, there are beautiful images that lace seamlessly with spiritual solo violin, lingering on well after the film's ending. In one gorgeous scene, a marble gravestone is being cut with a wet saw, and we can't help but feel the intensity and sorrow associated with the bleeding white tears of the marble slab. Teta is called upon by her family a thousand times, and Insha'Allāh she will remain Teta for thousand and one more nights.

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If you are interested in writing a book, film, journal or exhibit review for *Anthropology & Aging Quarterly*, please contact:

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