

On the Shoulders of a Giant: The Legacy of Matilda White Riley for Gerontology

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The legacy of Matilda White Riley to the study of aging encompasses multiple disciplines and extends to multiple domains within these disciplines. Although her greatest intellectual legacy is in sociology, she presented a compelling vision of the need for other disciplines to consider the role of social forces in shaping both aging as an individual, lifelong process and age as a feature of culture and social systems. This article reviews Riley's theoretical contributions in four areas: (1) articulating age and social systems; (2) identifying fallacies in the interpretation of research on aging; (3) theorizing about social change and structural lag; and (4) presenting social possibilities related to age integration. We conclude by considering briefly the reach of her legacy beyond sociology—in collaborating across disciplinary boundaries, in encouraging the development of sound longitudinal data archives, and in developing an institutional infrastructure to support and sustain research on aging in the social and behavioral sciences. Although short of physical stature, Riley's contributions to gerontology are enormous. Gerontologists from many disciplinary backgrounds have been informed by and rely upon these insights and thus share the advantage of "standing on the shoulders of a giant."

IT MAY not be widely appreciated that Matilda White Riley began to study aging at a point in her career that would traditionally be considered "late," in her mid-50s. Her entry into the field of aging was actually occasioned by the strength of her earlier work: Her reputation for research excellence and scholarly sophistication prompted the Russell Sage Foundation to invite Riley to conduct a review of the state of knowledge about aging in the social and behavioral sciences. That invitation sparked what became the three-volume work, *Aging and Society*, published between 1968 and 1972 in collaboration with Anne Foner, Marilyn Johnson, and Jack Riley. *Aging and Society*, of course, marked the beginning of a scholarly pursuit that was the focus of Riley's attention for more than 35 years, until her death in November 2004.

One of Riley's hallmarks as a methodologist and teacher of methods was her insistence upon clarity and rigor with respect to one's theoretical assumptions and substantive objectives. Indeed, the legendary two-semester research course that she developed and taught at New York University and Rutgers (and for which she wrote her two-volume research methods textbook [Riley, 1963]) was entitled "The Integration of Theory and Method." To acknowledge these earlier interests and contributions is not just a matter of historical interest. They provided the foundation for the careful, disciplined thought that Riley applied to both aging theory and aging research. Combining attention to theory and empirical research was indispensable to the development of the *Aging and Society* approach.

Talcott Parsons was both a teacher and a long-time friend of Jack and Matilda Riley, and Riley utilized the key categories and principles of Parsonian theory, which she appropriately framed in terms of "social systems" theory. This is not the place to debate the substantial strengths and fundamental limitations of Parsons's comprehensive theoretical edifice. There is, however, an interesting irony in Riley's application of it to aging. Parsons's functionalist framework has long been charged with being conservative, both theoretically and politically, and

in some respects, Riley's use of this framework has been vulnerable to similar critiques. Yet, in applying it to the substantive area of aging, she transformed key Parsonian principles into a foundation for radically rethinking age, both theoretically and politically: theoretically, by compelling a reconceptualization of age that differentiated individual interests from social arrangements; and politically, by offering scientifically grounded support for efforts in policy, practice, and popular culture to change the way we think about age in general and elders in particular. Of course, Riley and her group were not the only social scientists to raise fundamental questions about the need to examine age and aging not only as biological but also as distinctly sociological phenomena. From the beginning, she and her colleagues credited the important pioneering work of Burgess (1960) and Rosow (1967) on old age as a "roleless role," Cain (1964) on the intersection of the life course and social structure, and scholars such as Maddox (1962), Neugarten (Neugarten, Moore, & Lowe, 1965) and Streib (1958) on methodological as well as substantive issues. However, Riley's approach is both distinguished and empowered by providing a systematic and comprehensive sociological framework and by the balancing of that abstract theoretical framework with a sophisticated methodological approach for handling actual empirical data.

These radical and compelling challenges to conventional ideas about age also reflect the major dimensions of Riley's contributions to social gerontology. Therefore, we will use them as an organizing framework for this article, which is divided into five major sections: (1) articulating the interface between age and social systems principles; (2) identifying fallacies of interpretation laid bare by the logic and methodology of cohort analysis; (3) conceptualizing age as a force for social change through, for example, the mismatch between persons and roles; (4) critiquing existing social arrangements and offering an alternative social vision organized around her notion of an age-integrated society; and (5) contributing to research on aging beyond the discipline of sociology.

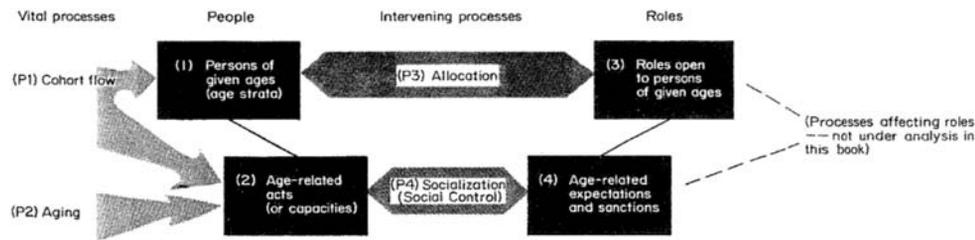


Figure 1. Processes related to structural elements. (From Riley, Johnson, & Foner, 1972, p. 9).

Taken together, it is an enormous and invaluable legacy. Riley's work is, of course, not without problems, and she is not without critics. Yet few of her critics would deny being indebted to some of her formulations and ideas. Many of us involved in aging research find appropriate the classic aphorism attributed to Isaac Newton: "If I have seen farther, it is by standing on the shoulders of giants" (see Merton, 1991).

AGE AND SOCIETY: BASIC SOCIAL SYSTEMS PRINCIPLES

In presenting her basic framework, Riley typically relied on the diagram presented in Figure 1. This diagram, seemingly simple and straightforward, captures elegantly the complexity that a social systems approach to individual aging entails and in so doing lays the basis for a critique and alternative vision of how individuals age in a society. As Riley and associates regularly emphasized, the diagram follows the useful Parsonian systems theory distinction between *persons* and *roles*. Persons, of course, are individual human actors. In this framework, roles are not properties of persons; they are positions in social systems (e.g., families, communities, schools, corporations) that are occupied by persons. Especially when social systems are age graded—as they have increasingly become with the advance of modernity—age is a feature not just of individuals, but of the role structure of society. But social systems are characterized by more than roles. Among other features, any established social system has its own normative structure that dictates what is acceptable, appropriate, and possible for the various role incumbents within the system. When roles are stratified by age, so therefore are norms. Social systems thus regulate age, and individual age becomes a property of social systems as well as of individuals.

Age as a Property of Social Structure as Well as Individuals

The importance of the distinction between individual age as a property of social systems and age as a property of individuals as individuals cannot be overestimated. This differentiation forms the basis for distinguishing individual possibilities from role prescriptions, but it also illuminates the dynamic relation of stable structures and the constant aging of individuals that is captured by the notion of *cohort flow*. Building on Ryder's (1965) introduction of the cohort concept to sociology, Riley introduced the concept of cohort flow to describe the dynamic, temporal process that (1) locates cohorts within a particular slice of a society's historical development and (2) explicates how lives intersect with social systems as individuals move through the life course. As components of social systems, age-graded roles are part of the relatively stable apparatus of social

structure. The roles themselves do not "age," but as cohorts pass through them, their members are experiencing their own individual processes of development and aging.

The clarification that individuals of a particular age are separable from and not reducible to the age-graded roles they occupy (with their normative expectations, requirements, and presumptions of self-definition) is a contribution that was presaged by the work of others (e.g., Cain, 1964; Rosow, 1967) but is given a central position in Riley's conceptual framework. It provides a theoretical basis for a systematic skepticism toward every social-system pronouncement about the character of age—whether by educational, medical, psychological, or other experts—because to carry any weight whatever, all such pronouncements are necessarily part of cultural and social systems. From this perspective, whether or not such statements are accurate as generalizations about the nature of individual aging is uncertain, and assessing them requires rigorous empirical analysis. What can be said with certainty is that these are assertions that have a place of normative acceptance and functional compatibility within the social system and thereby give legitimacy to and are legitimated by ongoing social dynamics.

This insight has found a familiar application in social critiques of ageist social system practices—whether mandatory retirement or the stigmatization of old age. However, it goes far beyond the specific application to old age. No less than in dealing with the aged, it is a view of age that also invites critique of age-graded schooling and of the age-graded developmental assumptions that legitimate it, for example, in the use of age as an eligibility criterion for a range of citizenship rights and roles, and in the uncritical use of age as a variable in research in virtually every discipline that studies human beings (see, e.g., Riley, 1978).

The differentiation of structural versus personal loci of age as a construct also provided the basis for the additional step Riley took in counterposing the two in her later work. It is the conceptual basis both for the idea of structural lag (the idea that current social arrangements are ill prepared to mobilize the talents and energies of those who may be excluded by virtue of socially defined age norms or rules) and of her arguments about age integration, pointing to a specific need for social change. We will explore the implications of these points in subsequent sections on Structural Lag and Age Integration.

Riley's Implicit Critique of Parsons

Before leaving the discussion of Riley's theoretical contribution, it is worth pondering a bit further the significance of the originality involved in her basic application of the Parsonian framework. This is especially relevant because that traditional

framework, with its strong emphasis on social legitimacy and consensus and its steadfast avoidance of power as an essential theoretical category, is still a strong influence—if often an implicit one—upon the thinking of social gerontologists from numerous disciplines (for discussions, see Dannefer, 1999; Dannefer & Uhlenberg, 1999; Estes, 2001; Holstein & Gubrium, 2000; Walker, in press).

Although Riley has often been considered a rather standard functionalist, it should be noted that the way she deployed the social systems framework represents quite a departure from traditional Parsonian theory. Parsons and other leaders of the functionalist tradition were generally at pains to show both the functional utility and value of existing arrangements and the high degree of consensus and harmony that characterized the relation of the individual to society. It may be remembered that Parsons himself wrote a supportive and largely uncritical preface to Cumming and Henry's (1961) ode to ageism as a natural phenomenon, *Growing Old: The Process of Disengagement*. The idea that the institutions of a relatively stable, prospering, "enlightened," and "democratic" society might be systematically and severely constricting the lives and potentials of its members does not fit well within the consensus-theory bias of the Parsonian framework.

Thus, we have the paradox that Riley mobilized the analytical elegance and discipline of functionalist theory as the basis for a profound social critique that the logic of pure functionalism would have never suggested, because her critique contradicts the beauty of an abstract (and empirically untested) theorized version of society as a stable, harmonious, functioning entity. It is also a critique that many social scientists working in other traditions (e.g., feminists, antiracist theorists, and many stratification theorists) have been slow to grasp. There are scholars, some quite radical in their own specialized fields, who still appear to derive their own images of aging from uncriticized popular stereotypes.

Limitations of Riley's Functionalist-Based Paradigm

The value of this contribution notwithstanding, critiques of Riley that identify weaknesses arising from her functionalist leanings have merit. As critics have rightly noted, Riley—consistent with her Parsonian heritage—showed virtually no interest in the role of power differentials in and the resultant potential for conflict in accounting for age-related social dynamics (e.g., Hendricks & Hendricks, 1992; Marshall, 1999; Passuth & Bengtson, 1988). Two areas where limitations following from the neglect of power can be seen are the neglect of other bases of stratification (class, race, and gender) and their intersection with age and her conceptualization of how social change—a primary source of cohort differences—occurs.

The neglect of other bases of stratification.—Riley's framework shared with other leading scholars in fields of life span, life course, and aging studies a singular dedication to the way that social forces play out in the intersection of age structure, social change, and individual aging. This is closely akin to the problem that has been described as "the social change problem" in aging research (Dannefer & Uhlenberg, 1999; Hagestad & Dannefer, 2001). This strong emphasis in Riley's work eclipsed questions of intra-age and intracohort stratification and questions of how the dynamics of age

stratification and cohort flow intersect with other bases of stratification, notably class, ethnicity, and gender. Except for her frequent discussions of strains produced by gender imbalances in the age structure, she paid little attention to such factors. (It should be noted, however, that Riley was not "ideological" about her strong age/cohort focus. She supported and even commissioned work that elaborated the interaction of age with class and gender [e.g., Dannefer 1987; Foner, 1974, 1994; Henretta, 1994; Markides, 1983].)

Mechanisms of social change.—Much like Parsons, Riley dealt with the problem of reconciling human action and structure through a heavy reliance on "voluntarism" (Alexander, 1983; Parsons, 1968). Thus, Riley's discussions of how individual agency produces change in large-scale social systems focus on the aggregation of "individual choices" in processes such as "cohort norm formation." In every case, she avoided examining the role of social movements in shaping (rather than merely expressing individual aspirations) and of institutional power as it operates in everyday life to organize individual opportunities, to limit choice, and indeed to shape individual taste and perception. These limitations derive directly from the underlying assumptions of consensus and voluntarism that are simultaneously hallmarks and limitations of the functionalist framework. It is thus a considerable irony that, in spite of these limiting aspects of functionalism, Riley used the analytical precision of that framework to generate a radically new and potentially liberating vision, exposing how age operates as an aspect of social systems (e.g., role structures as entirely separate from people and age as a property of social organization, value, and perception, not just of the chronological development of individuals.)

AGE, COHORTS, AND CHANGE: THE PROBLEM OF IDENTIFICATION AND FALLACIES OF INTERPRETATION

Riley cannot be credited with introducing the concepts of cohort, life course, and social structure. Ryder (1965) wrote the seminal sociological article on cohorts and Cain (1964) on the life course. Social structure is, of course, central to all sociological analysis. Riley's unique contribution involved the synthesis of the cohort and life course ideas with her thoughts on social structure to form her powerful and elegant paradigmatic framework. In so doing, she added new methodological as well as theoretical insights, especially concerning the dynamic intersections of individuals and structure throughout the life course (e.g., cohort flow and cohort succession, structural lag, age segregation/integration, etc.). She did this in a way that not only made these ideas accessible but also exposed several common problems, or fallacies, made in interpreting survey data which show differences across age categories. "The (age) strata differences," Riley emphasized, "reflect a combination of life-course differences and cohort differences" (1973, p. 38), and these exist in a particular social context. She notes that others (Blalock, 1966) had recognized the "problem of identification," the impossibility of disentangling the effects of age, period, and cohort because each factor is defined empirically in terms of the other two (Riley, 1973; see also Cohn, 1972). What she added was a clear exposition of the generational fallacy and the life course fallacy, either of which can result from an incomplete conceptualization of the dynamics of age and aging.

The Generational Fallacy

Especially in the wake of the celebrated age-stratified cleavages of the antiwar protests and other social movements of the 1960s, the Mannheimian idea of generational differences in values and perceptions enjoyed renewed interest. Ryder (1965) gave this notion a new level of conceptual and methodological rigor in his classic article on cohort analysis, which emphasized the significance of cohorts as a force for social change. These perspectives provided an appealing explanation for divergent political and moral ideas and aspirations of baby boomers from their parents and grandparents. The post-World War II conditions within which the baby boomer cohorts matured marked this generation in distinct ways that resulted in their challenging the status quo. The well-publicized slogan, “Don’t trust anyone over thirty” came to epitomize the skepticism of youth toward “mature” adults. The power of distinctive cohort experiences as both a force for change and an explanation for cross-sectional age differences, as illustrated by baby boomers in the 1960s, was fully appreciated by Riley. Yet, she cautioned, to postulate that differences in cohort histories are the sole explanation of age differences observed at a given period is to risk making what she called the “generational fallacy”: attributing to the large-scale social dynamics of the past and present what may be developmental patterns of individual change over the life course (Riley, 1973, p. 38; Riley et al., 1972).

As pointed out in the original Riley–Johnson–Foner formulation, the theoretical and analytical significance of cohort analysis is not limited to the distinct imprint of a historical period. It also involves other cohort characteristics, most notably size and composition (Riley et al., 1972). Building directly on these principles, Joan Waring, then Riley’s doctoral student, developed an argument that sought to explain the cohort-specific features such as the rebellion of the late 1960s youth in terms of “disordered cohort flow” (1976) resulting from the size of the baby boom cohorts relative to those coming before and after. Waring hypothesized that an experience of scarcity and competitiveness for needs ranging from parental attention to teacher resources may have contributed to the behavior of these cohorts. This general idea was also advanced in Easterlin’s (1987) provocative analyses of cohort size. Thus, Riley’s framework encompassed multiple potential forms of the generational fallacy.

The Life Course Fallacy

The inverse of the generational fallacy is the life course fallacy, which assumes that observed cross-sectional age differences reflect developmental age changes to the neglect of cohort-based and social structural processes. Compared with the generational fallacy, the life course fallacy remains a much more pervasive and frequent risk for gerontologists and others interested in studying aging. From the beginning of studies of age, the assumption that cross-sectional age differences depict developmental and biographical patterns of life-course aging was standard fare for the social and behavioral sciences. A critique of this practice was the focus of Schaie’s (1965) seminal article on cohort effects.

Riley displayed how confused such an assumption can be by showing the illogical results it leads to with a characteristic such

as years of education. Indeed, when arrayed for a cross-section of the population, years of educational attainment appear to decline as people grow older, similar to cross-sectional patterns of declining IQ with age. The fact that years of education is an irreversible attribute of individuals reveals immediately the untenable assumptions underlying the life course interpretation of cross-sectional data. Traced in individual lives, some key dimensions of intelligence do not show the same pattern of long-term, linear decline with age that was often suggested by cross-sectional data (e.g., Schaie, 1994). Using what she called the “age stratification paradigm,” Riley argued that correct interpretation of age differences requires viewing longitudinal cohort trajectories within the context of constantly changing social structure and context.

The recognition that cohorts may differ from each other in their life course trajectories in many ways, ranging from psychometrics to lifestyle, had implications for the kinds of data required to study aging. Riley contributed significantly to a broadening of awareness of the dangers of research fallacies and of the need for longitudinal research. As this perspective was recognized, researchers and funders increasingly focused on the need to collect longitudinal data, and an explosion of efforts to produce quality longitudinal data sets occurred. Although the assembly of longitudinal data requires time, the fruits of these long-term efforts are now readily visible both in the development of data archives such as Panel Study of Income Dynamics, National Longitudinal Survey, Health and Retirement Survey, Longitudinal Study of Aging, and National Survey of Families and Households and in the establishment of fruitful research programs in demography, sociology, and epidemiology. Riley was one of those who contributed to these efforts through her relentless and articulate support of longitudinal research during her tenure at the National Institute on Aging (NIA). From the beginning of her work at NIA, she emphasized and gave priority to the need to build archives of longitudinal data as well as cross-sectional studies, and she arranged for the NIA to participate in the establishment of data archives and the development of new data sets to advance the understanding of age and aging.

AGE AS A FORCE FOR SOCIAL CHANGE: STRUCTURAL LAG

Building on the person–role distinction, Riley introduced the concept of *structural lag* in the 1980s to describe potential strains and contradictions arising from a lack of fit between roles and individuals of a given age that can result from social or demographic change. The argument she developed, its implications and the reach of her ideas are most fully presented in *Age and Structural Lag: Society’s Failure to Provide Meaningful Opportunities in Work, Family, and Leisure* (Riley, Kahn, & Foner, 1994).

The concept of structural lag uses the person–role distinction to draw attention to ways in which rigidly defined, age-graded roles constitute a prescription for both individual and social strains and problems. Strains can develop because of the potential for a mismatch between the numbers and kinds of people of a given age in a society, on the one hand, and places in the social structure available to them, on the other. When people’s lives and social structures fail to change in congruent ways, a situation of structural lag is likely to result. In analyzing structural lag, Riley extended her earlier analyses to add new

understandings of age as a social phenomenon and age-related processes as forces for social change.

Theoretical Framework

Underlying Riley's conception of structural lag is the distinction between age as a property of individuals and age as a property of social systems, reviewed earlier. According to Riley, transformations in the aging process and changes in role structures are distinct and separate processes. But they are interdependent. Aging patterns in people's lives are affected by changes in social structures; and as people play out their roles in these structures, they also bring about pressure for structural changes. As many companies restructured, merged, or downsized in the latter part of the 20th century, for example, people's work lives were changed because long-standing practices of lifetime employment in one firm became less common. These changes in work lives, in turn, put pressure on educational institutions to institute programs for training and retraining midlife adults who were looking to upgrade skills or seeking new careers.

Although changes in patterns of aging and changes in social structures can affect each other in such ways, each process follows its own dynamics. Consider the aging process: Although successive cohorts do not grow up and grow older in the same way, nevertheless, all cohorts do proceed through childhood, adulthood, and old age. There is no similar rhythm to social structural changes. There are typically unpredictable ups and downs in the economy and in political conditions, to say nothing of the impact of wars, depressions, and "natural" disasters on social institutions. Rapid changes in either the aging process or the existing social structures are likely to produce a poor fit between lives and structures. The qualifications, expectations, motivations, or needs of individuals at a given stage of life at a particular time may not be compatible with the available places in the social structures. Typically, this imbalance takes the form of social structures lagging behind changes in people's lives, as it did in the late 20th century. (See below for a brief discussion of lags in the other direction.)

The most dramatic instance of structural lag that drew Riley's attention was the failure of social structures to accommodate the increase in the number and kinds of older people in the population. There has been a revolution in older people's lives as members of cohorts entering old age now are living longer and remaining healthier than members of preceding cohorts. But major social organizations have not adjusted to make places for these new types of older people. For example, few employing organizations offer the flexible working conditions that would encourage older workers to be productive members of the labor force. Nor have social institutions accommodated the needs of another segment of the older population, the long-lived old who are in poor health and need support but cannot find affordable arrangements for long-term care.

Not only have the lives of older people changed markedly, but also the lives of younger adults and children have changed in dramatic ways. In the case of children, for example, there has been a large increase in the proportion living in single-parent families or in families where both parents work outside the home. As a result, patterns of child rearing and socialization have changed, with much care taking place outside the home by relatives and strangers in child care institutions. These changes create a structural lag because such arrangements are often not

adequate, and alternative social structures have not emerged to provide satisfactory nonparental child care arrangements, especially to those with low incomes.

At any particular time, a gap may exist between people's lives and social structures, but the tensions, inefficiencies, or dissatisfactions that typically result from this gap also create pressures for further changes in both people and structures. Such changes do not come about spontaneously; people acting individually, collectively, or through existing institutions are the agents of change. Riley's focus in this regard was primarily on people's changing attitudes and behaviors that gave rise to new norms and altered institutions.

An example she cited was the increase in married women's labor force participation (Riley, 1994). Since early in the 20th century, an increasing proportion of adult women have worked outside the home. Although they were responding to social forces that made working outside the home feasible, the decisions to do so were made by individual women on their own. As increasing proportion of married women in successive cohorts entered the labor force, it first became increasingly acceptable for them to do so, and then it became expected of them.

Riley also noted that more formal mechanisms of change can also operate to reduce the gap between lives and structures (Riley & Riley, 1994, pp. 24–25). Policy makers in government and the private sector, for example, often are aware of problems created by structural lag and use their positions to initiate changes in communities and organizations. The new educational opportunities opened up for older people by educational institutions are an example. This actually appears to be an instance of two processes at work: pressures from a growing number of older people seeking access to schools and colleges and educational administrators taking the initiative to broaden their pool of potential students.

Riley recognized that the possibility of change does not mean that significant obstacles to change do not persist or that no new problems may grow out of changes (e.g., Riley & Riley, 1994, p. 27). For example, should the number of jobs in a society remain stable, policies serving to increase the labor force participation of older workers could be perceived as threatening the interests of middle-aged or younger workers and lead to intergenerational conflict. Or, if remaining in the labor force later in life becomes the norm, then the right to retirement could be questioned, with negative consequences for those who are unable to work or who are looking forward to retirement after years at toilsome jobs.

Some Further Implications

Riley touched on but did not fully spell out other implications of the theory of structural lag. For one thing, she noted that while structural lag was the primary outcome of asynchrony between changing lives and structures in modern society, under some conditions, it could be people's lives that lagged behind structural changes. Unemployed workers might not be able to cope with the technologically advanced jobs that were available, or older people might avoid seeking medical help because of their fear of the bureaucratized health care system. Building on Riley's framework, Lawton used the term "individual lag" to denote such cases (1998, pp. 13–17).

Still another idea that can be extrapolated from Riley's conceptual scheme is the likelihood that structural lags will give

rise to conflicts within age strata as individuals of various backgrounds seek different solutions to structural lag. And, as noted above, structural lags also could trigger conflicts across age strata. In recent years, a good deal of attention has been given to the possible emergence of conflict between young and old over public policies supporting the old. In this case, the gap between structures and people is created by the rapid increase in the number of people occupying structures that were designed under very different demographic conditions.

Relation to Other Theories of Change

Riley's work inspired others to explore these and other aspects of structural lags in society. In addition to laying out her own framework, *Age and Structural Lag* also brought together analyses of a group of scholars from several disciplines (anthropology, economics, history, social psychology, sociology) around the issue of structural lag. Pursuing and amplifying further the broad implications of structural lags in society will provide a full agenda for current and future students of age and aging.

Riley's distinct contribution in her analysis of structural lag and its consequences can be highlighted by comparing her approach with other seemingly similar conceptual schemes. She, herself, noted the apparent similarity between the term "structural lag" and the term "cultural lag," coined by William Ogburn (1950). She pointed out, however, that whereas in Ogburn's scheme, the focus was on the different timing of changes of interdependent cultural elements, her emphasis is on the interdependence between *people* and *structures*, including their cultural elements. And when there is a mismatch between these two elements, people play a role in bringing about further changes.

Other theorists have also put forward ideas that seem parallel to the concept of mismatch—contradictions, disjunctions, antitheses—that is, inconsistencies in social structures that create pressures for change. But there are important conceptual differences between these other approaches and that set forward by Riley. A major emphasis in Marx's work was on contradictions within the system of production and class conflict as the motive power of change. Merton (1957) too focused on a particular mechanism for bringing about social change when there was a disjunction between socially defined goals and socially approved means for achieving these goals. He proposed that segments of the population rejecting both socially accepted goals and means could rebel and seek to replace them with greatly modified social structures.

In contrast to Marx's (Marx & Engels, 1848) emphasis on the inherent contradictions of class-related property relations within the productive sphere, Riley stressed that structural lag can arise in all domains of society (e.g., in educational and leisure institutions as well as economic structures). Consistent with the lack of attention to power dynamics noted above, Riley saw structural lag in the economy as a general phenomenon, regardless of property or class relations. Riley also differed with respect to the question of how change occurs. Whereas Marx, with his stress on class conflict, and Merton, with his analysis of rebellion, emphasized collective challenges to existing systems as a major mechanism of change, Riley—in line with her Parsonian heritage—stressed institutional actions and at the informal level, individuals acting independently, albeit in a similar way, as the paths to change.

At the same time, Riley's positing of an age-integrated society as one solution to the problem of structural lag has a familiar ring. Her concept of a society where age barriers are removed and role opportunities at work, in education, and leisure are open to people at all ages is not too unlike calls for breaking down race and gender barriers and even to images of a classless society. Whatever the realities of changing age structures in the coming years, Riley's signal contribution was to put these changing age structures and changing aging processes on the map as important and continual forces for social change.

AN ALTERNATIVE SOCIAL AND HUMAN VISION: AGE INTEGRATION AND THE POSSIBILITIES OF CHANGE

Riley's interest in age integration followed, both temporally and logically, her work in age and society and structural lag. Age integration was the central issue she focused on in the last years of her career. The first article explicitly focusing on this issue, co-authored with John Riley, was published in *The Gerontologist* in 1994, and her last article, also co-authored with John Riley and in *The Gerontologist*, appeared in 2000 with the title "Age Integration: Historical and Conceptual Background." Significantly, the issue of *The Gerontologist* in which her last article appeared also included 11 other articles dealing with age integration, all stimulated by Riley's writing. Riley's motivation for concentrating on age integration at the end of her career derived from her strong desire to expose social forces that create or restrict opportunities for human beings of all ages to live full and meaningful lives. Her method for studying the topic continued her lifelong approach of rigorously applying social theory to social phenomena.

Riley did not conceal her personal interest in age integration. However, it was a personal interest developed in conjunction with, and thoroughly integrated with, theoretical principles and sociological insight. Riley recognized that when it serves a basis for role encapsulation or social exclusion, age operates as a basis of discrimination, oppression, and human destructiveness. Although the "consensus theory" impulses of Parsonian theory had suffused her earlier work, her writing on age integration built on the more explicit social critique that had begun with structural lag. Her concerns, both theoretical and existential, were evident when she asked: "To what extent might flexible age criteria provide more equitable opportunities to people of all backgrounds and creeds? Might cross-age interaction lead to group solidarity and a sense of community across all age strata, thus reducing the threats of misunderstanding, tension, and intergenerational conflict?" (Riley & Riley, 2000, p. 269). Yet even in these questions, as in her focus on integration rather than segregation, Riley's underlying Parsonian optimism is evident. And, indeed, Riley pointed to signs of increasing age integration in recent decades and was optimistic that age integration would continue to increase. However, she also wanted to hasten this trend along by calling attention to the harm done to individuals and the society by perpetuating age-segregated structures.

Structural Age Barriers

In her writing on age integration, Riley primarily focused on use of age as an eligibility criterion for participation in social activities. The most salient examples of age being used to determine when people should enter or leave social structures

are seen in education, work, and retirement. At a certain age, children are expected to enter a graded school system, and then, if “normal,” to move lock-step with age peers through the system. Young adults are expected to finish school and move into work settings that exclude both the young and the old. Finally, as old age approaches and opportunities for participating in school and work sites are limited, adults are expected to move into the last phase of life: retirement.

Socially created separations between age groups are exacerbated by rules and practices in institutions other than work, education, and retirement. Age criteria are used to control access to health care institutions and welfare programs. Religious congregations frequently structure activities on the basis of age, sending children, youth, young adults, etc., into separate programs. Retirement communities and college dormitories promote residential segregation by age.

After exploring the social creation of age segregation, Riley goes on to examine the costs and benefits of moving toward greater age integration (Riley, 2000). On the positive side, she reflects on the benefit for both youth and old people of relaxing rigid age boundaries so that throughout the life course, individuals can move between education, work, and leisure. Among other benefits, this speaks to the concern that the growing size of an older dependent population will create intolerable burdens on younger adults. Also, as will be discussed below, age integration of social institutions opens up opportunities for reciprocal socialization of old and young. Despite her preference for greater age integration and the clear advantages associated with this, Riley also encouraged attention to potential negative consequences. In particular, she raises questions about differential access to benefits of age integration among older people and sees the potential for it to lead to increasing inequality between privileged older people and those who suffer disadvantage because of race, education, or disability.

Social Interaction

At the individual level, age segregation occurs when there is an absence of social interaction between people of diverse ages. The very limited cross-age interaction occurring in modern society is indicated in the high degree of age segregation found in nonkin personal social networks (Uhlenberg & Gierveld, 2004). The linkage between age segregation of social institutions and the age segregation of personal social networks is straightforward. Institutional age segregation restricts the age range in the pool of persons from whom network members can be recruited. Similarly, lack of cross-age personal interactions perpetuates age stereotypes that are used to justify institutional age segregation (Hagestad & Uhlenberg, 2005).

Riley mentions several potentially important opportunities associated with increasing cross-age interaction (Riley & Riley, 2000). First, through social interaction, older and younger people can provide mutually beneficial socialization. As Margaret Mead argued (1970), in a rapidly changing society where youth have a greater mastery of new technology, the old must learn from younger people to avoid becoming marginalized. It is also the case, however, that youth still need to learn from the experience of older people. Second, through interaction, older and younger people can develop empathy for the challenges faced by those in different life course positions. This understanding offers an opportunity for reducing ageism and for

breaking the ageism/age segregation cycle (Hagestad & Uhlenberg, 2005; in press). Third, Riley discussed potential opportunities for mentorship provided by increasing age integration at work sites. Recent work has further developed the link between age integration and opportunities for older people to practice generativity (Hagestad & Uhlenberg, in press).

The Mutability of Human Aging and Social Possibility

Matilda White Riley saw signs of increasing age integration, and she was optimistic that this trend would continue. The basis for optimism begins with her conviction, based on solid empirical evidence and sound theoretical arguments, that human aging is alterable. The age-segregated life course that emerged in recent history was produced by social institutions that were constructed in particular ways. This means that age segregation could be reversed by changing these institutions. In fact, she argued, the growing mismatch between an older population that is increasingly healthy, well educated, and capable of being productive and those social structures that restrict the motivation and opportunities for older people to be productive is creating tensions that will require structural changes. Examples of recent changes encouraging greater age integration can be found in education, where life-long education is receiving increased attention, and in work, where there are increases in job flexibility and increased incentives to work later in life. There is no reason to doubt that the aging experience of cohorts entering old age in coming decades will differ from that of the cohorts who preceded them. Whether or not this will bring about increasing age integration is an open question. But Riley has contributed to our understanding of the issue both through her provocative writing and through her ability to stimulate continuing research and policy debate on the topic of age integration.

RILEY'S BROADER LEGACY

From the beginning of her work in the field of aging, Riley drew on and collaborated with scholars in other disciplines. As the list of consultants and advisors to the three volume *Aging and Society* (1968, 1969, 1972) attests, from the beginning of her study of aging, Riley reached out to scholars in medicine, law, epidemiology, economics, psychology, and demography as well as sociology. Later on, she encouraged scholars from many disciplines—history, anthropology, economics, social psychology—to bring their expertise to bear on age-related issues in publications and seminars. In such ways, she helped put the study of aging and society on an interdisciplinary map. At the same time, the conceptual framework of her *Aging and Society* paradigm provided a basis for conducting interdisciplinary collaboration and attempting conceptual integration that spanned disciplines.

Her influence beyond sociology took on added dimensions when she took on the task of organizing an extramural (grant funding) program for behavioral and social research at the NIA in 1979. Under Riley's leadership, a multidisciplinary vision for research on aging that integrated the aging of individuals into social structures was developed and implemented. The resulting research program emphasized the influence of social structures on the lives of individuals and the lives of individuals on social structures. This vision extended to the biological sciences, for

Riley recognized the need for a biopsychosocial understanding. The publication of this blueprint as a National Institutes of Health (NIH) program announcement set the course of NIA's program and influences its direction even to this day. With the publication of a second paradigmatic program announcement, *Health and Effective Functioning in the Middle and Later Years*, Riley expanded the NIH's disease- and organ-system-oriented world view by introducing the concept of effective functioning as an equally important concern. By this she meant that research and policy should also address social and psychological functioning such as the performance of social roles and maintenance or even improvement of cognitive skills. She argued that a major goal should be extending the healthy and productive middle years of life as far as possible into the later years of life.

Riley used research on interventions to improve cognitive performance in older people (e.g., Baltes & Willis, 1982) to support the development of these programmatic themes. She interpreted these studies as demonstrating that the provision of the proper social circumstances (e.g., feedback and positive reinforcement for performance, supportive and encouraging social environment) could alter the trajectory of age-related human performance. In turn, she encouraged cognitive researchers to recognize the social context (e.g., Baltes and Willis, 1979) in which their research was conducted and to investigate cohort differences in cognitive aging (e.g., Willis, 1989). Her call for understanding the relationship between social structures and psychological functioning stimulated Warner Schaie to organize the long-running conference series on Social Structure and Aging at the Pennsylvania State University.

In 1979, the U.S. Surgeon General's report, *Healthy Lifestyles* (1979), directed the national spotlight at the relationship between health and behavior by documenting the extent to which lifestyles contributed to the burden of chronic illness in the United States and other industrialized countries. Riley interpreted these findings as further evidence for social and behavioral influences upon aging, as the cumulating consequences of life-long patterns of socially determined and patterned lifestyles impact heavily upon older people. In establishing the social and behavioral research program at NIA, she emphasized the support of research on health and behavior over the life course.

Riley co-chaired the NIH Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) Oversight Committee for the Institute of Medicine Study on Health and Behaviors, whose 1982 report, *Health and Behavior: Frontiers of Research in the Biobehavioral Sciences*, became a landmark document. It provided the NIH with a blueprint for setting priorities, which helped to legitimize nascent behavioral and social research programs at the NIH. Riley used the recommendations to establish a "behavioral geriatrics" initiative within the Behavioral and Social Research Program at the NIA.

The Behavioral Geriatrics Section became a major funder of research within the NIA's Behavioral and Social Research Program. Research funded by NIA demonstrated that lifestyle behaviors as "risk factors" are predictive of health outcomes even in advanced old age, that reductions in these risk factors have health benefits among older people, and that interventions can be designed to change lifestyle behaviors in older people.

Subsequently, NIA-supported research demonstrated the continuing contributions of lifestyles in old age and, more significantly, the value of changing health-damaging lifestyles even in old age. Riley was also a powerful advocate for social and behavioral research at NIH beyond the NIA, where she chaired a trans-NIH committee on research and policy for health and behavior as well as served as the NIH's senior spokesperson for behavioral and social research.

CONCLUSION

The sweep of influence described in this article makes clear that Matilda White Riley's impact on the study of age and aging cannot be reduced to a single concept or principle. It cannot be reduced to a single substantive area or discipline. Theory and method, structure and change, the reality of the present, and the possibility of the future—Riley's *Aging and Society* perspective has made distinct contributions to analyzing and understanding each of these. Her original "age stratification" paradigm brought together in one systemic framework the nascent concepts of cohort and life course, integrating them in a coherent overarching framework that provided a solid and parsimonious framework both for articulating the relation of aging and society and for evaluating aging research.

As noted above, Riley's functionalist orientation meant that certain crucially important themes were not developed in her work. These include the lack of attention to power, conflict, and other bases of stratification and hence to the role of both social movements and the societal regulation of individual action and "voluntarism." However, Riley also transcended her functionalist orientation in important ways. Her devotion to the "integration of theory and method" led her to formulate a quite radical critique of society with respect to age. The clarity of her critique provided a foundation for others who went on to offer even broader critiques. It also led to a set of enduring principles for evaluating studies and research designs and a theoretical basis for "revising" society. The connections and relations articulated in her paradigm span past and present, link individual and social, and have prompted comparative analyses—thus inviting interdisciplinary collaboration and interchange (e.g., with history, psychology, anthropology).

There can be no question that the field of gerontology, the interdisciplinary relationships that enrich it, and the recognition that age and aging cannot be understood without attention to the social dynamics that help shape them, have been substantially and importantly advanced by the work of Matilda White Riley. All of these are the product of her formidable intellect, her organizational shrewdness and determination, and her unflagging dedication. Her contributions provide a solid foundation from which we can see farther—as it is possible to do when we stand on the shoulders of a giant.

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