



The Increasing Use of Theory in Social Gerontology: 1990–2004

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Objectives. To determine how often theory is used in published research in social gerontology, compare theory use over a 10-year period (1990–1994 to 2000–2004), and identify the theories most frequently used in social gerontology research.

Methods. Systematic review of articles published in eight leading journals from 2000 to 2004 ($N = 1,046$) and comparison with a review conducted 10 years earlier.

Results. Theory was mentioned in 39% of articles published from 2000 to 2004, representing a 12% increase in the use of theory over 10 years. This increase was driven by theories outside the core sociology of aging theories identified by Bengtson, V. L., Burgess, E. O., and Parrott, T. M. (1997). Theory, explanation, and a third generation of theoretical development in social gerontology. *Journal of Gerontology: Social Sciences*, 52B, S72–S88. The five most frequently used theories included the life course perspective, life-span developmental theories, role theory, exchange theory, and person–environment theory/ecological theories of aging. Commonly used models included stress process/stress and coping models, successful aging models, the Andersen behavioral model of health services use, models of control/self-efficacy/mastery, and disablement process models.

Discussion. Theory use in social gerontology increased between 1990 and 2004, with a shift toward theories that cross disciplines. However, the majority of research in social gerontology continues to be atheoretical. Models are widely used as a supplement to or substitute for theory. Many of these models are currently being debated and elaborated, and over time, they may emerge as important theoretical contributions to social gerontology.

Key Words: Models—Science of gerontology—Theories of aging.

ALTHOUGH gerontological research has long been characterized as data rich but theory poor (Birren, 1999), theorizing in social gerontology seems to have made significant progress in the last decade. As noted in the recently published second edition of the *Handbook of Theories of Aging*, “theory appears to be growing in importance in gerontology today” (Bengtson, Gans, Putney, & Silverstein, 2009a, xxi). The new *Handbook* features a section on “theorizing aging across disciplines” and an emphasis on integrating theoretical perspectives within and across disciplines. However, it is unknown whether this intellectual growth is reflected in empirical work. In this article, we build on an analysis of theory in social gerontology conducted more than a decade ago (Bengtson, Burgess, & Parrott, 1997) to determine how often theory is used in published research in social gerontology, compare theory use over a 10-year period (1990–1994 to 2000–2004), and identify the theories most frequently used in social gerontology research.

Many theories in social gerontology first appeared in the pages of the *Journal of Gerontology*. Formative theories of aging, including activity theory and exchange theory, were developed (Dowd, 1975; Lemon, Bengtson, & Peterson, 1972) and debated here (Hoyt, Kaiser, Peters, & Babchuk, 1980; Longino & Kart, 1982). As theory development in the

field has continued, this evolution has been reflected in the journal, with articles in the last decade on newer theoretical frameworks, such as cumulative advantage/disadvantage (Dannefer, 2003). Thus, it seems fitting that we step back now, in the year of the journal’s 65th anniversary, to consider the field’s theoretical progress. This article is not intended to serve as a comprehensive review of theory in social gerontology (for a review, see Putney & Bengtson, 2008). Rather, our goal is to examine the extent to which theories are used in journal articles in the field and how such usage changed over a 10-year period.

Why theory?

At its simplest, theory is an attempt to explain why phenomena occur. More precisely, theorizing involves “the construction of explicit explanations in accounting for empirical findings” (Bengtson et al., 1997). Theories of aging help to systematize what is known and explain the *how* and the *why* behind the *what* of our data (Putney & Bengtson, 2008).

Theory serves at least three critical purposes in research on aging: to guide research questions and hypotheses, to help explain research findings, and to inform interventions to solve aging-related problems. Even if they are not made

explicit, theoretical orientations and assumptions influence the research questions we select and the methods we use to address them. Science proceeds through hypothesis development about relationships among constructs or variables based on previous research and theories. Qualitative work may not be hypothesis driven but may still utilize theory in selecting research questions and inductively interpreting results.

As Ferraro (2009) notes, hypotheses are typically based on either previous research or theories. Both of these are important means for moving science forward, but an overreliance on prior research without a consideration of theory may lead to “a science of the commonplace” in which research progresses through “tiny extensions of a basic research question” (Ferraro, 2009, p. 75). Although incremental science is important, theory-driven work has the potential to enhance scientific innovation while incorporating theoretical generalization. Without theory, researchers lack a foundation from which to develop and test hypotheses, interpret findings, or generate further questions to advance knowledge.

In addition to its role in research, theory has an important role in practice. A central aim of social gerontology since its inception has been to improve the lives of older persons (Achenbaum, 1995; Putney, Alley, & Bengtson, 2005). In a recent review, Hendricks, Applebaum, and Kunkel (2010) describe the importance of integrating theory into applied social gerontology, noting that without carefully conceptualized measures and a theory about how and why programs are expected work, it is impossible to assess program impacts on the lives of older persons.

Evaluating theory use in social gerontology

On the pages of this journal, Bengtson and colleagues (1997) assessed the use of theory in social gerontology by examining research articles published from 1990 to 1994. (Hereafter, we will refer to this analysis as “the 1997 analysis.”) They found relatively little use of theory in published research. Less than one in three articles published in eight major journals contained any mention of theory to explain empirical findings. The vast majority (72%) made no mention of any theory.

In this article, we examine the use of theory in social gerontology 10 years later. Although the 1997 analysis focused more narrowly on three “generations” of theories rooted in the sociology of aging, it provides a useful foundation for a consideration of how often theories are used in social gerontology. Here, we build on this approach to address three questions: How often is theory used in published research? What trends do we see in theory use since the early 1990s? and What kinds of theories are used most frequently in social gerontology research?

METHODS

We replicated the 1997 analysis in reviewing articles published from 2000 to 2004. Articles from eight leading

journals in social gerontology and sociology were examined: *Journal of Gerontology: Social Sciences*; *The Gerontologist*; *Research on Aging*; *Journal of Aging Studies*; *International Journal of Aging & Human Development*; *Ageing and Society*; *American Sociological Review*; and *American Journal of Sociology*. The last two, though not aging-related journals, were included in the 1997 analysis because of the influence of articles published in them on the sociology of aging. All empirical studies in these journals using quantitative or qualitative methods were included, whereas book reviews, editorials, and letters to the editor were excluded, as well as “Practice Concepts” from *The Gerontologist*. Because our focus was on the use of theory in empirical research, we did not include theoretical reviews in our analysis. In journals not explicitly focused on aging (*American Sociological Review* and *American Journal of Sociology*), an article was included if it met any of the following criteria: cited in Ageline; title containing the words age, aged, aging, or life course; and age or aging was the primary variables of interest. Using these criteria, we identified a total of 1,046 articles published between 2000 and 2004 for inclusion in this analysis.

Our coding strategy was designed to be as inclusive as possible. Any mention in the article text of the word “theory” or a related word (e.g., theoretical) was noted, and the theory or theories referenced were recorded. There were two exceptions: (a) Any mention of “life course” as a perspective or framework was included, regardless of whether it was explicitly referred to as a theory and (b) grounded theory was not included because it reflects analysis-specific interpretive approach rather than a theory as defined here.

Coding proceeded in two stages. The first stage was designed to determine how often theory was used in published research from 2000 to 2004 and how theory use during this period compares with that in the early 1990s. Articles were coded based on their use of theory, following the same procedures as the 1997 study. Articles were first classified based on whether they mentioned one of the 13 core theoretical perspectives, which the original study described as “theoretical traditions emerging within the sociology of aging” (Bengtson et al., 1997, p. S74). These were named as follows (listed in order of how frequently they appeared in publications between 1990 and 1994): social constructionist perspectives, the life course perspective, exchange theory, feminist theories, modernization theory, political economy of aging, critical theory, the age stratification perspective, activity theory, continuity theory, disengagement theory, social breakdown/labeling theory, and the subculture theory of aging. We refer to these as “core sociology of aging theories.” Next, articles that did not contain any of these theories were coded based on whether they used other social or behavioral science theories (e.g., life-span development theory, identity theory). Articles that contained no reference to either core theories from the sociology of aging or other social or behavioral science theories were classified as having

Table 1. Theory Use in Articles Published in Major Journals of Aging or Sociology in the Years 1990–1994 and 2000–2004

Journal name	1990–1994				2000–2004				Change in % of articles using any explicit theory, %
	N	Core sociology of aging theories (%)	Other theories (%)	No explicit theory (%)	N	Core sociology of aging theories (%)	Other theories (%)	No explicit theory (%)	
<i>Journal of Gerontology: Social Sciences</i>	177	22 (12)	13 (7)	142 (80)	184	36 (20)	50 (27)	98 (53)	+27
<i>The Gerontologist</i>	109	18 (17)	7 (6)	84 (77)	307	13 (4)	50 (16)	244 (79)	-2
<i>Research on Aging</i>	106	11 (10)	8 (7)	87 (82)	134	28 (21)	29 (22)	77 (57)	+25
<i>Journal of Aging Studies</i>	106	35 (33)	6 (6)	65 (61)	111	41 (37)	26 (23)	44 (40)	+21
<i>International Journal of Aging & Human Development</i>	92	22 (24)	19 (21)	51 (55)	166	18 (11)	63 (38)	85 (51)	+4
<i>Ageing and Society</i>	88	14 (16)	8 (9)	66 (75)	137	22 (16)	26 (19)	89 (65)	+10
<i>American Sociological Review</i>	5	1 (20)	3 (60)	1 (20)	4	3 (75)	1 (25)	0 (0)	+20
<i>American Journal of Sociology</i>	5	4 (80)	1 (20)	0 (0)	3	0 (0)	3 (100)	0 (0)	+0
Total	688	127 (18)	65 (9)	496 (72)	1,046	161 (15)	248 (24)	637 (61)	+12

Notes: The *American Sociological Review* and *American Journal of Sociology* were reviewed for articles pertaining to aging only. Source numbers from Bengtson and colleagues (1997) were updated to correct inconsistencies in table. Percentages may not add to 100 due to rounding.

no theory. In this way, we classified articles into three mutually exclusive categories: (a) those that used core sociology of aging theories, (b) those that used other social or behavioral science theories, and (c) and those that contained no explicit references to theory.

The second coding stage was intended to determine what kinds of theories are used most frequently in social gerontology research. In this stage, coding involved recording and tabulating all mentions of theory used in an article, regardless of theory type. In preliminary tests of the coding scheme, two issues emerged that led us to expand upon the 1997 analysis by documenting any models that were used to guide research questions and interpret findings, in addition to explicitly identified theories. First, it became apparent that by relying on the word “theory,” we would underestimate the use of specific explanatory frameworks commonly referred to as both theories and models. For instance, “stress theories” and the “stress process model” are often used to refer to the same set of explanatory frameworks. An overreliance on the word “theory” would underestimate the use of these frameworks. Although we view models as descriptions of empirical relationships between variables (Bengtson, Rice, & Johnson, 1999), in practice, the terms model and theory are sometimes used interchangeably. Second, we noticed that many constructs typically referred to as “models” were being used like theory—as a way to generate hypotheses and explain research findings. For instance, although successful aging is commonly thought of as a model, several articles invoked successful aging as the motivation for testing hypotheses about the association between activity and outcomes (Everard, Lach, Fisher, & Baum, 2000; Lennartsson & Silverstein, 2001). Given these preliminary findings, we felt we would not be conducting a full review of the use of theory in social gerontology if models were not included in our analysis. We therefore extended this second stage of coding by recording any models that were used to generate hypotheses and/or explain findings.

In order to present results with clarity and allow for historical comparison, the first coding stage, related to the frequency of theory use, required articles to have used the word “theory” (or related words, as described earlier). However, detailed tables presenting data on the frequency of use of different theories and models provide results based on the more inclusive second stage of coding (for the 2000–2004 period only because expanded coding was not available for the 1997 analysis). Explanatory frameworks that were referenced as both theories and models are presented in the results table that corresponds to the most frequently used characterization (i.e., theory or model). For example, cumulative advantage/disadvantage was referenced nine times as a theory and three times as a model, so the total (12) is listed under theories (Table 2). Stress process models were referenced as theories 16 times and models 43 times, so the total (59) is listed under models (Table 3).

RESULTS

Table 1 displays general trends in the use of theory in aging research published in leading journals in social gerontology and sociology. We found that 39% of articles published from 2000 to 2004 referenced at least one theory. Of articles that mentioned theory, the majority (61%) referenced social or behavioral science theories outside the core sociology of aging theories.

A comparison of these results with that from 10 years earlier shows that theory use has increased markedly. In 1990–1994, only 27% of articles used any theory compared with 39% in 2000–2004. This increase in theory use appeared entirely due to an increase in the use of social or behavioral science theories outside of the core sociology of aging theories. Although the proportion of articles using one or more of the core 13 theories described in the 1997 analysis remained relatively steady (18% of articles from 1990 to 1994 vs 15% of articles from 2000 to 2004), the

Table 2. Most Frequently Mentioned Theories in Articles Published in Eight Major Journals of Aging or Sociology: 2000–2004

Name of theory	References
Life course perspective	83
Life-span developmental theories	49
Role theory	34
Exchange theory	24
Person–environment theory/ecological theories of aging	22
Socioemotional selectivity theory	19
Activity theory	16
Disengagement theory	16
Feminist theories	16
Continuity theory	15
Symbolic interactionism	15
Identity theory	13
Social constructionist perspectives	13
Cumulative advantage/disadvantage	12
Gerotranscendence theory	8
Modernization theory	8
Rational choice theory	8
Intergenerational solidarity framework	7
Phenomenology	7
Social cognitive theory	7
Attachment theory	6
Critical theory	6
Human capital	6
Political economy of aging	6
Postmodern perspectives	6
Age stratification perspective	5
Equity theory	5
Life cycle theory	5
Organizational theory	5

Notes: Journals include *Journal of Gerontology: Social Sciences*, *The Gerontologist*, *Research on Aging*, *Journal of Aging Studies*, *International Journal of Aging & Human Development*, *Ageing and Society*, *American Sociology Review*, and *American Journal of Sociology*. Table excludes theories mentioned fewer than five times.

number of articles using other social or behavioral science theories almost tripled (9% from 1990 to 1994 vs 24% from 2000 to 2004). The largest increases in articles using theory were observed in the *Journal of Gerontology: Social Sciences* (27% increase), *Research on Aging* (25% increase).

Theories mentioned five or more times across all articles reviewed for the 2000–2004 period are presented in Table 2. The life course perspective was mentioned 83 times and was the most commonly referenced theoretical framework in social gerontology. Many of the core sociology of aging theories identified in the 1997 analysis continue to be widely used (life course perspective, exchange theory, activity theory, disengagement theory, feminist theories, continuity theory, and social constructionist perspectives). However, the most commonly referenced theories also reflect the multidisciplinary nature of social gerontology, including perspectives from psychology (life-span developmental theories and identity theory), sociology (role theory and cumulative advantage/disadvantage), and economics (rational choice theory). Many of these theories are not theories of aging per se, but rather, theories from other disciplines applied to the problems of social gerontology. However, other

Table 3. Most Frequently Mentioned Models in Articles Published in Eight Major Journals of Aging or Sociology: 2000–2004

Model name	References
Stress process/stress and coping	59
Successful aging models	20
Andersen behavioral model of health services use	18
Models of control/self-efficacy/mastery	16
Disablement process	12
Social support models	10
Hierarchical compensation	10
Task specificity	9
Models of migration	9
Selective optimization with compensation	8
Substitution hypothesis	6
Aging in place conceptual model	5
Double jeopardy hypothesis	5
Environmental docility hypothesis	5

Notes: Journals include *Journal of Gerontology: Social Sciences*, *The Gerontologist*, *Research on Aging*, *Journal of Aging Studies*, *International Journal of Aging & Human Development*, *Ageing and Society*, *American Sociology Review*, and *American Journal of Sociology*. Table excludes models mentioned fewer than five times.

commonly used theories represent major multidisciplinary contributions in social gerontology, including ecological theories of aging and socioemotional selectivity theory.

Models referenced five or more times across all articles reviewed are presented in Table 3. Models of the stress process and stress and coping were mentioned 59 times. Other commonly referenced models included models of successful aging, the Andersen behavioral model of health services use, models of control/self-efficacy/mastery, and the disablement process model. Three of the most frequently referenced models (hierarchical compensation, task specificity, and the substitution hypothesis) specifically address issues of caregiving and alternative sources of care in late life.

DISCUSSION

In this article, we assessed theory use in social gerontology as reflected by research published in eight journals between 2000 and 2004. Our objectives were to determine how often theories are used, how this has changed over a 10-year period, and which theories are used most frequently in social gerontology. There were six principal findings. First, 4 out of 10 (39%) reviewed articles employed theory in research design and/or interpretation of findings, whereas 6 out of 10 (61%) made no mention of theory at all. Second, of those using theory, 39% employed a theory that had been developed within the research tradition of the sociology of aging (what we call a “core” theory), whereas 61% used other broader theories from social and behavioral sciences.

Third, in comparing these results with data from 10 years earlier, we find that theory use in social gerontology has increased. Between the 1990 and 1994 and 2000 and 2004 periods, there was a 12% increase in the overall use of theory. Fourth, the frequency of use for core sociology of aging

theories has remained steady over this period. Thus, the increase in articles using theory is attributable to authors employing theories from related fields in social gerontology. Another factor related to the increase is the development of theories such as cumulative advantage/disadvantage that were not included as “core theories” in the 1990–1994 analysis. In a field known for its paucity of theory, these findings suggest significant theoretical progress.

Fifth, we find that the most frequently employed theories during this period were the life course perspective, life-span developmental theories, role theory, exchange theory, and ecological theories of aging. Finally, models were widely utilized to generate hypotheses and interpret findings, with many models (e.g., stress process models, successful aging models, the Andersen behavioral model of health services use) used as frequently as the most widely used theories.

Hendricks and colleagues (2010) recently examined articles published in a subset of the journals examined here (*Journal of Aging Studies*, *Journal of Gerontology: Social Sciences*, and *The Gerontologist*) from 2004 to 2008. In addition to differences in the time period observed, there are significant differences in method between our two studies. Most notably, Hendricks and colleagues classified articles into three categories (primarily theoretical, largely theoretical with empirical data, or empirical with little or no theory included) without regard to the type of theories used. Despite these differences, our empirical results regarding frequency of theory use are strikingly similar. Results from our broader empirical investigation support Hendricks and colleagues’ conclusion that the field has made great progress in incorporating theory into empirical research relative to the use of theory in the early 1990s. Our results extend these findings by including all eight journals from the original 1997 analysis, replicating the methods used in the original study to maximize comparability, and examining which theories are most commonly used, in addition to how often theories are used.

Implications

Results have important implications for the field of social gerontology and for future theory development. In particular, we believe our results suggest that theorizing in social gerontology is growing more multidisciplinary. At the same time, results demonstrating a reliance on models may suggest opportunities for further theoretical elaboration.

Two findings provide empirical support for recent claims of a growth in multi- and interdisciplinary theories of aging (Bass, 2009; Bengtson, Gans, Putney, & Silverstein, 2009b). First, the rise in the use of theory we observed was due to an increase in the utilization of social and behavioral science theories outside the core sociology of aging theories described in the 1997 analysis. Use of other behavioral and social science theories in published research increased from 9% of articles in 1990–1994 to 24% of articles in 2000–

2004. Second, the most commonly used theories from 2000 to 2004 reflect multi- and interdisciplinary perspectives in social gerontology. The life course perspective, which draws on concepts from sociology and psychology, continued to be one of the most important theoretical frameworks in social gerontology. Researchers frequently draw on theories from sociology, psychology, social psychology, and economics. The development of multi- and interdisciplinary theoretical frameworks not only better reflects the complex nature of the aging process but also represents major progress in gerontology’s advancement as a unique field of inquiry (Alkema & Alley, 2006).

In documenting the use of theory in social gerontology, we also observed the importance of models as explanatory frameworks. Models were widely used as a way to develop analytic frameworks that describe specific problems of interest to social gerontologists. However, there are important limitations to models as systems of explanation, and we believe that the commonly used models identified in this analysis represent opportunities for theory development.

Use of models was documented for two reasons. First, researchers frequently reference models as theories, and our coding scheme is only as good as the precision of language used by researchers. In many cases, the same explanatory framework was referred to as both a theory and a model, suggesting that the distinction between theories and models is often blurred in researchers’ nomenclature. Second, models were recorded when they were used in hypothesis development or interpretation of results. Whether or not these models constitute theories, they are clearly an important and frequently used tool in gerontological research.

Many of the most frequently used models represent content areas of central interest to applied social gerontologists, such as caregiving, health service use, healthy aging, and disability. These models are explicitly interdisciplinary, drawing on perspectives from sociology, psychology, epidemiology, and other fields to consider specific issues associated with aging. For instance, stress process models were the second most frequently referenced explanatory framework (only the life course perspective was cited more frequently). The majority of this research was in the area of caregiving and cited Pearlin’s stress process model (Pearlin, Lieberman, Menaghan, & Mullan, 1981; Pearlin, Mullan, Semple, & Skaff, 1990), which examines interrelationships between stressful life events and chronic life strains, self concepts, coping, social supports, self-esteem and mastery, and mental health. It is striking that many of the most commonly used models, such as stress process models, successful aging, models of health services use, and disablement process models, represent areas at the intersection of social gerontology and biomedical approaches.

The use of these models may represent, in part, the gap between theoretical and applied social gerontology. Hendricks and colleagues (2010) have argued that theorists assume that empirical researchers are not availing themselves of

existing theories, whereas applied researchers assert that theoretical work that is not grounded in observation is irrelevant. Models are widely used in applied research in which description of the associations between concepts or variables is seen as central to understanding of the problems of older persons. However, a model that describes observed patterns may not help to identify opportunities for intervention. To do that, a causal understanding of the problem is required; a theory of *how* and *why* the problem develops is needed. Efforts are needed to bridge the gap between models and theories, just as they are needed to bridge the gap between theoretical and applied gerontology. A model is a reproduction of the world, whereas theory represents an attempt to explain the world (Marshall, 1999). Models may be a first step toward theory development in multidisciplinary research areas in which existing theoretical frameworks are inadequate to describe and predict the associations under study, but the process of explanation must not stop there.

The finding that models are commonly used as a supplement to or substitute for theory may indicate opportunities for theoretical development either by adapting or expanding existing theoretical frameworks or by developing new ones. In the areas of successful aging and the disablement process in particular, a great deal of debate continues about how to revise models to increase their ability to explain health at older ages (for a discussion of successful aging, see Holstein & Minkler, 2003; Phelan & Larson, 2002; and Schmeckle & Bengtson, 1999. For a discussion of disablement process models, see the November 2009 issue of *Journal of Gerontology: Medical Sciences*.), Stress models are also being expanded, updated, and incorporated into developing theoretical frameworks. Pearlin (2010) has recently examined areas of conceptual overlap and cross-fertilization between stress process models and the life course perspective, and stress accumulation is central to the emerging theory of cumulative inequality (Ferraro & Shippee, 2009). Thus, over time, commonly used models may emerge as important theoretical contributions to social gerontology. With sufficient communication between applied and theoretical gerontologists, such emerging frameworks may help to better integrate theory into applied research (and vice versa).

Why Has Theory Use Increased?

We have shown that theory use increased significantly over the 10-year period examined, but 61% of articles still include no mention of theory. In order to determine how to continue to foster the growth of theory in the future, it may be helpful to consider potential explanations for the increase in the use of theory observed here. Explanations include top-down demands for greater incorporation of theory into research, such as from editors, publishers, reviewers, and grantmakers, as well as bottom-up changes in the types of articles being submitted from researchers in social gerontology.

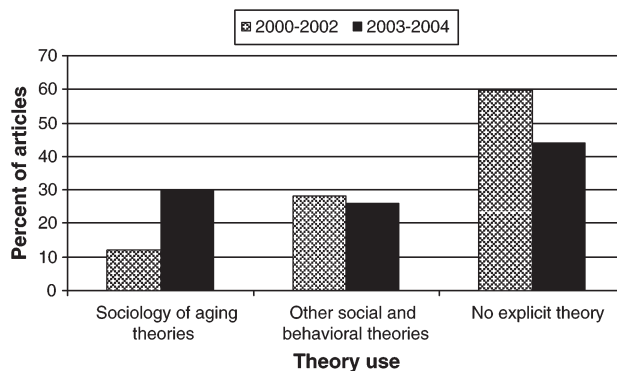


Figure 1. Theory content in the *Journal of Gerontology Social Sciences* over time ($N = 184$ articles).

Although this study was not designed to explore the reasons for changes in theory use over time, some relevant data can be brought to bear on this question. We noticed a marked increase in the prevalence of theory between 2002 and 2003 in the *Journal of Gerontology: Social Sciences*. As shown in Figure 1, overall use of theory increased from 40% of articles between 2000 and 2002 to 56% of articles between 2003 and 2004. This change coincided with Charles Longino becoming editor of the journal. Longino (2002) specifically encouraged submission of theoretical manuscripts, and the trend we observe suggests that this editorial policy may have influenced theory use in published articles.

However, it is notable that the editorial policies of the *Journal of Gerontology: Social Sciences* have consistently encouraged theoretical submissions over the last 40 years and that many of the journal's previous editors have also been advocates for theory. Thus, it is difficult to know whether the marked increase in theory use we observed in the journal is due to editorial influence or to other changes in the field of social gerontology.

A variety of changes in the field could underlie the increase in theory use observed across journals over time. It is possible that the cumulative emphases on theoretical thinking reached a tipping point. The late 1990s were a period of heightened interest in theory in social gerontology, with the publication of the first *Handbook of Theories of Aging* (Bengtson & Schaie, 1999) and two special issues of *The Gerontologist* focused on theory (Hendricks, 1996; Lynott & Birren, 1996). These and other efforts to promote the importance of theory in empirical research may have influenced theory use over the time period under study.

Increased theory use could also arise from growth in interdisciplinary research in the field. Bengtson and colleagues (2009a, p. 6) argue that the most striking theoretical trend since the publication of the first edition of the *Handbook of Theories of Aging* is the development of interdisciplinary theories of aging: "Despite the difficulties in bridging traditional disciplinary boundaries and despite the challenges of working with different research paradigms,

there have been significant breakthroughs in explanations of aging phenomena that take approaches from several disciplinary perspectives and blend them together into a unified theory." A growth in interdisciplinary research could lead to an increase in explicit mentions of theories in publications if greater precision regarding theoretical orientation facilitates communication across disciplines. Additionally, the growth of interdisciplinary research might provide fertile ground for the creation of new theories or the expansion of existing theories.

It is also possible that more recent generations of scholars place a higher value on theory than earlier scholars in social gerontology, which calls to mind a sociology of knowledge perspective on changes in theorizing. In the case of social gerontology, Hendricks (1992) proposed that as even as theory advances the accumulation of knowledge in our field, it is also a social enterprise linked to the careers of successive generations of scholars. As new theories develop, some will ascend to gain dominance in the field. Dominant theories are then critiqued, leading to their reformulation or the formulation of new theories. An examination of the history of theorizing in social gerontology suggests that formulative or reformulative stages of theoretical development provide more opportunities for theory innovation or refinement than when theoretical perspectives are in their ascendancy (Hendricks, 1992). The growing importance of multidisciplinary theorizing and increased use of theory we observed in this analysis suggest that social gerontology may be entering a new phase in its theoretical development.

Strengths and Limitations of This Approach

This analysis utilized a highly structured coding scheme to review more than 1,000 articles published in eight social gerontology and sociology journals from 2000 to 2004. Major strengths of this approach include its quantitative review of the most commonly used theories and models in social gerontology and comparability to a previous analysis examining the use of theory in social gerontology from 1990 to 1994. We expanded the earlier protocol in two significant ways: (a) coding the frequency of all theories used, not only those core theories from the sociology of aging identified as of interest in the 1997 analysis and (b) coding alternative explanatory frameworks (i.e., models) that are used to generate hypotheses and interpret results.

This approach also has limitations, pertaining both to the journals we reviewed and the coding scheme we utilized. The journals selected in the 1997 analysis and used in this updated review focus on the sociology of aging, as reflected in the choice of *American Sociological Review* and *American Journal of Sociology* as the only nonaging journals included. A full examination of theory in social gerontology might include additional aging-focused journals, such as the *Journal of Aging and Health* as well as

social gerontology articles from additional journals not focused exclusively on aging, such as the *Journal of Health and Social Behavior*. Additionally, inclusion of journals from outside the United States, such as the *Canadian Journal of Gerontology*, might better represent the diverse contributions of international journals to scholarship in social gerontology. These choices related to journal inclusion may have important implications for results. For instance, theories from psychology and social psychology might have appeared to be even more prominent if journals with a greater focus on these areas were included. Additionally, our focus on the use of empirical research published in journal articles excludes research published in book chapters, a major forum for research advances in some subfields of social gerontology.

The coding scheme we utilized also has certain limitations, both for historical comparison and current analysis. Both the current analysis and the 1997 analysis classified articles as using theory if they mentioned a theory anywhere in the text. Thus, our results may include articles in which theory was simply "tacked on" rather than integrally incorporated into analysis. Although the 1997 article was titled, "Theory, explanation, and a third generation of theoretical development in social gerontology," and includes a variety of references to social gerontology throughout the manuscript, the methods were focused on the sociology of aging. Individual theories were only coded if they were 1 of 13 core theories in the sociology of aging, such that the frequency of individual theories within the "other theories" category was not reported. Thus, we can only compare changes in this overall category rather than those in the use of specific theories within the other theories category. Additionally, the 1997 analysis focused on "topics of research in the sociology of aging" rather than all articles published in the journals they examined. Unfortunately, records were not available to define which topics were considered as topics in the sociology of aging, so we elected to include all articles published in the six aging journals included during this time period. This difference is likely to affect historical comparisons from journals that publish research outside the sociology of aging most strongly. The 1997 analysis excluded 76% of articles from *The Gerontologist* and 57% of articles from *International Journal of Aging & Human Development*. However, if these journals were excluded from the current analysis, the main results of our article would be even stronger: Overall theory use in articles would have increased from 26% to 46%, and the number of theories outside the core theories from the sociology of aging would have increased from 8% to 24%. Thus, we believe that our findings are robust to differences in article selection.

Conclusions

Our goal in this article was to describe the frequency of theory use in published research, examine trends in theory

use over a 10-year period, and document which theories are used most frequently. Although the majority of research in social gerontology continues to be atheoretical, theory use has increased substantially in published research, with a shift toward more multi- and interdisciplinary use of theory. This major advance in a field known for its paucity of theory represents an important step in gerontology's development as a discipline. However, theory remains underutilized, and models are widely used as a supplement to or substitute for theory, especially in applied research. Over time, as these models are debated and elaborated, they may emerge as important contributions to both theoretical and applied social gerontology.

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