The Lifespan Development of Writing

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Chapter Ten

Lifespan Longitudinal Studies of Writing Development: A Heuristic for an Impossible Dream

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Writing is not only a school subject, it is a medium of exchange, communication, and action throughout life—and we need to understand how use and skill in writing develop across the lifespan.

Writing is a medium that has grown in its importance, variety, and pervasiveness since its multiple inventions in the Fertile Crescent, China, South Asia, and Meso-America a few millennia ago. As it has grown it has become an ever-richer resource for participation in a wider set of activities that have themselves come to depend on writing. Full participation in these activities has required ever-greater skills and ever-more-subtle understanding of the many refined resources available within writing.

Accordingly, apprenticeship in writing has become an increasingly long and complex one, requiring decades for advanced flexible expertise, with skill potentially increasing throughout one’s life. Further, expertise itself has become more variable, with people skilled in one domain and not others, and each person’s path and repertoire distinctive, even within the same domain. Being a skilled poet does not necessarily coincide with being a skilled novelist, and neither necessarily with being a great drafter of legislation, writer of scientific papers, or effective contributor to collaborative workplace reports. Yet even as writing has presented more challenges, it has become imperative for every person to learn to gain place and voice in the world, to gain the benefits of participation, and to avoid the costs of exclusion. In this context
of growing demands and growing rewards for writing, schooling has developed to meet social needs for literates, starting with the early schools for scribes in the ancient Middle East and leading to current norms of universal education through adolescence, within which writing is taking an increasing role.

Understanding the varied pathways to competence and expertise in writing can help educators provide support to writers at every stage from early childhood through adulthood, and further it can help people self-monitor and guide their own development in realistic terms. But how can we understand people’s varied pathways into writing and their varied pathways to achievement? Or how can we understand the complexity of even one individual’s idiosyncratic pathway to the mature competence that provides a confident, strong, and unique written presence within the individual’s lifeworld? These concerns form the basic problematic of this volume and the Lifespan Writing Development Project.

An obvious contribution to answering these questions would be a rich body of longitudinal studies of the writing development across the entire lifespan of many people of varied backgrounds and experience. Lifespan longitudinal data can break down the silos we now have of writing being researched only within age groups or levels of schooling. They can reveal how writing takes on different roles, purposes, and meanings at different moments in life as well as when and how different forms of development emerge at different times in life. This knowledge will give us insight into how writing developments can be supported in a timely, appropriate way, suggesting how curriculum and instruction might be varied to be developmentally appropriate throughout the course of education. It will highlight the individuality of developmental accomplishment and pathways in writing.

Such a project may seem quixotic and perhaps impossible in its magnitude, expense, and logistical complexity, as well as in terms of simple data collection and records maintenance. Yet it is worth contemplating as a thought experiment to help us conceive of writing development, reframe and synthesize existing research, and plan other less ambitious projects with more modest goals.

Adopting a lifespan longitudinal perspective helps put the focus on the uniqueness, creativity, and meaning of writing development for individuals, within the complexity of their separate
lives. Longitudinal studies offer the possibility of understanding individuals following unique pathways leading to unique skills, orientations, and responses in situations rather than being normalized through cross-sectional groups of age, educational level, or other category, with individuals being characterized as either typical or atypical. Rather, a long-term longitudinal view perceives the individual in relation to access to resources and experiences, sequences of events, learning opportunities and challenges, orientations to those opportunities, developmental sequences, formation of writing processes, and emerging identities. That is, we can see how the writer at each moment draws on unique prior experiences and resources to identify, understand, and act in each new event, thereby further developing through the solving of new writing problems. If we collect adequate situational data, we can see writing growth taking place as a response to social situations and demands, and formative of social relations and identities, which in turn provide further opportunities for challenge and development. In this way we can come to better understand the interaction between the intraindividual and the interindividual within writing development.

These processes continue throughout life with the potential for increased and varied competence as the years go on, as the most skilled may not reach the highest levels of achievement and individual distinctiveness until their later years. Further, transitions of life conditions and writing needs, stagnation, disruptions, redirections, or deterioration of writing also are important to understand, and can occur in different ways at different points in life. Thus longitudinal studies ideally should extend across the entire lifespan to see the total picture and to understand how early experiences and growth affect later opportunities, resources, and challenges, as well as how future goals may motivate earlier learning.

Drawing such a large picture, lifespan longitudinal studies of writing development will need to collect rich linguistic, textual, social, interactional, psychological, economic, cultural, and even neurological data in order to look at all dimensions potentially relevant to writing development. The contextual and developmental data themselves will need to be dynamic, as writing, society, and people are ever creative, ever changing. Yet such a project
will provide us the materials to see the variety of experiences, and perhaps give us understanding of some underlying processes that are engaged broadly. At the very least we will see how long and complex the journey is for each individual and how far the different journeys take people in different directions within the contingencies of society, politics, economy, and personal life. This larger picture will extend beyond schooling to include all of literate life, though schooling is likely to be an important part at least of the early development, providing resources and orientations for later challenges. Indeed, part of the goal of such research would be to highlight writing development as something distinct from passage through particular curricula or school experiences. Finally, collection of such rich data can provide a resource for future researchers to draw on, reanalyze, or compare to newly collected data. Even a few lifetime cases collected in rich detail can support many kinds of after-the-fact research. A wider scope of cases will further increase the potential usefulness, widening our vision and questioning our assumptions.

The remainder of this essay will project the potential scope of such a project in the most ambitious terms as a prod to future investigators. As part of considering what a lifespan study might look like, and its challenges, I will first examine some of the principles and practices of longitudinal studies in other domains, and particularly multidecade or lifespan longitudinal studies, to see how they are organized and how similar and different they are to what would be needed in studying lifespan development of writing. While some aspects of longitudinal studies in other fields may seem more distant from the needs of writing studies than others, it is useful for clarity to consider the full range of thinking about longitudinal studies. In this early section, comments on writing studies will appear sporadically as they seem appropriate. After examining the broad scope of long-term longitudinal studies, I will propose more systematically some key features of the design of a longitudinal study of writing development. The strategy in that design will be heuristically to draw as broad an investigative scope as possible, making few narrowing choices, while being transparent about the theoretical standpoint and the practical difficulties involved. Of course, actual studies to follow will need to make narrowing choices as they focus their inquiries into doable projects.
Longitudinal Studies in Other Fields

Longitudinal studies have been used as far back as the eighteenth century (Tetens, 1777; Carus, 1808), in biological development, health and medicine, epidemiology, well-being studies, developmental psychology, demography, sociology, and other fields. In each field they have had somewhat different designs, different kinds of data, and different data sources, pursuing the interests of those disciplines and professions. What they have in common is the periodic collection of data from a designated population of specific individuals in a time-ordered study for description and explanation. What counts as appropriate and adequate description and explanation, of course, also depends on disciplinary interests, standards, and states of theory and knowledge. The disciplinary issues for the study of writing will be discussed below. However, more generally, description might include trajectories of consistencies and changes, and explanation might include patterns across individuals (Robins et al., 2002), identification of characteristics that remain consistent within individuals (for example, Roberts & DelVecchio, 2000; Roberts, Walton, & Viechtbauer, 2006), sequences of development or developments associated with life epochs, variables of individual characteristics that correlate with later outcomes to indicate causes (Nesselroade & Baltes, 1979; Orth, Robins, & Widaman, 2012; Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008), or models of development (Reitzle & Vondracek, 2000).

For a study to be considered longitudinal it must follow its subjects over sufficient time to make visible earlier differences and later changes, typically a number of years, though in periods of rapid change, such as the first months of life, shorter periods may be appropriate. To allow comparisons over time, typically some measures and instruments are repeated, but because of life changes some data collections may vary at different times (Lynn, 2009). For example, while measures of social connection at the youngest ages may rely on observations or parent surveys, in school years data about neighborhood and schooling may be added along with child oral self-reports and interviews, to be displaced in adulthood by periodic subject self-reports through digital surveys.
Different from prospective longitudinal lifespan studies are retrospective longitudinal studies that collect existing data and records (such as health or schooling records) to see how earlier records predict current outcomes. These have the benefit of not requiring such extensive institutional apparatus and being doable within a compact period of time, but they are dependent on the quality and continuity not only of records but also of the particular interests that motivated the data collection. These studies cannot gather additional or different historical data that might be of interest for the research questions, but which were not the concern of earlier recordkeepers. A longitudinal perspective on development can also be obtained by retrospective interviews, such as has been pursued in writing studies by Deborah Brandt (2001, 2015, and this volume). These have the benefits and limitations of drawing on memories of individuals, offering the continuous presence and perspective of the individual, but subject to the vagaries of memory, the selectivity of self-presentation, and the absence of real-time external data and confirmation.

In longitudinal research the focus is on individuals, but longitudinal studies can also reveal how interindividual interactions may influence intraindividual change and how intraindividual change may in turn influence interindividual interactions (Nesselroade & Baltes, 1979). In this respect longitudinal research differs from age-stratified cross-sectional methods that treat subjects as part of categories rather than as individuals (Rajulton, 2001). Robinson, Schmidt, & Teti (2005) suggest that though cross-sectional studies are easier and cheaper, and may be useful for proposing hypotheses and identifying age group differences and subgroups within cohorts, they cannot indicate the causes or trajectories of change within individuals. The longitudinal focus on individuals over time, and the potential for considering the relation between the individual and others are of obvious value for studying writing development, which can be highly individualized but takes place within social orientations, perceptions, behavior, imitation, typifications, and effects, that themselves may be idiosyncratically experienced and perceived by individuals.

In longitudinal research, groups of individuals are usually tracked in parallel to support comparison, with a common starting point, whether defined by birth, entering a school, or suffering
a trauma or other initiating event. These historical events may identify a small group, such as via entrance to an educational institution or diagnosis with a specific medical or psychiatric condition, or they may be shared across a large group, such as via the initiation of a war. A variation is to seek developmental epochs or developmental sequences and to match subjects engaged in such sequences. Whatever the starting point, usually the longitudinal groups are chosen to share that initiation point. However, sequences of cohorts may also be chosen to provide for comparisons across historical change or for other reasons.

Another characteristic of longitudinal studies is an intentional periodicity in measures and data collection, as well as a consistency of measures over time as opposed to life histories constructed from whatever records, data, and reports are available or otherwise loosely structured narratives (Janson, 1981). Data may be collected from many kinds of sources including institutional records such as hospital, school, or justice systems; surveys; interviews; medical or psychiatric examinations; observations; or repeated task performance or psychological instruments. Variables collected for correlation tend to be focused and limited (e.g., diet, income, geographic mobility) and are usually readily associated as characteristics of individuals. Thus health studies look at how behavioral, environmental, and biological variables correlate with morbidity or health problems. Even social issues (such as attendance at different schools, number of social contacts, or kinds of family arrangements) can be characterized as variables of individuals.

Although some studies use qualitative data, the larger number of studies rely largely on quantitative data that are then statistically analyzed, and much of the methodological literature on longitudinal studies is devoted to statistical issues (for example, Cook & Ware, 1983; Helms, 1992), modeling issues (for example, Petersen, 1993; Hertzog & Nesselroade, 2003), or computational tools (Brandmaier, von Oertzen, Ghisletta, Hertzog, & Lindenberger, 2015). Such studies can be useful in writing studies to see if there are patterns in family and social situations, schooling characteristics, and the amount of writing or use of writing that might predict later engagement with writing, or to uncover other patterns to be investigated by other means, but such studies do
not seek out the meanings embodied in texts, writing strategies or repertoires, writing practices or processes, the quality or efficacy of the texts, complex processes and practices, or the orientations and meanings for the authors engaged in specific situations. So while some statistical measures may be of use for studying writing development, they would likely need to be used in conjunction with more qualitative, individualized studies.

**Multidecade and Lifespan Longitudinal Studies**

While longitudinal studies typically track subjects over a number of years, full lifespan or even multiple-decade studies are less common. The costs and logistical challenges of all longitudinal studies tend to be high, including keeping track of subjects, keeping attrition to a minimum, keeping records, and maintaining a research team over years. At the same time the payoff in results and publications is slow. So the anticipated benefit of long-term longitudinal study over stratified samples must be apparent, and significant enough to offset the difficulties and costs. To that is added the need to recruit new researchers and to account for changing theories, research interests, and data-collection methods. Initial interests may define the data-collection regime, which then constrain later studies. For example the longest-standing continuous lifespan study, the Terman study of gifted individuals started in 1921, relied on the Stanford-Binet intelligence test to identify the study population (Terman, 1925). The value and meaning of such tests have since been called into question, definitions of giftedness have changed and remain contended, and the outcome variables and data-collection methods have now been long outdated. Further, since IQ was thought to be a fixed individual genetic characteristic, fewer social data were collected about opportunities and experiences that might serve to allow talents to flourish or enhance capacities. The only systematic collection of data was periodic mail-in self-report surveys of accomplishments and life conditions. Despite the limitations of the study (and the substantial critiques of the underlying theory, the subject selection, and the data collection) the study did have a number of direct and indirect findings, one of which was in fact to disconfirm the underlying hypothesis that high scores in intel-
lignence tests would result in better career, economic, and health outcomes than matched peers (Terman & Oden, 1959). Less directly, since the study added subjects over a period of seven years and the cohorts experienced both the Great Depression and the World War II military draft, the effect of these events could be compared across matched cohorts of different generations (Elder, Shanahan, & Clipp, 1997).

Another long-term longitudinal study, the Harvard Study of Adult Development, initiated in 1937 and based on similar genetic beliefs about talented individuals, tells an even more complex story about how with sufficient flexibility studies may be maintained over long periods and data remain useful despite changes in theories, directors, institutional arrangements, historical conditions, technologies, measurement interests, and measurement instruments. Over the years research questions changed, new measurements and data-collection methods were added, and many different kinds of findings were drawn from the research data (see Vaillant, 2002 and 2012, for further details). The 268 study subjects were selected from Harvard students in the classes from 1939 to 1945. The selection of students and the initial measures were intended to elaborate now-outdated theories of biological superiority and success in life. Reflecting the Harvard population at the time, the subjects were all male and overwhelmingly Protestant, from well-off, even affluent backgrounds. However, 10 percent of the sample was Jewish and 10 percent Catholic. Also included were scholarship students from working-class backgrounds who were judged as highly talented. The men were chosen, in the terms of the time, for “soundness.” Other potential subjects were eliminated for signs of weakness of character, deviance, lack of psychological fitness, weak body type, and similar reasons. Early measures included interviews but focused on physical condition, body measures, physical dexterity, psychiatric and intelligence measures, family background, even the primitive EEGs available at the time and handwriting samples for character analysis. Early data did not support the initial hypotheses, as a number of the subjects had less happy or less successful lives than expected. But the data turned out to be useful for other questions, such as what factors may have contributed to leadership as indicated by rise in the officers’ ranks in
World War II. Interestingly, the only positive correlation for career advancement came from a personality predisposition to politics and the only negative correlation from creative and imaginative personalities (Valliant, 2012, Chapter 2). Another analysis used the carefully matched sample to show that medical doctors turned out to abuse prescription medication at twice the rate as did others of similar background but following different professions (Valliant, Brighton, & McArthur, 1970). Over the years funders and funding levels changed, dominant theories changed, study directors changed, and technological means changed. Some data collection was dropped, new data collection was added, and the data were analyzed for different purposes. But periodic surveys and interviews continued, maintaining some continuity. For example, as theories of social relations became more important, the effect of personal relations on life measures was added as a research focus. Interviews with wives, siblings, and children were added as the men matured, and new assessments were made of work, love, and play adjustments. Then as the men grew older, questions of successful aging became the central research focus—with new questions added to the interviews. The effects of aging and new biological knowledge led also to a return in later years to health and physical data as well as genetic DNA analysis, but within new theoretical contexts.

One important element of study success was the development of personal relationships between the researchers and the subjects over the years and repeated cycles of data gathering. The trust and intimacy (along with the extensiveness of knowledge of each subject aggregated in files) helped maintain the engagement of the subjects and led to depth in the interviews (Vaillant, 2012, Chapter 3; see also Thomson & Holland, 2003). The return of a staff member who had temporarily retired even helped bring back subjects who had stopped communicating with the study. On the other hand, this importance of relationships highlights how repeated contact and data collection in longitudinal studies can influence the behavior and thinking of subjects, resulting in panel conditioning (Rajulton, 2001; Lynn, 2009).

An important lesson of the Harvard Study of Adult Development is that even though researchers cannot control or foresee the future, and even though hindsight would lead to regrets about
limitations of prior data collection, the overall continuous record remains of value if flexibly and creatively used, and could answer many questions beyond the initial scope of the study. Despite the ideal of consistent data collection over the years built into the initial plan, data collection can be modified to fit new perspectives.

Lessons from Long-Term Longitudinal Studies in Psychological Development

The principles of understanding writing development proposed by the Lifespan Writing Development Group in this volume point to multiple dimensions of writing developing simultaneously and through engagement with a variety of learning and problem-solving experiences. While focused longitudinal studies that attempt to examine one dimension of writing development might call for only a limited data set, a more multidimensional picture would require a richer, more multidimensional data set, which will consider individual pathways through varied experiences, both in school and out as well as before the school years and beyond—through career, life experiences, and ultimately old age. This essay will spell out some of the possible data needs and gathering techniques below, but it is evident that the amount of potentially relevant data is massive, and that analysis will be even more challenging, as suggested by the two substantial data sets collected of just the undergraduate years in two particular institutions, Stanford and Harvard, as discussed below.

The dilemma faced by writing studies bears some similarity to those faced by the study of psychological development. Within both there is a desire to map out the particularity of individual experience and to trace changes and pathways over time, seeing the responses, performances, and understandings of the older person as a result of the experiences, orientations, resources, and skills amassed previously. Further, in both areas development has been understood to be a function not only of biological development but also of situation, context, and experience; engagement with others; and learning from them by explicit, implicit, and mediated means. This complexity widens the need for multiple kinds of data that extend beyond the individual. Thus as the person develops the potential dimensions of data expand, and
the developmental story becomes potentially more complex. In both domains longitudinal studies have a great attraction, but meet many challenges. In this volume, Brandt also considers the lessons from developmental psychology for understanding writing development; but here I will focus on the methodological lessons to be drawn from developmental psychology, as the field has a substantial history of puzzling through the designs of longitudinal studies and then carrying them out, with successes and shortcomings.

Kagan (1981) suggests that rather than searching for simple patterns of development, within the complexity of multivariate data one should look for questions of how structures maintain and preserve themselves, which ones change, what the mechanisms of change are, what elicits growth, and how growth rates might differ. The implication is that we not seek immediate comparison across individuals, but that we analyze first the nature of each individual’s development, what structures we can find within the individuals, what patterns and mechanisms of structural maintenance and change appear, and what variables or conditions or events initiate change and affect the rate of change. These processes and variables may then be more fruitfully compared across individuals. Robinson, Schmidt, & Teti (2005) similarly suggest that rather than comparing across age, cohorts, life periods, or events we match comparisons across the actual developments of interest to us. Thus in writing studies we might compare all individuals who are able to handle a particular syntactic pattern or all those who show a spontaneous tendency to reflect on larger text structure or all those who are aware of the stance their text takes toward an audience. Further, Reitzle and Vondracek (2000, p. 446) suggest that timing is more informative than accumulated time; that is, more important than chronological age or period of time is the point at which an individual is able to make complex decisions of a particular sort, and how that change might appear within a sequence of prior events and the individual’s awareness of the relevant considerations. Peterson also focuses attention on event histories, sequencing, time in state, and timing of change within individuals.

Schooler (1984), in reviewing a number of studies, finds strong evidence for a hypothesis that might have important implications
for writing development. The hypothesis posits that diversity of stimuli and complexity of environment leads to effective cognitive functioning and nonconformist orientations. That is, the richer the environment, the more novel are the decisions made by the individual. The implications for writing development may be both that complex environments may generate more distinctive individualized writing, and that writing activities can provide rewards for cognitive originality. Consequently, the further an individual is drawn into the complexity of writing situations and the potentials of decision making on multiple dimensions, the more the individual may be further drawn to uniqueness of expression and production. The writing work then itself becomes a complex problem-solving environment.

Baltz (1987) makes a related methodological suggestion that the way to study cognitive flexibility and developmental plasticity—that is, the ability to adapt and grow rapidly (as well as to measure periods of decline)—is to test the limits of individuals’ responses to situations. This may in fact suggest a mechanism for development in that those who grow are those who are in positions and have dispositions that test their limits and put them at risk with challenging tasks. On the other hand, Baltz & Nesselroade (1979) point to the possibilities that development may be discontinuous, open to attrition, and multidirectional rather than unidirectional. This is important to point out for writing development, where growth is unequally distributed. Only part of the population finds itself addressing challenging situations, whereas others may avoid challenges or find that their lives do not require writing challenges of them. Attrition may occur for many reasons, or writing development where it does occur may be multidirectional, with directions developing at different paces and some directions advancing at the cost of others.

Longitudinal Studies in Writing

Prior shorter-term longitudinal studies in writing can also provide us some guidance in how we might design a lifespan study, even though they have been of shorter duration and have not faced the problems of studying development across multiple stages of
Life. Prior studies usually have been contained within students’ attendance in an institution, most commonly an undergraduate university program, or their entry into a professional position (see Rogers, 2010, for a review). These have tended to rely on qualitative analysis of texts combined with periodic interviews and perhaps observations in order to understand individual pathways, interests of students, and sometimes disciplinary enculturation. The analyses have been individualized and interpretive. The most detailed and in-depth of these have been of a small number of subjects (between one and four), revealing how skills, orientation toward writing, and identity have developed interactively as students’ educational and life situations have evolved (for example, Herrington & Curtis, 2000; McCarthy, 1987; Beaufort, 2004; Haas, 1994; Spack, 1997; Chiseri-Strater, 1991; Artemeva, 2009). There have been a few similar studies for graduate students (for example, Berkenkotter, Huckin, & Ackerman, 1991; Blakeslee, 1997; Prior, 1998).

Longitudinal studies of a somewhat larger size have typically led to generalization in the analysis and reporting and a loss of detail. Carroll (2002), with 46 subjects, reports only generalized trends, using individual cases as examples or exceptions to the trends rather than understanding individual pathways. As the driving purpose of the study was program design, there is substantial justification for the strategies that seek common threads, but from the point of view of understanding developmental pathways such studies contribute only some general themes. Larger samples have produced even greater challenges to analyses; in particular the Harvard Study of Writing (n=422) and the Stanford Study of Writing (n=189) have yet to produce any overall aggregative or contrastive analyses, rather presenting only a single-subject case study (Fishman, Lunsford, McGregor, & Otuteye, 2005) or interpretive thematic essays using anecdotal examples from the corpus (Sommers & Saltz, 2004). Rogers (2008), however, has attempted trait-based analyses of a subset of the Stanford corpus (n=40) to examine variations in growth in different dimensions, along with a grounded thematic analysis of a subset of the annual student interviews concerning their perceptions of their changing writing experiences.
Sternglass’s (1997) midsize cohort (n=53) attends both to individuals and to larger thematic findings, supported systematically by the data. Through qualitative analyses of texts and interviews, Sternglass found certain developmental pathways for students of similar background and challenges as open admissions students, but also found individual differences in how these pathways developed for different students.

A different strategy for gaining more focused longitudinal studies has been to limit the data to language production. Within higher education Haswell (2000) used detailed linguistic and trait-based scoring of two writing samples from the same students (n=64) two years apart to identify changes in the texts between the first and third years. Loban (1967) used a wide range of spoken and written samples of student language from 211 subjects from kindergarten to grade 12, to identify changes in spoken and written language use. While the collection was longitudinal for the 211 subjects, and some sociocultural demographic data was gathered and used for correlations, the analysis is aggregative, revealing typical patterns across all users, and then compared across sociocultural groups.

Hunt (1965) examined changes in syntactic structures of eighteen students at each of three grade levels (4, 8, and 12) using stratified samples, with aggregated results and analysis to indicate general patterns of change. More recently and in greater detail Christie (2012) and Christie and Derewianka (2008) mapped grammatical development across grade levels, differentiated by discipline and genre, using extensive stratified data from numerous studies and piecing together investigations at different levels. That research is further analyzed in this volume by Schleppegrell and Christie.

Most longitudinal studies of writing development in the early years and early grades have viewed writing within the context of overall emergent literacy, tending to focus more on reading than writing, with a few notable exceptions (see Tierney & Sheehy, 2003, for a review). Emergent-literacy studies of individual young children have described early productive behavior in the context of total literacy awareness. Some of these have included writing as indicating print awareness and alphabetic knowledge.
(MacIntyre & Freppon, 1994), letter formation and spelling, including invented spelling (e.g., Cochran-Smith, 1984; Beers & Henderson, 1977; Goodman, 1986; Bloodgood, 1999; Treiman, 1993), and phonological awareness (Chapman, 1996). Rowe (1987) found literacy events developing within social interactions as 3- and 4-year-olds learned from one another, incorporating meanings and communicative tools shared in interaction in order to construct their own texts and respond to the texts of others.

A few longitudinal studies of emergent literacy based on parent journals have focused more centrally on writing (Hildreth, 1932, 1934, 1936; Butler, 1979; Bissex, 1980). In early school years, as students progress through the first four grades, King and Rentel have found an increase in coherence through the use of identity and similarity markers, and the use of narrative structures as early as the second grade (King & Rentel, 1982; Rentel & King, 1983). Sipe (1998) also found in the first grade a movement toward conventionality. A team study of third- and fourth-grade students (Goodman & Wilde, 1992) looked at a number of different aspects of writing development within the longitudinal group. Wilde (1992), Wilde et al. (1992), and Kasten (1992) found both narrative and conventionality increasing with increasing use of human and inanimate resources and invented spelling moving toward conventional. Berninger, Abbott, Nagy, and Carlisle (2010) show variable growth rates for phonological, orthographic, and morphological awareness across the elementary grades. Vaughan (1992) found increasing genre and audience awareness, growing writers' identities, and increasing syntactic complexity and length. Wilde et al. (1992) found that while progress was not linear, overall there was long-term growth in audience awareness, conventions, and genres. In a different series of studies, Abbott, Berninger, and Fayol (2010) found relations among development of word reading, comprehension, spelling, and composing in grades 1 to 7. Dyson (1993, 1997, 2003) found children developing written meanings within their social interactional environment using resources they had found from their entire cultural experiences. Digital changes in process and activity have opened up new kinds of studies, with some in informal settings, tracking the influence of engagement in new technology (for example, Tierney & Sheehy, 2003), and also the
benefits and costs of handwriting versus keyboarding for various populations.

Only a few studies have been able to track students in their transition from one educational setting to another. Beaufort (1999), Dias, Freedman, Medway, and Paré (1999), and Winsor (1996) have followed students from the university to the workplace, highlighting the difference of conditions and writing goals and the requirements for new orientations and developmental paths. Tremain (2015) examined how efficacy and dispositions toward writing of high school students influenced how well they were able to transfer their prior writing knowledge to writing at the university.

Overall, prior longitudinal studies in writing have presented the challenge of tradeoffs between, on one hand, individual and text-sensitive measures that highlight the particulars of individual pathways of development, and that are attentive to the meanings developed and the sophistication of text production, and, on the other hand, the aggregation of larger corpora that are amenable to quantitative analysis but that wash out variability and developmental pathways along with individuality of accomplishment and repertoire. These challenges are both in the collection of sufficient data of appropriate kinds and in the analysis of the rich data that might be collected. The greatest successes have been when the literacy experiences and accomplishments have been most contained within the family and early schooling. As the child gets older and engages in more activities and more complex productions with more resources, within more varied situations, the potential data and dimensions of development expand rapidly, making comprehensive collection and analysis more difficult.

Study Design

Based on what we have learned from prior longitudinal studies in writing and other fields, this essay will now project how a writing development study could be designed. Issues to be considered include selection of the study population, kinds of data that would be useful, data-gathering techniques, periodicity of data gathering, recordkeeping, study management, and other logistics. Many
possibilities will be presented here, but of course any real study would necessarily need to make choices.

But first, given the history of longitudinal studies, we should consider the underlying theory that drives the design I offer, even though data collected can be reused and reanalyzed as theories are discredited or found less useful and new theoretical ideas come to the fore. Further, also given the lessons of the value of flexibility, we might consider how some of the data collection might extend beyond our current interests to other possible orientations, even if the theories, measurements, and analytical tools may not yet be well developed.

The design features proposed here rest on an understanding of the social nature of writing; the importance of the individual’s perception of the situations and attitudinal and emotional orientation to the situation; the available language resources for choice making; the intertextual resources drawn on and intertextual position adopted; the available technologies and materialities of production and communication; genres and other typifications of meaning and situation; and activity systems mediated by and participated in through writing. Development in this view is achieved through a history of engaged and motivated experiences that extend the writer’s perception of situations, resources, and possible decisions. These experiences may be supported by instruction, models, and other forms of explicit information and advice, but development can also occur though implicit and spontaneous improvisatory responses to perceived situations and the implicit rewards and costs for the choices made. Writing and writing development follow unique individual tracks based on those histories of experiences and engagements within activity systems, and on the pursuit of one’s own stances, interests, and meanings within those systems. Overall, while writing has psychological, rhetorical, linguistic, intertextual, graphic, material, cultural, and social elements, it is ultimately a form of social participation and social meaning making, with development being part of the process of increasing one’s engagement with social groups, forming identities within them, and carrying out activities through the sharing of meanings. These views I believe are consistent with the overall principles developed by the Lifespan Writing Development Group presented in Chapter 2. I believe they