SCOTT BARRY KAUFMAN
JAMES C. KAUFMAN

Ten Years to Expertise, Many More to Greatness: An Investigation of Modern Writers

ABSTRACT The "ten-year rule" suggests that it takes about 10 years of preparation to reach "expert" status. How long does it take, however, for someone to reach a level of creative greatness? Through an analysis of 215 contemporary fiction writers, we found that these writers took an average of 10.6 years between their first publication and their best publication, although there was a high degree of variability. This tentatively suggests that at least for modern fiction writers, a second phase after the first ten years may be crucial for achieving eminence. We discuss these findings in the context of results found in other domains of creativity, along with limitations and future directions.

INTRODUCTION

Sometimes big questions can be addressed with fairly straightforward studies. The image of a writer as a genius driven by a muse is certainly an established stereotype (and one often embraced by writers themselves; see Piirto, 1998), and encourages a spiritual view of writing. Consider, for example, the writer Russell Hoban's observation that "the novelist is a shaman who is . . . offering his experience for the use of the rest of the tribe" (quoted in Winokur, 1990). Is writing indeed a mystical act, with famed novelists born with a silver pen in their hand?

Even though the writers themselves may still see this as the case, psychological research suggests that the highest levels of creativity might not be as mystical as once thought. The *Creative Cognition* approach adapted the methodology and concepts of cognitive psychology with the aim of advancing the scientific understanding of creativity (Ward, Finke, & Smith, 1999). In so doing, research from this approach has demonstrated that creative performers seem to possess the same processes (i.e., retrieval of existing structures from memory, simple

associations among those structures, etc.) as non-creative performers. Where they differ, however, is in the use and flexibility of these processes. Although these studies have been conducted in the laboratory, the creative problems that are presented to the participants are more open ended. Consequently, they may be more comparable to real life creativity. It has been recently suggested that there may even be distinct brain circuits that underlie many of these creative processes (Dietrich, 2004).

Another line of research that helps to demystify creativity is the expertise acquisition approach (Ericsson, 1996). This approach suggests that genius-level novelists, like geniuses in most domains, require 10 years of preparation in a domain of expertise to reach world-class expert-level status. Studies by Bloom (1985) and Hayes (1989) indicated that a decade of intensive preparation is necessary to become an international performer in a broader range of domains including chess, sports, and the arts and sciences. Gardner (1993) conducted an analysis of seven eminent creators and argued that the 10 years are not necessarily spent simply learning and following standard protocol, but rather actively experimenting and exploring. Therefore, it would seem that it takes 10 years to become not just an "expert" but a "world-class" expert. This result is fairly consistent across various domains of expertise.

However, it is a well known finding that expertise alone does not constitute creativity (Weisberg, 1999). In some cases, too much knowledge may actually hinder creativity (Frensch & Sternberg, 1989; Guilford, 1950; Schooler & Melcher, 1995). Along neurological lines, Dietrich (2004) has postulated that knowledge and creativity recruit different brain circuits, further suggesting that expertise and creativity are separate constructs.

Consistent with this, Simonton (2000) studied creativity as expertise acquisition. He analyzed 911 operas composed by 59 classical composers using seven measures of domain-relevant experience. Although expertise-acquisition did play a role in aesthetic success of the operas, some of the results were inconsistent with the expertise acquisition approach. In some instances, too much knowledge and expertise seemed to be detrimental to success, with the effects compensated for by "cross-training." His work suggests that domains which require creativity (such as music composition) may indeed require an initial amount of time to learn the "mechanics" of a field, but may also require a separate additional period of time in which the developmental nature may differ.

Taken together, the evidence suggests that for domains where creativity is required for world-class performance, expertise alone will not suffice. For instance, 10 years may be

enough for fields like chess, sports, medicine, and law where a consistent, technically proficient performance can launch the expert to greatness in those fields. However, fields that require high levels of creativity to make a major impact, such as in the arts and sciences, may be characterized by a different developmental trajectory (Simonton, 2000). Fans of Michael Jordan, for instance, are perfectly happy to see him produce the same exceptional performance night in and night out, whereas a painter, opera composer, scientist, or creative writer must constantly be changing their style and display enough creativity in each work so as to maintain audience interest (Martindale, 1990).

Therefore, attaining a certain level of expertise in a given domain gets you in the door and starts your career. It puts you on the playing field among others who have put in the time, effort, and commitment to building up the necessary expertise base. Yet to rise to the very top of a *creative* domain — to achieve true *greatness* — seems to require even more.

The conceptualization of distinct stages is consistent with recent research (Dietrich, 2004; Subotnik, 2000, 2004a, 2004b). Dietrich makes a distinction between insight and implementation, pointing to the great length of time that can pass between the moment the scientist or artist experiences an insight and the point in which that insight is actually realized. Subotnik claims that beyond the level of expertise exists the realm of elite talent, or what she calls scholarly productivity or artistry (or what we in this paper refer to as *greatness*). Key personality, ability, and skill factors become increasingly or decreasingly important in the course of the transition from expertise to greatness (Subotnik, Jarvin, Moga, & Sternberg, 2003). This stage, which lies beyond expertise, is where unique and everlasting contributions to a field are made. A recent study lends support to three distinctive stages of creative development (from abilities to competencies, from competencies to expertise, and from expertise to scholarly productivity or artistry) in the domain of music (Subotnik & Jarvin, 2005). This study conducted over 80 interviews with top music conservatory students at different stages of their musical training. They found that different factors were important at each stage. For instance, to go from competency to expertise required factors such as continued opportunity for instruction with an emphasis on technical proficiency. However, to go from expertise to scholarly productivity or artistry, creative skills and personality characteristics such as charisma became more important. Also of importance were learning how to network and to "play the game" of the music industry.

If there is indeed a distinctive time frame *after* which world-class competence in a field is accomplished and *before* true greatness is achieved, then how long on average is this time frame? The research looking at career trajectories may allow us to estimate the answer. Simonton has conducted extensive research on the relationship between age and achievement (see Simonton, 1997, for a review). He generated a productivity curve, which predicts annual productivity as a function of career age. This curve (which is based on an amalgamation of domains) shows that output begins in one's 20's, ascends to an optimum at some point near age 40, and then gradually approaches zero output. A breakdown of the arts shows the same form of the curve, but with a much sharper drop-off rate (Simonton, 1994). Simonton also looked at the first, best, and last contributions of scientists from a variety of scientific disciplines (1991a). It was assumed that the curves for productivity and quality would be quite similar according to the equal odds rule, which states that quality is a probabilistic function of quantity (Simonton, 1994). The curves for the sciences did indeed take the same form as the productivity curves, but were shifted slightly to the right. The majority of scientists made their first contribution to the field in their 30's, and made their best contribution in their 40's. The age of initial contribution for science may differ from the arts due to the age when creators start building their expertise base. Artists may be more likely to start when they are younger than scientists, which would have an effect on the age in which the first contribution to a field is made (Simonton, 1991b). Other researchers such as Dietrich (2004) have posited that differences in career trajectories and age trends across domains may be a result of the fact that the start of creativity coincides with the maturation of the prefrontal cortex and domains may differ as to their requirements for constant adaptation to a new set of rules.

The curves produced by Simonton display a common trend however, regardless of discipline. It seems to take *at least* 10 years to go from initial contribution in a field to the point when greatness is achieved (where greatness is defined as the point which productivity or quality peaks). Scientists took on average 10 years to peak, whereas artists took 20 years, but the point is that both still took a significant amount of time to peak. If this is true, as Simonton's work suggests, then there may be a need to expand the 10-year rule. There seems to be a significant period of time required to achieve greatness in a creative field *after* the first 10 years of intensive preparation is invested.

This brings us to the point of the current study. Using a large sample of contemporary fiction writers such as Stephen King,

Joyce Carol Oates, and Robert Olen Butler, the current study will investigate how long these writers took to produce their "masterpiece" once they had already started publishing (and presumably passed the expertise-acquisition stage).

In addition, the study will assess the average start and peak year for this sample, and will try to place these results in the context of those found in other domains. Simonton found that poets peak markedly earlier than novelists (Simonton, 1975, 1997) and poets produce twice as much of their lifetime output in their twenties as novelists do (Simonton, 1984). Kaufman and Gentile (2002) found that an early start is essential for success in poetry, but showed no such relationship with a novelist's career productivity or awards. An investigation of successful fiction writers might expect to see both later debuts and later peaks than a study of different types of writers. Therefore, novelists are worthy of study in their own right, and may deviate from the average curves found in the arts as a whole.

As already discussed, domains of human accomplishment that require creative products to achieve greatness may be more likely to require a significant period of time after expertise to achieve such creative greatness. The field of creative writing is a domain in which "(a) the pressure for both originality and intelligibility is intense, (b) the products are invariably multidimensional and configurational, (c) the output rate for those products must be correspondingly low and (d) the reactions from the public, critics, and colleagues are mostly undifferentiated, inconsistent, and unstable" (Simonton, 2000, p. 287). Therefore, the current investigation includes a sample of a domain that reasonably meets the criteria for a creative domain.

Most historiometric investigations of such questions as the "ten-year rule" — regardless of when they are carried out — use data on participants (i.e., Mozart and Van Gogh [Hayes, 1985]) from many years ago. Our goal was to instead select modern creators. Perhaps one of the biggest obstacles in doing such research is determining a person's "masterpiece." By its very nature, such selection is subjective; at worst, it is arbitrary. Prizes are often awarded for reasons other than merit (e.g., politics; see Friedman, 2001), and most encyclopedias prefer to refrain from a non-objective analysis of the facts. The current study uses a contemporary (i.e., most writers are still living) source where a "masterpiece" is indicated for each author, and a core body of experts made all decisions.

METHOD AND MATERIALS

We selected *The Salon.com reader's guide to contemporary authors (*Miller & Begley, 2000) as the informational source.

This volume contained biographies written by staff members of *Salon.com* for 225 modern writers (65 females, 160 males). Each entry contained biographical information, a chronological list of an author's works, and a selection of a "best work."

Although the selections of the "best works" were subjective, they were chosen through consistent standards and by appropriate experts (*Salon.com* has won numerous awards for its criticism, including from *Time, Newsweek,* and *U.S. News & World Report*). The use of a single volume as a general data source is encouraged in historiometric research (Simonton, 2003).

Data were collected on the following areas: a writer's year of birth, the year of their first publication, the year of their best work, the number of years separating the writer's year of first publication and year of best work, the number of both fiction and total works written (as of 2000), and, if applicable, year of death. Seven writers did not have a "best" work selected; these writers were excluded from the study. In addition, three writers had the "best" work published posthumously; these writers were also excluded.

RESULTS

There were 62 females and 153 males included in the sample. Pearson correlations were conducted between gender and age at first work, age at best work, and number of years. No correlation reached significance at $p < .05$.

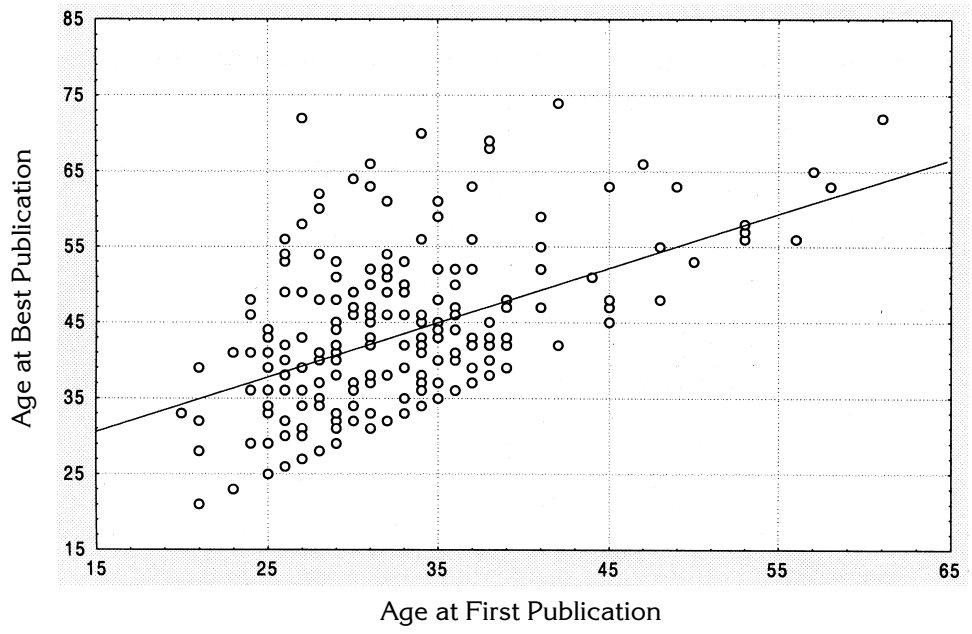
Of the 215 fiction writers studied, the oldest was born in 1892 and the youngest was born in 1968. The average year of birth was 1941. Pearson correlations were conducted between birth year and age at first work, age at best work, and number of years between first and best work. The correlations, all significant at $p < .01$, were as follows: age at first work ($r = -.34$), age at best work ($r = -.62$), and number of years between ($r = -.43$). In other words, authors who were born later were more likely to debut and peak younger, and the number of years separating their debut and peak was smaller than those authors who were born earlier. This suggests that perhaps as time progresses, the gap between first and best work decreases. This raises the issue of the importance of cohort, an issue that does not fit within the aims of this study, but at least deserves mention.

The mean for age at first publication was 32.8 years (SD = 7.3), with the youngest being 20 and the oldest being 61. The mean age for the "best" publication was 43.4 years (SD = 10.4), with the youngest being 21 and the oldest being 74. The average writer produced 10.0 works of fiction and 12.4 total works.

The average number of years between first publication and "best" publication was 10.6 years (SD = 9.3), with the fewest being zero, and the most being 45. To illustrate, Norman Mailer took 11 years to produce his best work, John Irving took 16 years, and Don DeLillo took 26 years. The relationship between first publication and "best" publication is represented graphically in Figure 1. The number of years between first and best work was significantly correlated with total number of works (r = .36) and total number of specifically fictional works (r = .34).

Some writers, such as Allan Gurganus (with *Oldest Living Confederate Widow Tells All*), William Gibson (with *Neuromancer*), and Joseph Heller (with *Catch-22*) had their first work also be their "best" work. If the 37 writers who fit this category were eliminated from the analysis, then the average number of years between first publication and "best" publication for the remaining 178 writers rises to 12.8 years (SD = 8.7). It must be noted though that the variability is particularly high. Twenty-three out of the 178 (12.9%) were between nine and 11 years when they produced their masterpiece, thirty-eight (21.3%) produced their masterwork between eight and 12 years after their debut publication, and 114 (53%) writers took 8 or more years to produce their masterpiece.

FIGURE 1. The relationship between age at first publication and age at best publication.



DISCUSSION

In our sample of writers, it took an average of 10.6 or 12.8 years (depending on whether you exclude those whose best work was also their first work) to produce a "masterpiece" of fiction once they had started publishing. This finding is in agreement with Raskin (1936), who found that for both eminent scientists and eminent writers almost exactly 10 years (10.2 and 10.1, respectively) separated the "age at first production" and the "age of greatest production".

Our findings are also consistent with Simonton's (1997) results that it takes at least 10 years on average for creators in a wide variety of disciplines to peak. If anything, our mean is lower than what has been reported for novelists. According to Simonton (1997), the average peak year for novelists is 27.1 years into their career (20.1 for poets).

What could account for our lower mean? Simonton tended to use writers who are deceased, and whose "best" work has solidified. Therefore, it is probable that the average novelist in our sample has much creative potential yet to be realized — even after a work has been dubbed the "best." Since our sample included contemporary writers, mostly still living, there is still a good chance that the writer's "best" work has yet to been produced, which would only increase our overall mean.

Another aim of the present study was to assess the average start and peak year for our sample of fiction writers. The average age in which any writer in our sample produced their first work is 32.8 years. The average age at which any writer in our sample produced their "best" work is 43.4. Again, these results are quite consistent with the abundant research of Simonton (1997), although they align more closely with the curves seen in the sciences, not the arts. The trajectory for poetry, however, tends to align more closely with that of the arts in general. This discrepancy between poets and novelists further supports the justification for looking at data on solely novelists.

It cannot be ignored, however, that tremendous variability exists in the current study. The first and best work was the same thing for 17% of the writers in our sample. Even when these writers are excluded from the study, the variability decreases, but still remains significant. As our correlational analysis demonstrated, the gap between first and best work tended to be greater for those who were more productive (i.e., had more total works). This finding is consistent with what Simonton (1997) has shown for both scientists and composers. Therefore, productivity may be an important individual difference variable that contributed to the high variability in the study. Nonetheless, the high variability certainly is a weakness of the study, and further work is needed on samples that may be more consistent.

Another weakness of this study is that we were unable to ascertain how long it took each writer to publish their first work once they started building their expertise base. As a result, we can only assume that the majority of writers in our sample went through the necessary years of expertise acquisition before their first published work, however long this time frame was.

In one sense though, our assumption is reasonable if one looks at the current state of affairs of creative writing education in America. Most children these days are being taught grammar and are given creative writing assignments as early as Elementary school (*Standards for the English/Language Arts*, 1996). Therefore, even though the youngest age at which a writer in our sample published their first book was 20, it is certainly plausible that they started writing creatively at age 10.

In another sense, though, it is quite possible that writers might require *less* time for expertise acquisition than other domains. It has been suggested by Dietrich (2004) and alluded to by the case studies of Gardner (1993) that the greater the knowledge base of a domain, the more formal knowledge is required for truly innovative work within it. Creative writing may depend more on emotional insight and the ability to combine words in a way that expresses the story to the audience than it does on drawing on a domain-specific expertise base. Consistent with this idea, a study of 120 classical composers suggested that the most prolific and acclaimed composers were those who required less time to attain the mastery necessary for creative achievement (Simonton, 1991b).

Nonetheless, in order to more solidly claim that there is a distinct division in career trajectories between the expertise-acquisition stage and the creative contribution stage, future studies should attempt to partition the development of the creator into the expertise-acquisition stage and the creative-expertise acquisition stage in order to determine the length of time for both independently. As it stands, the current study can only provide tentative evidence that the creative-expertise acquisition stage is significantly different than the expertise-acquisition stage in modern fiction writers.

In the introduction we asked specifically how many years it might take on average for a creator to achieve eminence once they have acquired the necessary expertise base. Since the variability was so high in our study, we cannot conclusively say that it takes 10 additional years. However, the results of this study have shown to be consistent with other research. If further studies in a variety of different creative domains repli-

cate our findings, and properly assess onset of expertise acquisition, it may someday be necessary to distinguish a "second ten-year rule" from the original "ten-year rule".

Regardless of the time frame however, it seems that the expertise acquisition stage is a necessary one (even if it isn't sufficient). It has been argued quite persuasively (Scardamalia & Bereiter, 1991) that many of the skills required to become an expert in literature (i.e., constructing a problem representation, goal setting, planning, etc.) are also required of any task in which people are trying to extend themselves or to achieve a novel or superior result.

Overall, this study makes a contribution to understanding the lifespan development of creativity in its most modern form, and will hopefully fuel future research using contemporary data in other domains of expertise. This study indicates that at least for novelists, those who feel inspired by a muse may have to take at least as long to achieve eminence in a creative domain as everyone else.

REFERENCES

BLOOM, B. S. (Ed.) (1985). Developing talent in young people. New York: Ballantine Books.

DIETRICH, A. (2004). The cognitive neuroscience of creativity. *Psychonomic Bulletin and Review, 11,* 1011-1026.

ERICSSON, K. A. (Ed.). (1996). *The road to expert performance: empirical evidence from the arts and sciences, sports, and games*. Mahwah, NJ: Erlbaum.

FRENSCH, P. A., & STERNBERG, R. J. (1989). Expertise and intelligence thinking: When is it worse to know better. In R.J. Sternberg (Ed.), *Advances in the psychology of human intelligence*, (Vol. 5, pp. 157-188). Hillsdale, NJ: Erlbaum.

FRIEDMAN, R. M. (2001). *Politics of excellence.* New York: Henry Holt.

GUILFORD, J. P. (1950). *Creativity*. American Psychologist, 5, 444-454.

HAYES, J. R. (1989). *The complete problem solver* (2nd ed.). Hillsdale, NJ: Erlbaum.

KAUFMAN, J. C., & GENTILE, C. A. (2002). The will, the wit, the judgment: The importance of an early start in productive and successful creative writing. *High Ability Studies, 13*, 115-123.

MARTINDALE, C. (1990). *The clockwork muse: the predictability of artistic change*. New York: Basic Books.

MILLER, L., & BEGLEY, A. (2000). *The Salon.com reader's guide to contemporary authors*. New York: Penguin.

PIIRTO, J. (1998). *Understanding those who create* (2nd ed.). Scottsdale, AZ: Gifted Psychology Press.

RASKIN, E. A. (1936). Comparison of scientific and literary ability: A biographical study of eminent scientists and men of letters of the nineteenth century. *Journal of Abnormal and Social Psychology, 31*, 20-35.

SCARDAMALIA, M. & BEREITER, C. (1991). Literature expertise. In K. A. Ericsson & J. Smith (Eds.), *Toward a general theory of expertise* (pp. 172-194). Cambridge, UK: Cambridge University Press.

SCHOOLER, J. W., & MELCHER, J. (1995). The ineffability of insight. In S.M. Smith, T.B. Ward, & R.A. Finke (Eds.), *The creative cognition approach*, (pp. 97-133). Cambridge, MA: MIT Press.

SIMONTON, D. K. (1975). Age and literary creativity: A cross-cultural and transhistorical survey. *Journal of Cross-Cultural Psychology*, *6*, 259-277.

SIMONTON, D. K. (1984). *Genius, creativity, and leadership: Historiometric inquiries*. Cambridge, MA: Harvard University Press.

SIMONTON, D. K. (1991a). Career landmarks in science: Individual differences and interdisciplinary contrasts. *Developmental Psychology*, *27*, 119-130.

SIMONTON, D. K. (1991b). Emergence and realization of genius: the lives and works of 120 classical composers. *Journal of Personality and Social Psychology, 61*, 829-840.

SIMONTON, D. K. (1994). *Greatness: Who makes history and why*. New York: Guilford Press.

SIMONTON, D. K. (1997). Creative productivity: A predictive and explanatory model of career trajectories and landmarks. *Psychological Review, 104,* 66-89.

SIMONTON, D. K. (2000). Creative development as acquired expertise: Theoretical issues and an empirical test. *Developmental Review*, *20*, 283-318.

SIMONTON, D. K. (2003). Qualitative and quantitative analyses of historical data. *Annual Review of Psychology, 54*, 617-640.

STANDARDS FOR THE ENGLISH/LANGUAGE ARTS: *A Project of the International Reading Association and the National Council of Teachers of English* (1996). Newark, DE & Urbana, IL: IRA & NCTE.

STERNBERG, R. J. (1998). *Abilities are forms of developing expertise. Educational Researcher*, *27*, 11-20.

SUBOTNIK, R. F. (2000). Developing young adolescent performers at Julliard: An educational prototype for elite level talent development in the arts and sciences. In C.F. Van Lieshout & P.G. Heymans (Eds.) *Talent, resilience, and wisdom across the lifespan* (pp. 249-276). Hove, UK: Psychology Press.

SUBOTNIK, R. F. (2004a). Transforming elite musicians into professional artists: A view of the talent development process at the Julliard School. In L. V. Shavinina and M. Ferrari (Eds.) *Beyond knowledge: Extra cognitive aspects of developing high ability* (pp. 137-166). Mahwah, NJ: Erlbaum.

SUBOTNIK, R. F. (2004b). A developmental view of giftedness: From being to doing. *Roeper Review*.

SUBOTNIK, R. F., JARVIN, L., MOGA, E., & STERNBERG, R.J. (2003). Wisdom from gatekeepers: Secrets of success in music performance. *Bulletin of Psychology and the Arts*: *4*, 5-9.

SUBOTNIK, R. F., & JARVIN, L. (2005). Beyond expertise: conceptions of giftedness as great performance. In R.J. Sternberg & J.E. Davidson (Eds.), *Conceptions of giftedness*, *2nd ed* (pp. 343-357). Cambridge, UK: Cambridge University Press.

WARD, T. B., SMITH, S. M., & FINKE, R. A. (1999). Creative cognition. In R. J. Sternberg (Ed.), *Handbook of Creativity*, (pp. 189-212). Cambridge University Press.

WEISBERG, R. W. (1999). Creativity and knowledge: A challenge to theories. In R.J. Sternberg (Ed.), *Handbook of creativity* (pp. 189-212). Cambridge: Cambridge University Press.

WINOKUR, J. (1990). *Writers on writing*. Philadelphia: Running Press.

AUTHOR NOTE: Please address all correspondence to James C. Kaufman, Learning Research Institute, California State University at San Bernardino, Department of Psychology, 5500 University Parkway, San Bernardino, CA 92407. E-mail: jkaufman@csusb.edu.

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