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Friedlander's Book Is Brilliant, but Sometimes Misunderstands Ericsson: Ericsson's Descendants Consider Aptitude and LT-WM

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Abstract

We note that a book about expertise needs by its nature to be inclusive with respect to the theories and frameworks considered. We think Ericsson's views are often oversimplified or misunderstood by his critics, and although the present book does a great job for the most part, there are some places we take issue with. We point to the importance of Friedlander's discussion of "gatekeeping" and "niche picking" and suggest that human biases can make a trait appear to be an aptitude or exaggerate the effect of an aptitude that otherwise would fade with time. We explore the case of the "relative age effect" which is clearly not an aptitude in the traditional sense yet behaves like other aptitudes described in the book. Finally, we are critical of the discussion of long-term working memory theory, which in our view was not correctly understood. Despite these critical thoughts, we are excited about the book and think it will provide the impetus for new researchers to enter the field and perhaps take up old arguments.

Keywords

talent, aptitude, long-term working memory, ability, practice

The field of expertise fundamentally deals with human possibility. Friedlander (2024) does an impressive job bringing together research on factors predicting high achievement. She proposes multifactorial models of expertise incorporating many potential contributing factors. Friedlander also provides a balanced review of Ericsson et al.'s (1993) position ("everything is mediated by practice") alongside critics' perspectives. Her inclusive approach to the material and highlighting of diverse views about expertise and talent is important for students entering the field; understanding human possibility requires considering *all* possibilities.

Nonetheless, when it comes to multifactorial approaches our contrarian view resembles Ericsson's. Although Ericsson's audacious position denied the existence of talents and aptitudes except for height, body size, and eyesight, his more important point is that scientists must go beyond showing that traits *correlate* with expert performance and uncover causal mechanisms. He argued that practice causally improves performance and that many apparent aptitudes may be practice quality or practice quantity in disguise (Ericsson et al., 1993). Friedlander notes that practice leaves substantial unexplained variance and identifies abilities that still predict performance among highly elite performers. However, when Ericsson's critics point out that his theory is unfalsifiable, the same critique frequently applies to their own theories.

Diverse human characteristics predict expertise in different domains: practice time, feedback quality, intelligence, openness to experience, et cetera. However, evidence that traits are *necessary* for expertise is less clear. If trait X is correlated

with achievement, X didn't necessarily cause high achievement. Friedlander raises important underexplored alternatives that potentially support Ericsson's contention that practice time and quality underpin these correlations:

(1) **Niche Picking.** Friedlander emphasizes the importance of "niche picking" (Roberts & Nickel, 2017): People select things that interest them and that they succeed at, which preserves related traits. Our early accomplishments suggest we are talented and should continue. Accomplishment also draws reinforcing praise and perhaps commitment from others around us to support our development.

(2) **Gatekeeping.** She also describes "gatekeeping": keeping out people seen as untalented. Mentors may match traits they value and reward people "like them." For example, openness to experience may not be necessary for artistic or scientific achievement, but it means you fit with the people already in those domains. Conservative underrepresentation in science may partly stem from openness being negatively associated with conservatism (Osborne & Sibley, 2020), so niche picking and role-model finding discourage entering those fields.

The case of the relative age effect shows how niche picking and gatekeeping can produce a high correlation between success and an "aptitude." Barnsley et al. (1985) found that many elite athletes are born in the months that make them the oldest in their cohort (Musch & Grondin, 2001). Relative age also plays a significant role in leadership, predicting membership in the U.S. Congress (Muller & Page, 2016). Academic achievement across subjects including placement in gifted or remedial programs, school truancy, and grades are also tied to birth month (Cobley et al., 2009). Is being born in the fall an "aptitude" that contributes to success? In a broad sense yes, but it probably occurs through gatekeeping. No one should take seriously the idea that being born in October provides you with an *innate* aptitude advantage, yet—like several aptitudes reviewed in the book—it is implicated in a wide range of abilities and areas of expertise.

An additional concern with the book is the framing of Long-Term Working Memory (LT-WM; Ericsson & Kintsch, 1995). Some clear theoretical distinctions were lacking, particularly in separating LT-WM from skilled memory theory (Chase & Simon, 1973), chunking, and template theories. The book frames LT-WM as merely a mnemonic technique for storing large amounts of meaningless information using retrieval structures. However, the use of mnemonics is half of Chase and Ericsson's (1982) skilled memory theory, not LT-WM. Experts' recognition of familiar patterns is also part of skilled memory theory, and in the book is described as "chunking" and not part of the theory. Chase and Simon (1973) saw chunks as long-term memory representations that were maintained in active short-term (working) memory, not directly stored in long-term memory; proposing rapid storage in long-term memory was skilled memory theory's contribution. LT-WM further adapted these mechanisms to explain how experts learn information in their domain of expertise—that is, not meaningless information, but relevant information like medical doctor's memory for symptoms and how skilled readers recall coherent text. We reviewed many additional aspects of LT-WM theory and its cousin template theory elsewhere (Adams & Delaney, 2022; Ericsson & Delaney, 1998), including in this journal (Delaney, 2018).

The current portrayal of Chase and Ericsson's (1982) digit-span studies may also give an unfair impression of SF's uniqueness. Admittedly, SF's knowledge of track times was unusual and shaped his encoding strategy (and he was a smart student at a highly selective university, Carnegie Mellon), but these facts do not undermine the broader claim that substantial memory improvements are attainable through deliberate practice. Another participant (DD) achieved comparable gains, and a third participant who withdrew still increased her span to 18 digits after 100 hours of training. The difference between her and SF and DD was not effort, but continued reliance on short-term memory to maintain retrieval cues instead of developing retrieval structures to support rapid and reliable encoding and retrieval of chunked information. Kliegl et al. (1987) report additional participants with average digit spans who were trained to use the method of loci in combination with a domain-

specific knowledge base (historical dates or digit–noun pairs). Consistent with skilled memory theory, they also achieved exceptional memory performance as typical adults via meaningful encoding, stable retrieval cues, and extensive practice.

Ericsson's theories can be difficult to fully understand. A non-native English speaker, he favored lengthy sentences, sometimes contradicted himself, and didn't always spell out his thinking completely. Perhaps a second edition of this important book will strengthen the presentation of LT-WM theory and expand Ericsson's anti-talent view, or perhaps the book itself will serve as a catalyst for making these theories irrelevant to modern understanding. Only time will tell.

Declaration

The authors declare that there are no personal or financial conflicts of interest regarding the research in this article.

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References

Adams, R. L., & Delaney, P. F. (2022). Long-term working memory and language comprehension. In J. W. Schwieter & Z. (E.) Wen (Eds.), The Cambridge handbook of working memory and language (pp. 98–119). Cambridge University Press. https://doi.org/10.1017/9781108955638.009

Barnsley, R. H., & Thompson, A. H. (1988). Birthdate and success in minor hockey: The key to the NHL. *Canadian Journal of Behavioural Science*, 20, 167–176. https://doi.org/10.1037/h0079927

Barnsley, R. H., Thompson, A. H., & Barnsley, P. E. (1985). Hockey success and birthdate: The RAE. Canadian Association for Health, Physical Education, and Recreation, *51*, 23–28.

Chase, W. G., & Ericsson, K. A. (1982). Skill and working memory. *Psychology of Learning and Motivation, 16*, 1–58. https://doi.org/10.1016/s0079-7421(08)60546-0

Chase, W. G., & Simon, H. A. (1973). Perception in chess. *Cognitive Psychology*, *4*(1), 55–81. https://doi.org/10.1016/0010-0285(73)90004-2

Cobley, S., McKenna, J., Baker, J., & Wattie, N. (2009). How pervasive are relative age effects in secondary school education? *Journal of Educational Psychology, 101*(2), 520–528. https://doi.org/10.1037/a0013845

Delaney, P. F. (2018). The role of long-term working memory and template theory in contemporary expertise research. *Journal of Expertise, 1*(3), 155–161.

Ericsson, K. A., & Delaney, P. F. (1998). Working memory and expert performance. In R. Logie & K. J. Gilhooly (Eds.), Working memory and thinking (pp. 93–114). Erlbaum.

Ericsson, K. A., & Kintsch, W. (1995). Long-term working memory. *Psychological Review, 102*(2), 211–245. https://doi.org/10.1037//0033-295x.102.2.211

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100*(3), 363–406. https://doi.org/10.1037/0033-295X.100.3.363

Friedlander, K. J. (2024). *The psychology of creative performance and expertise.* Routledge.

Kliegl, R., Smith, J., Heckhausen, J., & Baltes, P. B. (1987). Mnemonic training for the acquisition of skilled digit memory. *Cognition and Instruction, 4*(4), 203–223. https://doi.org/10.1207/s1532690xci0404_1

Muller, D., & Page, L. (2016). Born leaders: Political selection and the relative age effect in the US Congress. *Journal of the Royal Statistical Society Series A: Statistics in Society*, *179*(3), 809–829. https://doi.org/10.1111/rssa.12154

Musch, J., & Grondin, S. (2001). Unequal competition as an impediment to personal development: A review of the relative age effect in sport. *Developmental Review, 21*(2), 147–167. https://doi.org/10.1006/drev.2000.0516

Osborne, D., & Sibley, C. G. (2020). Does openness to experience predict changes in conservatism? A nine-wave longitudinal investigation into the personality roots to ideology. *Journal of Research in Personality, 87*, Whole No. 103979. https://doi.org/10.1016/j.jrp.2020.103979

Roberts, B. W., & Nickel, L. B. (2017). A critical evaluation of the neo-socioanalytic model of personality. In J. Specht (Ed.), Personality development across the lifespan (pp. 157–177). Elsevier Academic Press. https://doi.org/10.1016/B978-0-12-804674-6.00011-9

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