“some being rewarded for conscientiousness only at home, others only at work, others both at work and at home, others neither at work nor at home” (p. 515), inter-individual correlation between behaviors will decline over time, and alas, the personality structure will change. This may well be how the change happens, but it fails to explain why some people are sensitive to reward only at home, others both at work and home, and yet others only at work or in some other context. In other words, we would have to dig deeper and come up with a yet another theory of personality in order to explain the intra-individual differences in reward structures.

In sum, Baumert and colleagues touch upon a number of important issues related to how to improve our current understanding of human personality. Nonetheless, we remain skeptical of the underlying assumption of the article that there are no independent factors that can operate unconditionally outside of the given context and that a person’s behavior cannot be consistent across diverse situations and time (Mendoza-Denton, Ayduk, Mischel, Shoda, & Testa, 2001; Shoda & Mischel, 2000). From a technical point of view, this idea presumes that moderator effects and interactions are always more powerful than the main effects themselves. However, the relevant literature demonstrates exactly the opposite—moderator and interaction effects are extremely difficult to establish, and even more difficult to replicate (Allik, de Vries, & Realo, 2016; Baron & Kenny, 1986; Chaplin, 1991; McClelland & Judd, 1993). This is probably the reason why a generalized approach has produced many important results for consequential outcomes (e.g., educational attainment, health, life expectancy, or a tendency to be involved in accidents) of personality (Ozer & Benet-Martinez, 2006), while contextualized or “If… then …” approaches have produced very few. The core assumption that individuals are characterized by qualities that are relatively invariant across situations and time is not only the most plausible but also one that has been very productive so far.

The Search for a Bridge: Idiographic Personality Networks

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Abstract: Baumert and colleagues call for the use of research on intraindividual personality processes to understand personality structure and development but do not provide a clear path forward. We argue that research using idiographic personality networks represent one avenue of integration of research on personality processes, structure, and development. Idiographic networks conceive of personality as unique combinations of relationships between psychological processes, including behaviors, emotions, motivation, and affect. To demonstrate, we provide a brief example of the utility of idiographic personality networks in research on personality processes, structure, and development. Copyright © 2017 European Association of Personality Psychology

We agree with Baumert and colleagues that the future of personality science is the integration of research on personality structure, processes, and development. However, we found their discussion on how this can be achieved was frustratingly vague. Specifically, although the authors discussed the costs of aggregation across different levels of Cattell’s data box and the importance of intraindividual processes in understanding personality structure and development, they offered few specific ways for how to move such intraindividual research forward. We believe that the future of such research lies within an idiographic—person centered—framework. There have been many calls for increased research in intraindividual personality processes (Cervone, 2005; Molenar, 2004), as well as agreement that the identification of these patterns cannot be captured using simple interindividual designs. However, how to select what is measured, how often (when) to measure it, where to measure it, and how to model it once data are collected are often not discussed.

We feel that idiographic approaches to personality assessment can facilitate the integration of structure, process, and development. The current article only hinted at these techniques, which we remedy this by providing a brief example on how idiographic analysis can inform studies of intraindividual processes. We argue that such an approach allows for minimal aggregation of the data box while retaining a degree of parsimony and conclude with the implications of idiographic techniques in the study of personality processes, structure, and development.

Idiographic personality networks provide a way to assess how personality variables are related to one another within a person. Consider the personality networks in Figure 1 for two subjects, assessed at two time points across two years.1 Each network is built using Experience Sampling (ESM; Larson & Csikszentmihalyi, 1983) data collected on a single individual across a two-week period. Network nodes represent self-reported behavioral, emotional, motivational, and

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1The idiographic personality networks were constructed using the procedure outlined by Wild et al. (2010). For a more detailed description, see Beck and Jackson (2017a). R code for constructing these networks is available on the first author’s GitHub.
situational states. The colored nodes are personality items, while the white nodes are other emotional, motivational, or situational states. The edges (or paths) between nodes are regularized partial contemporaneous correlations (Epskamp, Waldorp, Mõttus, & Borsboom, 2016; Wild et al., 2010), which signify concurrent patterns in the participants’ responses—the tendency for states to occur together. Together, this means that each network aggregates across occasions and time but not behaviors or people.

What can idiographic networks say about personality processes? First, these networks provide a direct indicator of correspondences between behaviors and underlying mechanisms (Epskamp et al., 2016). For example, in Subject 1’s personality network, we see strong associations between feelings of connection to others and other states, including emotions (e.g., “happy”), behaviors (e.g., “outgoing”), and motivations (e.g., “around others”). Second, networks highlight interindividual differences in intraindividual personality structure. Subject 2’s motivation to work on academics repels feelings of connectedness to others, while Subject 1’s network suggests no such tension. Thus, Subject 2 may struggle to balance academic and social commitments. Subject 1’s academic motivation is related only to being more quiet and relaxed, while Subject 2’s academic motivation is related to increased worry and decreased kindness. This opens up new sets of questions: are specific motivational-behavioral links related to positive or negative outcomes? Does the relationship between psychological states change when in different situations (e.g. academic) for different people?

Figure 1. Contemporaneous personality networks for two subjects’ ESM responses collected one year apart. The colored nodes represent personality items, while the white nodes represent behavioral, emotional, and motivational states. Positive associations (edges) are solid lines, while negative associations are dashed lines. [Colour figure can be viewed at wileyonlinelibrary.com]
For personality structure, idiographic networks underscore how interindividual differences in intraindividual personality structure may explain interindividual structure. Comparing the congruence of idiographic networks with a population network model reproduces a well-known observation: population models may have little bearing on the individual (i.e. not all people evidence a Big Five structure). In our sample, congruence between idiographic networks and the population network was sizeable ($M = 0.54$). For wave 1, Subjects 1 ($r = 0.61$) and 2 ($r = 0.64$) in Figure 1 both exhibit strong congruence, but there are also considerable individual differences in congruence across all of our sample ($SD = 0.26$, range $-0.28$ to 0.81). Together, such interindividual differences in intraindividual personality structure evidence what Baumert and colleagues termed “weak emergence”—macroscopic patterns that emerge out of microscopic processes. But there are substantial individual differences in idiographic structure, which opens new avenues for exploration. Who are the people who fit the population model well and who are those that do not?

For personality development, personality networks can track changes in intraindividual personality structure that may not be picked up by typical nomothetic measures of personality (c.f. Beck & Jackson, 2017b). For example, both Subjects profiles of ESM composite scores were stable over 2 years ($r_{S1} = 0.75; r_{S2} = 0.65$), but only Subject 1’s personality network ($r_{S1} = 0.66; r_{S2} = 0.32$) was stable over the same time period—that is, Subject 1’s (but not Subject 2’s) stability was reflected both in the network and the aggregate of their behavior. This observation generates new questions about the processes of development. What differentiates people with different patterns of behavioral and network stability? These findings index changes in the relationship among variables, a type of change that is rarely explored in personality development (see Beck, Jackson, and Condon (2017) for an exception).

In sum, we agree with Baumert and colleagues that networks are valuable tools for personality scientists, perhaps particularly in the generation of hypotheses in the empirical study of personality processes, structure, and development. Moreover, we agree that there is opportunity to examine these three pillars of research simultaneously. A network perspective personality does not mean throwing out decades of personality research on nomothetic approaches but does mean reframing the language we use to talk about personality traits as well as the explanations of why they occur. We challenge personality researchers to go beyond Baumert and colleagues’ theoretical review and implement designs capable of tackling personality structure, processes, and development simultaneously.

**Profitable Interplay between the Study of Human and Nonhuman Personality**

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Abstract: There is growing interest in individual variation in non-human animals. Research in this area from an evolutionary and ecological perspective seeks to understand the forces that generate and maintain consistent individual differences in behavior. There are both important points of contact and differences between research on non-human animals and the framework for studying human personality in Baumert and colleagues’ article. In particular, we argue that the study of individual variation in both humans and non-human animals can benefit from further consideration of the ways in which our subjects influence their environments. Copyright © 2017 European Association of Personality Psychology

Our goals in this brief commentary are to explain why researchers studying non-human animal behavior are interested in personality and to convince you that viewing the topics covered by Baumert and colleagues from our perspective might have some unexpected insights for researchers studying personality in humans.

The growing literature on “animal personality” is interested in the underlying mechanisms and consequences of behavioral variation among individuals of the same species. Whatever the particular phenomena being investigated (behavioral syndromes, coping styles, etc.), it is appreciated that individuals behave differently from each other and that individuals often retain their behavioral type over time, even after controlling for other factors we know influence behavior such as sex and age.

Within-individual consistency and among-individual variation in behavior raise deep questions for the study of behavior from an evolutionary perspective, such as the factors that limit behavioral plasticity and the evolutionary forces that maintain heritable behavioral variation within populations. Other questions pertain to the ecological and evolutionary consequences of consistent behavioral variation—e.g., for biological invasions, speciation, predator–prey dynamics—because these topics were traditionally studied by assuming that individuals of the same species were pretty much interchangeable (Sih, Bell, & Johnson, 2004; Sih, Bell, Johnson, & Ziemb, 2004).

The phenomena are studied by presenting individual animals with a stimulus (e.g., a potential mate or a competitor) and recording their behavioral responses. After a few