The Five-Factor Model Describes the Structure of Social Perceptions

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Commentary on J. Block: "The Five-Factor Framing of Personality and Beyond: Some Ruminations"

My graduate school cohort was the first admitted into a newly merged social and personality psychology program. That merger, and the combination of perspectives that I was exposed to, turned out to be an important part of my intellectual identity and professional development. And along the way, it produced a number of enlightening exchanges when the formerly separate areas were compelled to make serious efforts to figure each other out.

I vividly remember one particular exchange that happened in our weekly graduate student brownbag.[1] Two graduate students who had entered the merger from the social psychology side stood up to present an ambitious idea for a research project. In their reading of the social perception literature, they had become dissatisfied with studies that examined dimensions of social perception on an *ad hoc* basis. They wanted to embark on a project to identify the fundamental dimensions of social perception used by lay perceivers.

A hand came up from somebody who'd come from the personality side. Could you just have people make ratings on the Big Five?

No, no, they replied. We aren't trying to study personality, we're interested in social perception.

As the meeting progressed, they presented a broad agenda for achieving their goal. They needed to come up with some way to get a representative sample of the terms and concepts ordinary people use to describe each other in everyday social perception. Then they would ask subjects to use those concepts to make ratings of various target persons, and they would factor the results.

More hands came up. More suggestions (actually the same ones) were offered and dismissed (for the same reasons). Frustration built on both sides of the podium, as everyone became convinced that the other side wasn't listening to them.

If you think I am a personality psychologist sharing this anecdote as a reason to point and laugh at the silly social psychologists, you've got me exactly wrong. I held these two classmates in very high esteem and still do today, and both are now highly accomplished scholars. Rather, to me this is an illustration of what has gone awry with the way we study and talk about personality structure.

Jack Block begins his critique of the various models in the Five-Factor Framework by reviewing their historical origins. These modern structural models all trace their origins to the lexical hypothesis, which as Block observes, has served largely as a "motivating assumption" and a driver of a scientific agenda. The lexical hypothesis was used to identify the raw materials from which a structural model would be built: the set of person-descriptive concepts that have been encoded in natural language. Block raises a number of other concerns with the Five-Factor Model, but all of these other concerns follow after, and therefore at most compound, anything that is wrong or right about the assumptions and agenda of the foundational lexical hypothesis.

If I can be so bold as to offer a critique of Block's critique, I think he did not carry his foundational criticism far enough. My thesis is that we will never really understand the Five-Factor Model until we more fully come to grips with the scientific implications of the lexical hypothesis. According to the lexical hypothesis, natural-language trait terms encode what ordinary people observe about the people in their social milieu. Therefore,

the Five-Factor Model is first and foremost a model of social perception.[2] Everything that follows must account for this fact.

Trait Structure as Social Perception: An Early Failure to Launch

If some readers are tempted to dismiss this perspective before reading any further, I cannot blame them. The implications of this approach – viewing personality traits and personality structure as objects of social perception – were considered in the 1970s in a way that eventually led to a theoretical and empirical dead end and generated a lot of ill will along the way. The problem was that some researchers studying judgment processes became enamored of the errors they identified in artificial laboratory situations, and they adopted the position that these experimentally induced errors were representative of the quality of real-world personality perceptions (see Funder, 1987; 1995). Some went so far as to suggest that personality structure exists only as an illusion in the heads of perceivers (D'Andrade, 1965; Shweder, 1975) and that personality trait perceptions were largely or wholly the result of perceivers' biases (Nisbett & Ross, 1980). The all-in-your-head perspective was influential for a time, but it was ultimately disproven, and Block himself was an important voice in reining in the excesses of this position (e.g., Block, 1965; Block, Weiss, & Thorne, 1979; also see Kenrick & Funder, 1988, for a broader review).

Once sufficient evidence had been presented to show that there is some reality underpinning personality trait perceptions, many in personality psychology decided that the debate had endured well past the point of producing productive insights, and they turned their energies away from the debate and toward building a central paradigm for personality psychology. This work ultimately evolved into the Five-Factor Model, which has become a highly generative and integrative framework for the field. But an

unfortunate consequence of the inward turn has been that personality psychology has moved toward an opposite extreme. We have often proceeded as though our measurements of the traits and factors of the Five-Factor Model are an isomorphic representation of the external reality that exists in the bodies and behaviors of targets. Thus, recently McCrae and Costa (2008) wrote approvingly: "Trait psychologists routinely – and properly – ask people how sociable or competitive or irritable they are, and interpret the answers (suitably aggregated and normed) as meaning what they say" (p. 161).

Certainly it is true enough for practical purposes that in many research contexts we can interpret reported perceptions as more or less meaning what they say; but as a matter of basic science, a pragmatic "true enough" is not the same as true. An extraordinary amount of inferential machinery must be present to produce any trait perception, and the end result of this process contains a sizeable portion of variance that is not attributable to an objectively-reported external reality (Kenny, 1994; Srivastava, Guglielmo, & Beer, 2010). And although it may seem radical to some personality psychologists to suggest that the Five-Factor Model is a model of social perception, theorists have been saying for a long time that social perception is a central part of the story. For example, Saucier and Goldberg (1996) wrote, "The Big Five are dimensions of *perceived* personality" (p. 42; emphasis in original). D. W. Fiske (1994) noted that the Big Five are useful for "the analysis of how people perceive people and what words they use in formulating such perceptions" (p. 124), and he considered the factors themselves to be "interpretations or small generalizations from perceived behavior" (p. 123). Hogan (1996) defined the traits of the Five-Factor Model as "the terms that observers use to

describe actors" (p. 172). Buss (1996, 2009) proposed that humans have evolved difference-detecting adaptations to perceive and act upon important individual differences in others. Where all of these theorists depart from the radical constructivists is in believing that trait perceptions are built on real and coherent patterns of human behavior that exist outside of the heads of perceivers.

An analogy can be made to visual perception. If we ask people to tell us about the colors of stimuli, under many conditions we will get answers that correspond pretty well to the wavelengths of light striking the retina. But color perceptions have unique qualities and special relationships that do not purely reflect the extrahuman physical world (Palmer, 1999), and the perceptual processes that ordinarily help us perceive color can lead to errors under some conditions (e.g., Adelson, 1993). Scholars in visual perception have had no problem studying such inferential and constructive processes while still believing that the physical world exists and that color perceptions map it in some complex but meaningful way.

What would happen if we could do something analogous in personality perception? What if we go back, wipe the slate clean, and try to achieve some sort of understanding of the five factors as a model of social perceptions, recognizing that perceivers are actively making sense of the world but not fabricating their perceptions out of nowhere?

An Agenda for Understanding the Five-Factor Model

One of the consequences of taking perceptions seriously as perceptions is that it changes the agenda for explaining the five factors and their subordinate and superordinate traits, facets, aspects, and so forth. Most personality psychologists would stipulate that

although the study of personality perception is an interesting and worthy enterprise, if you want to *really* understand the Five-Factor Model (or any structural model of personality) you need to study underlying structures and processes in the persons who "have" traits. I propose that this is exactly backward. My assertion is this: It is an interesting and worthy enterprise to study the characteristics of persons who are reliably described as extraverted, agreeable, etc.; but if you want to really understand the Five-Factor Model, you need to frame your questions in terms of perception – and in order to avoid the dead ends of previous eras, you need to study perception in a way that accounts for the entire chain of causation from the neuropsychic bases of behavior in targets to the inferential processes by which perceivers perceive (as proposed by Funder, 1995). And if you want to answer the big-picture question "What is the point of the Big Five (or any structural model)?" – or to put it less colloquially, if you want to study the functions of traits or trait factors – you need to be clear about whose functions you are talking about.

Why Five? Why These Five?

Not long ago there was substantial interest in understanding where the five factors come from. Fiske (1994) put it succinctly: "Why 5, and not 3, 7, or 16? Why these five?" (p. 123). Notably, Fiske thought the answer would be found on the perceiver side. In a later volume collecting theoretical perspectives on the Five-Factor Model, this theme continued: Digman (1996), Saucier and Goldberg (1996), Wiggins and Trapnell (1996), Hogan (1996), and Buss (1996) all said we must pay at least some attention to a social-perceptual or relational perspective in understanding the five factors.

Only one perspective in that volume downplayed the role of perceptions – that of McCrae and Costa (1996), who later developed their views into Five-Factor Theory

(FFT; McCrae & Costa, 2008). FFT's stance on perception is one of isomorphic realism: trait perceptions simply record the existence of an external trait reality. Yet if this were the case, then – extending Block's argument about recovering the five factors using alternative procedures – it should be possible to recover the five-factor structure using procedures that do not rely principally on human perceptions. To my knowledge, this has never been done. Even structural analyses that are purportedly based on behavioral or genetic correlations have human perception centrally involved. For example, the behavioral Q-sort used by Funder and Sneed (1993) used items that were explicitly crafted to be psychologically meaningful to perceivers (see Funder & Colvin, 1991); and the genotypic correlations reported by Yamagata et al. (2006) were derived from human self-reports made using the NEO PI-R.

In fact – and I think there is a fundamental issue at stake here – I have a difficult time even imagining how one would go about recovering the five factors without involving human perceptions at some point. If the five factors exist outside of human perception, then an independent path to their derivation cannot begin by sampling the lexicon or any personality inventory that was written by humans to be answered by humans (whether selves, peers, or professional experts). How would we go about that crucial first step of selecting which behavioral tendencies to measure? I must confess to making an argument from ignorance here, but I have never heard anyone suggest a scheme for sampling the "units" of personality that does not somehow rely on human perception in some important way.

Additionally, FFT – notwithstanding its name – does not offer any answer to Fiske's question. Of 16 propositions in FFT, only one makes any mention of the five

factors, and it is a bare assertion of their existence. The other 15 propositions are logically independent of this assertion; if tomorrow the field of personality psychology got together and decided to recognize a 6th factor – say, for honesty (Ashton, Lee, & Son, 2000) or oddness/eccentricity (Watson, Clark, & Chmielewski, 2008) – not a single one of those other 15 propositions would need to be altered. To their credit, McCrae and Costa (2008) acknowledge as much: "This is the only postulate in which the Five-Factor Model is even mentioned; otherwise the theory could just as well be adopted by proponents of a three- or seven- or N-factor model" (p. 171).

Although they do not offer definitive answers, McCrae and Costa expend some effort discussing ways that evolutionary theory might help us understand where the five factors come from. They suggest, drawing in part on Buss (1996), that perhaps the five factors represent variations in five domains of adaptively significant behavior. In this sense, I disagree with Block that five-factor theorists ignore contemporary evolutionary thinking. But I would argue that previous theorists looking for functions have largely been looking in the wrong people.

Why five? Why these five? What are they good for? A roadmap to the answer has been in front of us all along. The lexical hypothesis tells us that the factor structure of natural-language person-descriptors reflects the aggregated social concerns of people in ordinary life. Amending McAdams's (1995) formulation slightly: traits are what people *want* to know when they get to know a person.[3] Thus, if we want to know what extraversion (or any trait or factor) "really" is and why it is in the Five-Factor Model, we should be asking, what good does inferring somebody's level of extraversion do for the

perceiver? Why do people care so much? What can perceivers do with their perceptions? In short, we must recognize that the functions of traits are functions for perceivers.

Thus, I view Block's list of "inadequacies" – his concerns about orthogonality, subjective analyst judgment in conducting factor analyses, and the shortcomings of linear, monotonic scaling of factors – to be fundamentally issues about how best to go about modeling the social concerns of perceivers. From my perspective, the integrity of the Five-Factor Model does not depend on questions like whether or not high but well-adapted conscientiousness has the same etiology as pathological rigidity. Instead, what matters is whether perceivers encode these attributes as categorically different phenomena or just as different degrees of the same thing, and whether the model accurately reflects this encoding. This is an important and, I believe, still unanswered research question, but one that is quite different from Block's.

The Core Features of Traits are Core Features for Perceivers

There have been 3 major approaches to trying to answer the question of where the five factors come from. A first is the search for bases in lower-level psychological processes, such as mapping extraversion onto reward sensitivity (see Denissen & Penke, 2008 for an overview of this approach). A second is the personality neuroscience approach, attempting to map traits onto biological variables, such as brain circuits, neurotransmitter systems, or genes (DeYoung & Gray, 2009). A third is the evolutionary approach, in which the five factors represent variations in domains of adaptively significant behavior (Buss, 1996, 2009; Hogan, 1996).

All of these approaches have led to important insights. However, I believe that the questions need to be reframed. These approaches cannot tell us about the core

psychological, biological, or functional features of trait factors – because trait factors are dimensions of perception. What they do is give us clues about the realistic bases for perceptions. The real question is, if a person is reward-sensitive or has a highly reactive dopaminergic system or is chronically striving to get ahead in social groups, what are the implications for a perceiver of that person?

Broadly speaking, personality traits and trait factors are perceivers' representations of temporally stable and cross-situationally coherent[4] patterns of thought, feeling, and behavior. So knowing a target's personality allows the perceiver to form probabilistic expectations about how the person will think, feel, or behave in future times or under novel circumstances. (This includes the special case of self-perception, where an individual forms expectations about the self.) For a social animal this is incredibly useful information, which may explain why we form these inferences quickly, automatically, and when necessary from very sparse or indirect information (e.g., Ambady, Hallahan, & Rosenthal, 1995; Borkenau & Liebler, 1992; Gosling, Ko, Mannarelli, & Morris, 2002; Levesque & Kenny, 1993; Uleman, Saribay, & Gonzalez, 2008).

A critical next task for social perception researchers who take traits seriously is to begin to map out the specific social concerns associated with traits and factors. Why do we, as human beings, have inferential machinery that is so attuned to drawing inferences that may be traced back to the activity of somebody else's neurotransmitters? Here I believe the functionalist maxim is crucial: perceiving is for doing. One way to think of trait perceptions is as perceived social affordances – "opportunities for acting, interacting, or being acted upon that others provide" (Zebrowitz & Collins, 1997, p. 217) – that are

persistent over time and across situations. So we should examine how a perceiver's actions depend on knowing a target's personality traits.

Higher levels in the hierarchy are likely to reflect families of interrelated concerns or broad themes; lower levels are likely to be more narrowly defined. The superordinate "Bigger Two," for which I prefer the names of agency and communion (Wiggins & Trapnell, 1996) or Hogan's (1996) concise "getting ahead" and "getting along," have clear adaptive significance for perceivers. For example, in order to successfully negotiate status hierarchies, individuals need to accurately perceive where they and others stand and then act in accord with this role, or else they face significant risks of punishments or unclaimed privileges (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006; Srivastava & Anderson, in press). And people are exquisitely sensitive to their level of acceptance in groups (Leary, Tambor, Terdal, & Downs, 1995; Srivastava & Beer, 2001), which serves critical survival functions (Baumeister & Leary, 1995). From a functional perspective, it would be incredibly useful for social perceivers to form realistic expectations about others' behavioral tendencies with regard to these two dimensions, so as to identify future opportunities for action. Intriguingly, there is evidence that perceivers are especially attuned to these higher-order dimensions and that such perceptions are linked to perceivers' behavioral systems. Saucier (in press) reported that social effects terms – attributes describing an individual's effect on others – have a two-factor structure that maps closely onto the Bigger Two trait superfactors. He proposed that the social-effects structure may be grounded in perceivers' systems for approach and avoidance. To put a biologistic spin on it, our brains' social-perceptual machinery may be both attuned and linked to our social-behavioral machinery.

At the level of the five factors, many existing process accounts can be reformulated to describe their social-functional significance for perceivers. Denissen and Penke (2008) characterized the Five-Factor Model as individual differences in motivational reactions to situations. For example, they propose that extraversion reflects the reactivity of the reward system in social situations (following Ashton, Lee, & Paunonen, 2002). Restating this from a perceiver's perspective, extraversion is a perception of how a target will respond to potentially rewarding social situations. Such perceptions afford opportunities to elicit responses from others, or to create incentives for others' behavior crafted to what they find rewarding. With regard to agreeableness, Denissen and Penke postulated that its core feature is a tendency to prefer cooperation over competition. Thus to a perceiver, agreeableness is a dimension of perception with clear strategic implications for future interactions that might involve shared interests or limited resources. Similar implications can be drawn for the other factors.

But factors and superfactors are not where social meaning typically resides, and just as the traditional search for core features has produced a multiplicity of conflicting answers (e.g., is extraversion general reward sensitivity, sensitivity to rewarding social attention, proactive sociability, or baseline positive affect?), the search for perceivers' core social concerns at the factor level may not lead to a single answer per factor. As Block notes, it is difficult to come up with single words or even short phrases that adequately capture the breadth of meaning of the five factors. The single-word trait terms encoded in language are probably closest to the level of abstraction that perceivers operate at most of the time (cf. John, Hampson, & Goldberg, 1991, for a more nuanced view). At lower levels of the hierarchy – aspects, facets, and especially individual trait

concepts – we will need to develop increasingly differentiated theories to account for the social concerns that these dimensions encapsulate.

Accuracy and Inaccuracy

If trait perceptions are based on the realities of behavior and are functional for perceivers, does that lead to a prediction that perceivers are always accurate? Not at all. Perceptions of Big Five traits contain considerable variance beyond social consensus (Srivastava et al., 2010) and people are not always good at reporting the behaviors that scientists might use as operational definitions of traits (Gosling, John, Craik, & Robins, 1998). Trait perceptions generated in the decidedly weird social situation of most psychological studies (i.e., reported as anonymous marks on a sheet of paper or clicks on a webpage, never to be seen by live human being, and with absolutely nothing contingent on how the subject responds) may "mean what they say" well enough for many investigators' practical purposes. But trait perceptions, whether made by the self or by others, can also depart meaningfully from objective accuracy in a variety of ways and for a variety of reasons (Robins & John, 1997; Vazire, 2010).

From a functionalist perspective, trait perceptions need not be "accurate" in the sense of corresponding to a scientist's operationalization of reality. Rather, perceptions are functional if they lead to actions that serve the perceiver's interests (Swann, 1984). For example, perceivers are more interested in discerning the agreeableness of higher-power others than that of lower-power others (Ames & Bianchi, 2008). If agreeableness is a perception of another's tendency to cooperate during resource conflicts, then others' agreeableness matters less when the perceiver has higher power than the target and can compel cooperative behavior or just take what is needed. Framing trait perceptions in

terms of their functions for perceivers can help clarify when and how the inferential machinery of social perception will be brought to bear on real-world social problems.

Conclusion

The five factors are dimensions of grounded social perception reflecting the social concerns of perceivers. Returning to the anecdote I began with, I take seriously the fact that two very smart colleagues independently imagined a research program to study the structure of social perception that looked an awful lot like the derivation of the Big Five. Certainly we can fruitfully study the psychological, biological, and functional features of people who are reliably perceived to be at different levels of various trait factors; but it is my firm conclusion that if we want to understand the Five-Factor Model more deeply, we must account fully for its origins in social perception. In this sense, the Five-Factor Model belongs as much in the family of models that social perception researchers have developed to account for the content of person perceptions, such as S. T. Fiske and colleagues' stereotype content model (Fiske, Cuddy, Glick, & Xu, 2002), as it belongs in the family of Allportian models of neuropsychic structures. The functions of traits are functions for perceivers, and a major frontier for researchers studying the structure of human-perceived traits is to figure out what those functions are.

Some Closing Remarks

The field of personality psychology needs more voices like Jack Block's.

Personality psychology, as a field, has a history of being the subject of reasonable critiques turned into unreasonable attacks, arguments that have been "more clever than true" (McAdams & Adler, 2006, p. 472). The period of crisis in the 1970s was probably an important contributor to the field's consolidation of a coherent and generative set of

models and research paradigms (Kenrick & Funder, 1988). But an unfortunate consequence, if I may take the liberty of offering a personal observation, has been a bit of a bunker mentality: a certain defensiveness and apprehension among my colleagues (often witnessed in more informal contexts) that the radical constructivist assailants are still lying in wait.

In order to avoid the pitfalls of groupthink, personality psychology needs thoughtful dissent from credible insiders. Throughout his career, Jack Block occasionally stepped back from a generative program of original research to serve that role. Having established his bona fides as someone who understood and respected the scientific importance of the study of human lives, he was in a unique position to challenge personality psychologists to think carefully about their models and assumptions.

In writing this piece, it was my hope to respond to Block's essay in the spirit of provocative challenge in which he wrote it. I believe that personality psychology needs to re-engage with the serious study of social perception in order to better understand the field's central paradigm. (For that matter, I believe at least as strongly that the field of social perception needs re-engagement from those who take seriously the realistic basis of personality.) But even for readers who disagree with me, I hope at least to have asked some questions that will be useful to clarify our understanding of personality.

Footnotes

1. Of possible historical interest: this group was called the Gordon Allport Society.

2. By "social perception" I mean perceptions where both the perceiver and the target are human beings. This includes self-perceptions, which are a special case where the perceiver and the target are the same person. It also includes ratings made by expert assessors.

3. This same analysis can be applied to Block's California Q-sort (CAQ) or to any expert-derived taxonomy. If natural-language trait concepts are what ordinary people want to know and communicate about each other, then the CAQ is what Block and his collaborators, guided by their best scientific judgment, thought it was important to know and communicate about people. As human perceivers of humans, their concerns had considerable overlap with laypersons, so we do find factors approximating the Big Five in the CAQ. But as expert psychologists, they were additionally focusing on things that ordinary perceivers don't pay attention to; hence the extra factors in the CAQ that aren't in the Big Five. For the same reason, I am not swayed by any apparently independent derivation of the five factors in any questionnaire or inventory data that relied on human beings for item generation. Such measures necessarily reflect the interests of the person(s) who generated the items.

4. I use the word "coherent" rather than "consistent" because historically the latter term has sometimes led to confusion. Traditional construct definitions of traits do not typically predict equal relevance to all situations (Johnson, 1997), and perceivers intuitively account for situational differences in complex and sophisticated ways when

forming trait perceptions (Kammrath, Mendoza-Denton, & Mischel, 2005). "Coherence" is meant here to suggest a meaningful pattern, rather than rigid invariance across situations.

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