The Structure of Social Effects: Personality as Impact on Others

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Abstract

Social-effect descriptors (like charming and annoying) register the individual's footprint on the social world. Highly prototypical social-effects terms in English were identified and factor-analysed in peer-ratings, with comparisons to the same procedures in self-ratings. Two internally replicated factors were highly interpretable. They reflect the extent to which a person is a source of pleasure to others, or alternatively is a source of pain to others. The factors are linked to hedonic principles and basic appraisal tendencies. Extension-correlation analyses indicated that variation in social-effects dimensions is represented diffusely in Big Five and six-factor measures, but corresponds more directly to variation in a Big Two personality structure that has previously been found to arise rather ubiquitously across cultures. Copyright © 2010 John Wiley & Sons, Ltd.

INTRODUCTION

No human language has yet been found to be lacking in numerous terms to describe people and the ways in which people differ. The terms for individual differences found in the natural language provide a starting point for building useful models and theories of how people differ. To help build such models, historically, personality psychologists have been intent on demarcating that subset of person descriptors most relevant to their own domain.

In selecting that subset of person descriptors relevant to personality psychology, two assumptions have been generally made, evident from at least the time of Allport (Allport & Odbert, 1936). The assumptions are that (a) development of strong theory would proceed from a focus on the most prototypical personality descriptors and (b) a focus on descriptors less prototypical of personality would be a distraction that might even interfere with reaching this goal. Coupled with these assumptions has been a strong reliance on self-report methods, partly because if personality is believed to inhere within the individual,

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therefore the individual might logically be the best expert on his or her own personality. The present paper does not adopt these commonplace assumptions. It focuses on a type of descriptor more naturally at home in informant data than in self-report.

SOCIAL EFFECTS

Norman (1967) identified three major classes of personality descriptors: Stable traits, temporary states and activities, and a grouping of social roles, relationships and effects. The latter broad class was broken by Norman into two subsidiary classes: Social roles and relationships, and social effects (for which he gave the alternative label 'social stimulus values'). English terms classified as social roles and relationships by Norman (1967) included *beloved, employed, famous* and *middle-class*. Norman's class of social-effects terms included *dangerous*, *humorous, impressive, lovable, pathetic* and *stunning*. In all, within a total body of 18 125 English person-descriptors Norman classified, 242 were classified as prime (relatively familiar) terms for social roles and relationships and 163 as prime social effects terms. Both of these classes were smaller than the Norman's class of prime terms for stable traits, which included 608 terms. However, what Norman regarded as prime terms in any of these classes are not necessarily terms with a high frequency of use. For example, Norman classified *acute, balky, deludable* and *jaunty* as prime stable trait terms, and *fathomless, demoralizing, endurable* and *grueling* as prime social effect terms. Although the meaning of such terms is reasonably interpretable to many university undergraduates, they seem to rarely occur in contemporary description of persons. The examples suggest that expert determinations of what is prime and familiar needs a check against empirical data on actual frequency of use.

Social effects are described usefully by John (1990: p. 74) as 'effects that the expression of a trait in behaviour and emotion has on others' thus indicating the social stimulus value of the individual. By noting that descriptors like 'frightening' and 'intimidating' do not refer to traits, but to the effects 'irascible' individuals have on others' (p. 74), John makes a trait-theory presupposition regarding the source of these effects. The trait-theory presupposition makes the trait primary and social effect secondary, which goes along with the general attitude that social effects are discardable, unessential personality descriptors. But alternative approaches are possible.

One alternative approach is to take personality attributes as emergent properties of transactions between an individual and his/her environment—especially the social environment—that are constituted in the perceiver as well as in the perceived. Under this approach, social effects might be more central to personality. From the standpoint of myself as a perceiver, a person's effect on me (or others) is a joint product of that person's own behaviour pattern and my own motivational set. 'My own motivational set' is partly unique to me (certainly at a particular moment, but perhaps also in general) and partly shared with other people. A particular social effect of a particular person on a particular perceiver may reflect the unique behaviour patterns of the person and the unique motivational set of the perceiver. Thus, for example, Jack is interested in finding a new girlfriend and so finds Jill's smiling overtures to be *charming* rather than *annoying*. However, across persons the structure of social effects may provide a synoptic view of how frequently occurring human behaviour patterns interact with frequently occurring human motivational sets. The tendency across large samples to find social effects like *charming* and *annoying* particularly important might be due to widely significant behaviour patterns

(such as extraversion and agreeableness) but also due to widely significant motivational sets (such as whatever confers an easy readiness for humans to be charmed or to be annoyed). Under a transactional account of personality, person descriptors reflect attributes rather than intrinsic traits, attributes that capture properties emerging recurrently out of the interactions of motivations, affects, thinking patterns and behaviour patterns between people (not just within people).

Social effects define personality as an individual's footprint on the social world. They might be called the environmental impacts of the individual, with 'environmental' encompassing the social as well the physical environment. Social effects can also be considered 'affordances' (*cf*. Beauvois & Dubois, 2000) that an individual provides for others within a social environment.

For the purpose of measuring social effects, ratings by informants are logically the primary source of data: The best measure of an individual's impact on others is what others say about that impact, not what the impactor claims it to be. Nonetheless, because the individual having the social effect is a party to the transaction in which the effect occurs, that individual's self-concept might well include notions of the kind of effect the same individual typically has on others. So self-report, while secondary, is not irrelevant to the measurement of social effects.

Should social effects be considered a class of personality descriptor at all? Goldberg (1982) argued that 'a complete observation language for personality description should ultimately include' terms like this, which he considered to be 'other types of personality terms' (p. 230). In American English, an individual may be described as 'having a lot of personality,' and this description seems to refer largely to having a vivid and memorable impact on others. Those with a lot of personality have very distinct social effects, rather than having an atypical profile of stable traits. Social effects may be central in some lay conceptions of personality.

Among single words potentially referring to personality attributes in modern world languages, the variety is overwhelming: Catalogues of person descriptors in unabridged English dictionaries by Norman (1967) and Allport and Odbert (1936) both comprised roughly 18 000 terms referring to characteristics that might be used to distinguish one human being from another. This is a vast domain of distinctions, of which parsimonious summaries are needed. For grouping the phenomena in such taxonomies of personality, the most useful procedure has been factor analysis. Factor analysis can be considered a variable-reduction procedure, in which many variables are organized by a few factors that summarize the interrelations among the variables. There have been many studies identifying factors in the stable-trait class of descriptors, and these have often found a structure akin to the Big Five model of personality description, providing important support to that model (Goldberg, 1990, 1993; John, 1990). However, a more encompassing summary of the results of various 'lexical studies' (provided in Saucier, 2009b; *cf*., Saucier & Goldberg, 2001) is the following: If one extracts only one factor, one finds some kind of general evaluation (e.g. good versus bad) factor; if one extracts two, one is highly likely to find factors referring to dynamism and social self-regulation (Saucier, 2009b; *cf*., Caprara, Barbanelli, & Zimbardo, 1997; Shweder, 1972; White, 1980). Beyond these very broad levels, regularities depend somewhat on whether the selection of variables is narrow (focused on stable traits) or broad (including most or all classes of person descriptor). In narrow selections, three factors related to three Big Five factors emerge rather predictably (Peabody & De Raad, 2002), the most common structure at the five-factor level resembles the Big Five, and that most common at the six-factor level resembles the Cross-Language

Six (e.g. Ashton et al., 2004). In more inclusive selections, the Big Five is less evident, but a Big Six model with considerable relation to the Cross-Language Six can be delineated in the convergences between studies (Saucier, 2009a).

Based on this review, it is worthwhile to examine the structure generated by highly prototypical and frequently used social-effects descriptors. Such a structure may reveal the kinds of attributes that are particularly important from the perceiver's (i.e. the informant's) point of view. For delineating such a structure, informant-rating data is the most useful, but self-report data has some corollary utility as well. Self-report of social effects likely reflects some combination of (a) feedback from those with whom one interacts and (b) the kind of effects the self-desires to be having.

METHOD

Norman (1967) provided an expert classification of person-descriptors that included a distinct class of social effects. Goldberg extended Norman's work (as described in Goldberg, 1982), which included a second listing of English social-effects terms distinct, though mostly overlapping, with that of Norman.

Saucier (1997) began with those 2991 *adjectives* Norman (1967) had not identified as moderately or very difficult, as slangy, quaint, awkward, colloquial, ambiguous, vague or tenuously or obliquely metaphorical, and which did not refer to race or ethnicity, and included an additional 299 terms from the further classifications of Goldberg (1982); these additions included 98 terms from a set of 424 terms referring to social roles, relationships and effects. In total, Saucier constructed an initial pool of 3446 person-descriptive adjectives, which were divided into five separate inventories, one of which comprised 326 terms for social roles and effects. 83 student judges were recruited from class sections in upper-division psychology courses. Each subset of descriptors was rated by a subsample of between 12 and 25 judges, using a 0–9 (10-point) rating scale, with 0 indicating that the judge did not know the term at all, 1 indicating it was 'never', 3 'rarely', 5 'sometimes', 7 'often', and 9 'extremely often' used to describe a person. Reliability indices were calculated, including mean inter-rater correlations and α-reliabilities. Mean inter-rater correlations ranged from .42 to .60 in the five subsamples, with α-coefficients of .91 to .96. The adjectives were rank-ordered by their aggregate rated frequency in this initial round of frequency ratings, and 1135 that had the highest rated frequency were carried over into a second round in which all descriptors were in a common pool.

A new sample of 46 judges (university students and community residents) was recruited. Raters used the same 0–9 scale employed in the First Round, on one of two forms, randomly assigned, each containing half the adjectives plus a page in common between the two forms. Mean inter-rater correlations were substantially lower than in the First Round (.27 to .32 instead of .42 to .60) but, due to the larger samples, the α-coefficients were all at least .90. The set of 500 person-descriptors having the highest average mean ratings was then extracted as a representative set of terms, comprising attributes important enough to have been encoded as single words in the language and to have a high frequency of use.

To control systematically for breadth of variable selection, classifications of these person-descriptors were conducted, using the scheme proposed by Angleitner, Ostendorf, and John (1990) and subsequently used in numerous other lexical studies. This scheme included four broad content categories: Dispositions, Temporary Conditions, Social and Reputational Aspects, and Overt Characteristics and Appearance. Descriptors not fitting

into any of these categories were classified as 'Terms of Limited Utility,' that is, either (a) context-specific and technical terms, or (b) metaphorical, vague or outmoded terms. Each of the first four broad categories included two to four subordinate categories; for example, Social and Reputational Aspects included social effects, social roles and relationships, social evaluations, and attitudes and worldviews. To classify the high-frequency English adjectives (as well as 40 additional terms, a total of 540), Saucier (1997) recruited 15 graduate students. For each judge, an 18×540 matrix of classifications was constructed, enabling inter-rater correlations for each category. The fifteen 18×540 matrices were combined to form an aggregate table; in this table the 'prototype score' for each adjective in each category was the number of judges assigning the adjective to that category (as in Angleitner et al., 1990). For the specific social effects category, the reliability of the judgments (coefficient α) was .77. Of the 500 high-frequency English person-descriptive adjectives, 27 were classified by a majority of the judges as falling in the social-effects category. This number compares with 47 terms classified by a majority of the judges as temperament and character traits and 28 classified by such a criterion as ability and talent descriptors. These numbers for the prototypical terms in specific categories are much smaller than those prototypical for broader categories; this is because many terms were agreed on as falling within a broad class but with disagreement as to which subsidiary class was most relevant.

There was some disagreement among classifications as to which terms were social effects. Of the 27 prototypical terms from the empirical classification, 17 had been listed by Goldberg in his compendium of social-effects terms (the 10 terms that were not: Admirable, Aggravating, Frustrating, Agreeable, Pleasant, Supportive, Inconsiderate, Insensitive, Rude and Unreliable); some discrepancies arose because terms listed by Goldberg as trait terms (and in some cases incorporated into measures of the Big Five [Goldberg, 1992]) were classified by judges as social effects. There were 29 highly frequent terms classified as social effects by Norman (1967), of which nine were classified as social effects by a majority of (eight or more) judges, five more by seven judges, still two more by six judges, two more by five judges, and yet five more by four judges (23 of 27 were classified as social effects by at least four judges). Numerous terms that Norman had classified as social effects were empirically more often classified as appearance descriptors (e.g. Beautiful), as social evaluations (e.g. Amazing), or as temperament/character traits (e.g. Humorous).

There was, however, enough agreement among these classifications to arrive at a set of the most prototypical—and very frequently used—social effects terms. Eleven terms were social effects in all three classifications. Thirteen terms were judged to be social effects by both Norman and Goldberg, but did not reach a majority among the judges. Nine more terms were classified as social effects both by Goldberg and a majority of judges. Based on these agreements, I retained as highly prototypical social-effects terms a set of 32 descriptors, classified as such by at least two of the three sources, which are listed in Table 1. This set corrects for occasional tendencies of experts to select infrequently used terms as prime terms, and for the proclivities of judges in an empirical study to classify as social effects some terms that experts see as standard personality descriptors.

Participants and inventories

For *peer* (informant) *ratings*, an inventory containing a large number of adjectives was completed by 215 students at an ethnically diverse university and at two community

Table 1.   Prototypical social effects terms with the highest frequency of use in American English

Identified as social effects by Norman, Goldberg, and a panel of judges (all three):
Boring
Charming
Embarrassing
Frightening
Insulting
Interesting
Intimidating
Irritating
Likeable
Lovable
Pleasing
Identified as social effects by both Goldberg and a panel of judges:
Annoying
Appreciated
Entertaining
Exciting
Offensive
Respected
Trusted
Well-liked
Identified as social effects by both Norman and Goldberg:
Amazing
Amusing
Appealing
Attractive
Beautiful
Confusing
Dangerous
Fascinating
Harmless
Hilarious
Pathetic
Seductive
Understandable

Note: Sources are Norman (1967), Goldberg (1982), and a panel of 15 psychology graduate students (described in Saucier, 1997).

colleges, all in Western states. Participants were instructed to describe someone they knew well, of the same sex and about the same age as themselves. In ratings on a five-point scale of the degree to which the participant liked the target, only eight of the targets were placed at the two lowest points on the scale (liked 'not at all' or 'only a little'); these eight outlier cases were omitted. Of the remaining 207, 201 were retainable, having 5% or fewer missing responses.

A similar inventory was mailed to members of a community sample consisting of residents of a medium-sized Western city, with *self-report* instructions. 723 returned the inventory, of whom 700 (400 women and 300 men) provided protocols with 5% or fewer missing responses. The average age of these respondents was 52, with a standard deviation of 13.

The community sample used a 525-adjective inventory consisting of the 500 highest-frequency-of-use adjectives, 15 additional terms needed to fill out the adjectives on a brief Big Five measure (Saucier, 1994), and 10 additional filler terms. The peer-rating sample

used a slightly longer inventory with 600 terms: The 525 just described followed by 75 additional adjectives of interest to other investigations, but not relevant to the present study.

Available in both the peer and self-data sets, and administered concurrently, were the Big Five Mini-Markers (Saucier, 1994) and adjective markers for a Big Six structure derived from studies of convergences among inclusive-variable-selection lexical studies (Saucier, 2009a). Also administered concurrently were adjective markers for two broader dimensions (Dynamism and Social Self-Regulation) that appear to be especially ubiquitous across cultures (terms corresponding to 15 of the 17 most ubiquitous markers for these two factors, from Saucier et al., 2010). Most participants in the self-rating data set had also completed the five-factor NEO Personality Inventory-Revised (NEO-PI-R; Costa & McCrae, 1992) some 2 years previous, and most of them 8 years later completed the six-factor HEXACO Personality Inventory (HEXACO-PI; Lee & Ashton, 2004). Of the 700 participants in the self-rating sample, 657 had completed the NEO-PI-R and 581 later completed the HEXACO-PI.

Analyses

For each data set, an ipsatized data set was created to parallel the original (raw) ratings. That is, each participant's responses were Z-scored (ipsatized) to remove individual differences in use of the rating scale. Comparison of results from original and ipsatized data enables insights into the effects of rating-scale usage (acquiescence [yeasaying vs. naysaying], extreme vs. middle responding) on results. Results should ideally reflect neither artefacts of response styles nor of the potentially artificial effects of forcing equality on the means and variances of response distributions of all respondents. The latter effects may occur because ipsatizing will partial out substantive content that is reflected more by items keyed in one direction versus the other. A robust structure should replicate well across original and ipsatized ratings, because a structure replicating across both types of data cannot be attributed to any biases or artefacts characteristic of either type of data.

I was also interested in delineating whatever structure would replicate from peer to self-ratings. In part, this was because the peer-rating sample was moderate in size and a replication criterion was therefore desirable. In addition, a truly robust peer-rating structure of social effects should be detectable in self-ratings because of downstream effects of other people's perceptions on the perception of the attributes one sees in oneself.

The prime focus was on identifying as many factors as these robustness criteria—replication from original to ipsatized data, and from peer to self-ratings—would allow. Once a set of robust factors was delineated, they could then be compared by extension correlation analyses with measures of previous personality factors, to help in making sense of social-effects factors.

RESULTS

For the prime data matrix, the original peer ratings, the first 10 eigenvalues for the 32 variables were 10.23, 2.87, 1.74, 1.56, 1.28, 1.16, .99, .88, .87 and .81. Here the most evident elbow in the scree plot followed the second factor. However, in ipsatized peer ratings elbows followed the first and fifth factors. In the self-rating data the most evident elbows in the scree plot were after two and five factors (original data) or two and four factors (ipsatized data). Scree was therefore not definitive with respect to number of

factors. Solutions from one to six factors (principal-axes extraction) were examined, to see which set(s) of original peer-rating factors replicated best to ipsatized data and to self-rating data.

The top part of Table 2 provides correlations between factor scores from original versus ipsatized data, with factors from the two data matrices paired or matched so that these correlations are maximized. Across peer and self-rating data, there were always two factors correlating .80 or higher, no matter how many factors (up to six) were extracted. There were always three factors correlating .69 and higher, which is a marginal degree of replication.

Solutions of one, two and three factors were then compared between self and peer data, to ensure that the replicating pattern found within one data type was indeed matched to that within the other data type. Within original peer and within ipsatized peer ratings, the 32 variables were regressed on the factor-score estimates, with weights derived from that regression used to generate scores in the corresponding self-rating data. Then, in the self-rating data, the peer-weight-generated scores were correlated with factor scores arising independently from self-rating data. The bottom part of Table 2 presents these correlations for solutions of one to three factors. All correlations between best-match pairs of factors were above .90. These coefficients provide a strong indication that the peer-rating factors (from one, two and three factor solutions) are well-replicated in self-rating data.

Solutions of two factors, and perhaps also three factors, from the original peer ratings (the prime data set here) generalize well to ipsatized data and to self-rating data. What is the content of these factors? On the one (unrotated) factor, there were 17 terms with loadings of

Table 2. Indices of correspondence between factor solutions across original and ipsatized data, and across peer and self-rating samples

Best-match correlations of regression-based factor scores

Original peer with ipsatized peer data

One factor	.95*				
Two factors	.83*	.80*			
Three factors	.90*	.82*	.77*		
Four factors	.94*	.93*	.85*	.71	
Five factors	.95*	.93*	.86*	.83*	.69
Six factors	.95*	.93*	.85*	.78*	.76*	.64

Original self with ipsatized self-data

One factor	.92*				
Two factors	.91*	.89*			
Three factors	.93*	.93*	.90*		
Four factors	.96*	.95*	.69	.54	
Five factors	.96*	.93*	.77*	.72	.46
Six factors	.96*	.80*	.79*	.73	.72	.68

Peer factors correlated with scores derived by imposing regression weights from peer factors on self-rating data:

Original peer with original self-data

One factor	1.00*		
Two factors	1.00*	.93*	
Three factors	.99*	.95*	.91*

Ipsatized peer with ipsatized self-data

One factor	.99*		
Two factors	.98*	.96*	
Three factors	.95*	.95*	.91*

*Correlations exceeding .75. In each row, correlations are rank-ordered from highest to lowest.

.60 and higher; 2 of these had negative loadings (*Boring, Irritating*) and 15 had positive loadings (*Well-liked, Lovable, Pleasing, Fascinating, Respected, Interesting, Attractive, Appealing, Likeable, Trusted, Amazing, Understandable, Entertaining, Exciting* and *Charming*). This single factor might be labelled Likeability/Lovability.

In the solution involving two orthogonal varimax factors, the two most salient negative-loading terms from the single factor split. *Irritating* became one of the highest-loading terms on the second factor, along with *Insulting, Offensive, Frightening, Annoying* and *Embarrassing*. *Boring* remained with the first factor, whose highest-loading terms were *Exciting, Fascinating, Lovable, Appealing, Entertaining, Interesting, Pleasing, Amazing, Well-liked* and *Attractive*. The first factor represented how exciting versus boring a person is to others, whereas the second factor represented how relatively aversive the person is as a stimulus to others. In simpler terms, one factor concerned how much one is (or is believed to be) a source of pleasure to others, the other concerned how much one is a source of pain to others. Table 3 presents loadings of the 32 terms on the two factors, as well as corollary loadings on the one and three-factor solutions.

In the three-factor solution, the second factor stayed much the same as it was in the two-factor solution. One small part of the larger first ('pleasure to others') factor—represented in the terms *Entertaining, Amusing* and *Hilarious*—split off to form a separate factor. The terms with the highest loadings on the first factor in the three-factor solution were *Appealing, Attractive, Fascinating, Beautiful* and *Pleasing*. This division of content seems to represent the distinction between elicited joy and amusement (such as that one might obtain from a comedian or comic actor) and elicited interest of more serious varieties (such as persons who are intellectually interesting or have an attractive appearance). The division of content corresponds partially to that found for English personality type-nouns (Saucier, 2003, Figure 1), where a broad *Hero/Champion/Darling/Thinker* factor split into numerous subcomponents including *Talker/Joker/Goof, Babe/Beauty/Cutie* and *Philosopher/Genius/Pioneer*.

All factors described here are orthogonal, derived from the widely used varimax rotational algorithm. When these factors were allowed to correlate, they did. Correlations between the two factors in the two-factor solution (promax rotation with $\kappa = 4$) were $-.30$ (self, original), $-.43$ (self, ipsatized), $-.57$ (peer, original) and $-.66$ (peer, ipsatized). Although these correlations are sometimes substantial, the configuration of terms on factors was highly similar whether orthogonal or oblique rotation was employed. The three-factor solution also had interfactor correlations in the .30 to .66 range of magnitude, except that the 'entertaining' factor was correlated with a lower magnitude ($-.10$ to $-.20$) with the 'aversive to others' factor in self-ratings only.

Although solutions with more than three factors were not well replicated, it is worth noting what tended to occur, more often than not, with these more fine-grained factors. The 'source of pleasure to others' factor tended not to yield a consistent additional (third) variant, but the 'source of pain to others' factor tended to split into three specific variants: (a) respected and well-liked, (b) annoying and irritating and (c) dangerous and intimidating. Variant (a) reflects being unaversive, *not* being a source of pain, (b) would characterize aversive objects of low potency (e.g. houseflies, people who won't stop talking) whereas (c) would characterize aversive objects of high potency (e.g. tigers, people who brandish weapons).

Table 4 presents the correlations of social-effects factors with more conventional personality factors based ultimately on the lexical method. For the two-factor solution for social-effect terms that is most emphasized in this report, one factor (pleasure to others)

Table 3. Factor loadings of 32 prototypical social-effect terms on two (also one and three) factors

Term	Two factors				One factor		Three factors					
	P1	S1	P2	S2	Peer	Self	P1	S1	P2	S2	P3	S3
Exciting	.70*	.78*	−.01	.04	.60	.64	.56*	.68*	−.01	.02	.42	.37
Fascinating	.69*	.76*	−.20	.07	.70	.60	.62*	.67*	−.19	.05	.31	.35
Lovable	.68*	.54*	−.24	−.33	.71	.63	.58*	.49*	−.23	−.34	.36	.21
Appealing	.68*	.73*	−.11	−.19	.64	.73	.75*	.73*	−.07	−.20	.10	.18
Entertaining	.66*	.67*	−.08	.02	.60	.56	.35	.44	−.09	−.02	.73*	.61*
Interesting	.66*	.68*	−.17	−.09	.65	.63	.50*	.62*	−.17	−.10	.44	.28
Pleasing	.65*	.47*	−.28	−.43	.71	.63	.60*	.41	−.27	−.44*	.27	.22
Amazing	.65*	.50*	−.14	.19	.63	.33	.56*	.47*	−.14	.18	.31	.21
Well-liked	.64*	.56*	−.35	−.43	.74	.71	.49*	.48*	−.36	−.45	.43	.26
Attractive	.64*	.62*	−.18	−.19	.65	.63	.71*	.75*	−.15	−.17	.09	−.05
Respected	.57*	.45*	−.34	−.45	.66	.61	.57*	.38	−.33	−.46*	.16	.22
Charming	.56*	.60*	−.23	−.17	.60	.61	.55*	.55*	−.22	−.18	.17	.24
Likeable	.55*	.54*	−.31	−.42	.63	.68	.37	.45*	−.32	−.44	.46*	.27
Boring	−.54*	−.40*	.30	.31	−.62	−.50	−.44*	−.30	.30	.33*	−.31	−.27
Seductive	.53*	.55*	.06	.08	.43	.43	.57*	.58*	.09	.09	.09	.10
Understandable	.52*	.28	−.33	−.40*	.62	.44	.52*	.20	−.32	−.41*	.14	.18
Beautiful	.51*	.58*	−.06	.01	.47	.50	.61*	.65*	−.02	.02	−.01	.04
Trusted	.49*	.24	−.41	−.44*	.63	.43	.44*	.18	−.40	−.45*	.24	.15
Amusing	.49*	.57*	−.02	.08	.43	.45	.21	.31	−.03	.03	.62*	.66*
Appreciated	.48*	.42*	−.16	−.34	.49	.53	.46*	.38*	−.15	−.34	.16	.15
Hilarious	.47*	.50*	−.01	.18	.41	.33	.21	.24	−.02	.14	.58*	.65*
Insulting	−.14	−.01	.76*	.63*	−.48	−.31	−.18	−.01	.75*	.63*	.00	.03
Offensive	−.15	.00	.65*	.69*	−.45	−.33	−.21	−.04	.64*	.68*	.05	.12
Irritating	−.34	−.08	.64*	.65*	−.60	−.38	−.38	−.12	.62*	.65*	−.05	.08
Frightening	−.18	.02	.59*	.55*	−.44	−.25	−.09	.03	.60*	.55*	−.21	.01
Annoying	−.28	−.06	.57*	.69*	−.52	−.39	−.31	−.06	.56*	.69*	−.05	.03
Embarrassing	−.12	−.04	.54*	.56*	−.37	−.31	−.12	−.11	.54*	.55*	−.04	.14
Confusing	−.15	−.07	.47*	.55*	−.36	−.33	−.16	−.04	.46*	.55*	−.04	−.05
Pathetic	−.33	−.17	.44*	.44*	−.51	−.36	−.28	−.19	.44*	.44*	−.19	.03
Dangerous	.01	.14	.40*	.52*	−.19	−.13	.03	.18	.41*	.53*	−.05	−.01
Intimidating	.06	.23	.32*	.45*	−.11	−.03	.18	.26	.35*	.46*	−.18	.04
Harmless	.02	−.09	−.12*	−.15*	.07	.00	−.06	−.12	−.13*	−.16*	.13	.03

Note. Peer sample (P), $N = 201$. Self-sample (S), $N = 700$.
*Highest loading for a term within a factor solution (where > 1 factors). Based on principal axes extraction, any rotation by varimax.

was most consistently related to Big Five Extraversion and Intellect/Imagination, the other factor (pain to others) was negatively associated with Agreeableness, Emotional Stability and Conscientiousness. This pattern was similar across peer and self-rating data, although in the peer data Agreeableness was more strongly associated with the 'pleasure to others' factor than was true in self-rating data. Similar correlations were found in self-rating data for the NEO Personality Inventory, although the correlations were reduced (perhaps largely because of the 2-year gap in assessment between the NEO items and the social-effect terms).

   Table 4 also presents correlations for related six-factor models. Considering the Big Six structure derived from inclusive-variable-selection lexical studies (Saucier, 2009a) Extraversion and Originality/Talent were most consistently associated with the 'pleasure to others' factor, while Honesty/Propriety, Agreeableness, Resiliency and Conscientiousness were more associated (in all cases negatively) with the 'pain to others' factor. Self-rating

Table 4. Correlations of social-effect factors with marker scales for personality factor structures

Term	Two factors				One factor		Three factors					
	P1	S1	P2	S2	Peer	Self	P1	S1	P2	S2	P3	S3
Big Five												
Extraversion	.43*	.53*	.03	-.06	.36*	.49*	.29	.43*	.02	-.08	.42*	.40*
Agreeableness	.55*	.27	-.66*	-.70*	.78*	.58*	.49*	.21	-.66*	-.71*	.32	.17
Conscientiousness	.30	.19	-.52*	-.46*	.49*	.39*	.38*	.19	-.50*	-.46*	-.02	.04
Emotional stability	.25	.13	-.58*	-.50*	.48*	.35*	.22	.11	-.57*	-.50*	.17	.04
Intellect/Imagination	.54*	.45*	-.24	.00	.57*	.39*	.46*	.43*	-.23	-.01	.32	.22
Big Six												
Conscientiousness	.35*	.22	-.42*	-.39*	.49*	.38*	.42*	.21	-.40*	-.39	.00	.08
Honesty/Propriety	.28	-.02	-.72*	-.71*	.57*	.33	.21	-.03	-.72*	-.72*	.23	-.03
Agreeableness	.45*	.18	-.60*	-.62*	.66*	.46*	.41*	.15	-.60*	-.63*	.25	.10
Resiliency	.28	.22	-.43*	-.46*	.44*	.41*	.25	.20	-.42*	-.46*	.17	.08
Extraversion	.59*	.58*	-.20	-.32	.60*	.66*	.42*	.45*	-.20	-.35*	.52*	.45*
Originality/Talent	.56*	.58*	-.10	.14	.52*	.43*	.49*	.56*	-.10	.13	.33	.27
Big Two												
Social	.58*	.26	-.61*	-.67*	.78*	.55*	.57*	.20	-.60*	-.68*	.25	.17
Self-Regulation												
Dynamism	.61*	.64*	-.15	-.11	.59*	.60*	.48*	.56*	-.15	-.13	.46*	.38*
NEO-PI-R (N = 657)												
Extraversion	—	.60*	—	-.06	—	.54*	—	.51*	—	-.08	—	.41*
Agreeableness	—	-.02	—	-.49*	—	.22	—	-.04	—	-.49*	—	.01
Conscientiousness	—	.14	—	-.32	—	.27	—	.17	—	-.32	—	-.02
Neuroticism	—	-.24	—	.35*	—	-.37*	—	-.25	—	.35*	—	-.05
Openness	—	.28	—	.09	—	.19	—	.28	—	.09	—	.12
HEXACO-PI (N = 581)												

(Continues)

Table 4. (Continued)

Term	Two factors				One factor		Three factors					
	P1	S1	P2	S2	Peer	Self	P1	S1	P2	S2	P3	S3
Honesty/Humility	—	−.20	—	−.34	—	−.01	—	−.22	—	−.34	—	−.06
Emotionality	—	−.04	—	−.11	—	.03	—	−.08	—	−.12	—	.06
Extraversion	—	.54*	—	.02	—	.45*	—	.44*	—	.00	—	.39*
Agreeableness	—	.03	—	−.35*	—	.19	—	−.01	—	−.35*	—	.07
Conscientiousness	—	.09	—	−.20	—	.17	—	.12	—	−.19	—	−.06
Openness	—	.28	—	.15	—	.16	—	.27	—	.15	—	.12

Note: Peer sample (P), $N = 201$. Self-sample (S), $N = 700$ except where indicated.
*Correlation of at least .35 in magnitude. Social-effects factors measured via regression-based factor scores. Big Five measured with 40-adjective Mini-Markers (Saucier, 1994), Big Six with 47 adjectives described by Saucier, 2009a, Big Two with 15 adjectives from Saucier et al., 2010.

data was available for the HEXACO-PI, and Extraversion and Openness were most related
to the 'pleasure to others' factor, while Honesty, Agreeableness, Conscientiousness and
Emotionality were more related (negatively) to the 'pain to others' factor. However, the
correlations were lower than for the Big Six adjectives, and were especially modest for
Emotionality (largest $-.11$) and Conscientiousness (largest $-.20$). The lower correlations
may be due largely to the 8-year gap in assessment between the social-effect terms and the
HEXACO items.

Overall, the correlations just reviewed indicate that the two main factors of social effects
are reflected diffusely across the factors in personality models with five or six factors. But
what about personality models with only two factors?

It is widely recognized that Big Five scales for Extraversion and Openness/Intellect tend
to be modestly correlated with each other, and scales for Agreeableness, Conscientiousness
and Emotional Stability tend to be correlated with each other. This pattern of interscale
correlations has been the basis of a claim of discernible, consistent higher-order factors
(Digman, 1997; DeYoung, 2006). These higher-order factors are somewhat controversial
(e.g. Ashton, Lee, Goldberg, & De Vries, 2009). However, without resorting to higher-
order factors derived from lower-order factor intercorrelations, two broad factors
(Dynamism, Social Self-Regulation) tend to be ubiquitous across languages (Saucier,
2009b), and tend to show a similar pattern of correlations with the Big Five. Table 4
includes correlations with adjective marker scales for these very broad factors. The
'pleasure to others' factor was strongly correlated (.61 to .64) with the Dynamism factor
scale, while the 'pain to others' factor was strongly correlated ($-.61$ to $-.67$) with the
Social Self-Regulation factor scale. The 'pain to others' factor was relatively unrelated
(correlations $-.11$ to $-.15$) to Dynamism, while the 'pleasure to others' factor was
modestly related to Social Regulation in self-ratings (.26) but more strongly in peer ratings
(.58). It seems that the social-effects are quite homologous to the Big Two, although in
peer-rating data (more than self-rating data) there may be considerable 'halo' effects that
especially make Big Two Social Self-Regulation and Big Five Agreeableness more related
to social effects connoting 'pleasure to others.'

Table 4 also provides correlations with personality measures for both one- and three-
factor representations based on social effects terms, although these are less interesting. The
single social-effects factors (pleasure vs. pain to others) tended to be modestly correlated
with all personality scales, although HEXACO Honesty/Humility and Emotionality are
notable exceptions. Both had negative-sign correlations with both of the two social-effects
factors, Honesty more dramatically so than Emotionality. These results suggest that
perhaps to some degree dishonest/unhumble persons may generate both pleasure and pain
in perceivers.

In the three-factor representation, the 'pleasure to others' factor split into two more
specific subcomponents, but both subcomponents had similar correlates as the broader
factors, being related to Extraversion and also to Intellect/Imagination or Originality/
Talent or Openness. Three-factor solutions from personality terms have some tendency
(observable across many languages studied so far, but not all) to include rather broad
versions of Big Five Extraversion, Agreeableness and Conscientiousness. Although social-
effects factors appear to correspond strongly to (one might even say that they replicate)
personality factors found at the one- and two-factor levels, this is clearly not true at the
three-factor level.

Respondents in the self-data set also completed, 3 years later, Big Five measures—not
only the Mini-Markers but also the Big Five Inventory (BFI; John & Srivastava, 1999).

Moreover, most of these respondents were described by one to three peers whom they nominated themselves (see DeYoung, 2006 for a description of these data). In order to determine the degree to which self-reported social effects are associated with the stable component of personality dimensions, and the degree to which they are associated with actual reports by others, the social-effect factor scores were correlated with both self- and aggregated (averaged) peer-report scores for these Big Five measures. The results, for those 466 participants for whom scores on all variables were available, are presented in Table 5. One would expect convergence between self- and peer-ratings of the same targets, and that indeed was found. For the Mini-Markers, self–peer correlations were .64, .46, .52, .40 and .51, and for the BFI .67, .48, .47, .51 and .61, respectively for Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Intellect/Openness, with no divergent correlation in either case exceeding .21.

Table 5 shows that the general patterns of association found in simultaneous Big Five measures is reproduced in Big Five scores from 3 years later, although the size of the associations is consistently attenuated. The pattern also remains in correlations with peer-rated personality, although here the associations are even more strongly attenuated. In

Table 5. Correlations of self-report social-effect factors with scores 3 years later from both peer- and self-report

Term	Two factors		One factor	Three factors		
	S1	S2	Self	S1	S2	S3
Self-Ratings						
Mini-Markers						
Extraversion	.47*	−.01	.41*	.37*	−.03	.35*
Agreeableness	.21	−.45*	.40*	.13	−.47*	.22
Conscientiousness	.16	−.26*	.26*	.16	−.26*	.02
Emotional stability	.13	−.32*	.26*	.12	−.33*	.04
Intellect/Imagination	.31*	.14	.19	.28*	.13	.15
Big Five Inventory						
Extraversion	.49*	.01	.42*	.37*	−.01	.40*
Agreeableness	.14	−.50*	.36*	.08	−.51*	.12
Conscientiousness	.21	−.28*	.31*	.20	−.29*	.04
Emotional stability	.22	−.23	.29*	.21	−.23	.09
Intellect/Imagination	.31*	.11	.21	.28*	.10	.16
Aggregated Peer Ratings						
Mini-Markers						
Extraversion	.36*	.05	.29*	.27*	.03	.29*
Agreeableness	−.02	−.29*	.13	−.05	−.30*	.05
Conscientiousness	−.10	−.15	.02	−.02	−.14	−.11
Emotional stability	−.02	−.21	.09	.01	−.21	−.07
Intellect/Imagination	.11	.12	.03	.12	.12	.02
Big Five Inventory						
Extraversion	.35*	.02	.29*	.26*	.00	.30*
Agreeableness	−.04	−.31*	.12	−.05	−.31*	.01
Conscientiousness	−.06	−.15	.02	−.02	−.14	−.11
Emotional stability	.04	−.16	.11	.07	−.16	−.04
Intellect/Imagination	.19	.11	.11	.18	.11	.09

Note: Eugene-Springfield community sample, $N = 466$.
*Correlation of at least .25 in magnitude. Factor labels carried over from Table 4. Social-effects factors measured via regression-based factor scores. Correlations of .12 and higher in magnitude are significant, $p < .01$.

either kind of data, one of the two prime social-effects factors is significantly associated (virtually every $p < .001$) with Extraversion and Intellect/Imagination/Openness, the other with Agreeableness, Conscientiousness and Emotional Stability. The attenuated associations are likely to reflect both the 3-year lag in measurement and some component of self-reported social effects being unverified by peer ratings, the magnitude of the latter being difficult to estimate without social-effects descriptors being actually administered to peers describing the target who provided the self-ratings.

DISCUSSION

An important criterion for the goodness of a structural model is linkage to theory (Eysenck, 1991; Saucier & Simonds, 2006). The Big Five and other lexically derived models of personality are inductively and empirically derived; they lack theoretical underpinnings, and there is not yet a consensual theory matched to a consensual model of empirical personality factors. I will argue that the two-factor structure of social effects has particularly clear and important theoretical linkages.

The 17th-century philosopher Thomas Hobbes argued that appetite and aversion—the seeking of pleasure and the avoidance of pain (i.e. a pleasure-pain principle)—determines all behaviour. According to Hobbes, regardless of what we believe our motives to be, these are the true and most basic motives of human behaviour. A similar hedonic principle was also of course fundamental to Sigmund Freud's psychoanalytic theory. Epstein (1998), with a tip of the hat to Freud, has recognized the need to maximize pleasure and minimize pain as one—and probably the most basic one—of the four basic psychological needs. In earlier, classic work, Young (1967) similarly propounded a hedonic axiom: Organisms direct their behaviour to maximize pleasure (e.g. delight) and minimize distress (e.g. pain).

Of course, occurrences of positive and negative reinforcement build upon a similar hedonic foundation. *Presentation* of a positive reinforcer increases the probability of a behaviour, working by motivating *approach*, drawing on the organism's tendency to maximize pleasure. *Removal* of a negative reinforcer increases the probability of a behaviour, working by motivating *avoidance*, drawing on the organism's tendency to minimize pain.

In the two-factor structure of social-effect descriptors, one factor clearly concerns the degree to which a person functions as a pleasurable stimulus, such that it might be rewarding to approach them. The other factor clearly concerns the degree to which a person functions as a painful stimulus, such that it might be rewarding to avoid them (indeed, to approach them might be 'asking for punishment'). The difference in interpersonal affordances defined by these two social-effects factors appear to correspond to that between positive and negative reinforcement: For example, by their presence exciting people afford positive reinforcement to others, while non-insulting people afford negative reinforcement (safety from aversive experience) to others. Boring people afford distinctly little positive reinforcement, insulting people distinctly little negative reinforcement.

Investigations along many recent lines of research, and pursued by a wide variety of scientists, have focused on the importance of approach and avoidance tendencies and motives as key features of behaviour and affect. In linking the approach–avoidance framework to personality, the lion's share of attention has been devoted to approach and avoidance tendencies assumed to be internal to the individual. In the social-effects structure, however, approach and avoidance clearly manifest instead as tendencies endemic

to observers and informants. That is, the social-effects structure is apparently determined by how much the target person stimulates approach or avoidance in the *perceiver* (the observer or informant). The motivational pre-occupations of the perceiver—not those of the target individual—are what count.

One of the first and most parsimonious appraisal theories linking emotion to motivational processes was provided by Arnold (1960). According to Arnold, a stimulus object or event gets appraisal as good or bad (a source of benefit or of threat/harm), presumably by the limbic system in the brain, which leads to liking or disliking the object/event, and to either attraction or repulsion based on that response: We tend to approach what attracts us and withdraw from (or avoid) what we find repulsive. This theory seems highly consistent with the two-factor structure of social effects. We might say that a person gets appraised by others as something that is either attractive or repulsive, and on that basis tends to be approached or avoided. The finding here that attraction and repulsion may be somewhat orthogonal rather than opposites seems, however, novel in light of Arnold's theory. But we should consider that some persons may be neither a pleasure nor a pain to others, and some persons may stimulate approach-avoidance conflicts in others, being for example both interesting and dangerous. Characters that stimulate both approach and avoidance are not uncommon in films. HEXACO Honesty/Humility in the present analyses showed evidence of such a pattern, the humble/honest being neither pleasurable nor painful, the dishonest/unhumble being both pleasurable and painful. Informant-rated social effects coupled with HEXACO scores would be necessary to confirm such effects.

Analyses indicated that perceiver-centred approach and avoidance (as represented in the two social-effects factors) are integrally linked to the broad-level two-factor structure (Big Two) that is relatively ubiquitous across populations and cultures. Indeed, this may provide one good account of why these two broad personality factors are so ubiquitous. Reputation and gossip (implying informant data) may be more frequent and universal uses of personality language than are representations by an individual about what his or her attributes are (implying self-report data).

It seems reasonable to assume that a hedonic axiom can be applied across cultures, that maximizing pleasure and minimizing pain are key motives anywhere. The two-factor structure of social effects simply applies that hedonic axiom to judgments about the attributes of those with whom we interact, which can be considered appraisals of them as relational objects. At the broadest level, as is true in many other domains of psychological investigations, the best and most integrative theory of personality will be a hedonic one. Unfortunately, the line of thinking initiated by Allport, which excluded social effects as personality descriptors worth considering, has long obscured recognition of the importance of the hedonic axiom to personality judgments and to personality structure.

There is evidence that higher-order factors of the Big Five, which resemble the Big Two and must clearly be related to the two social-effects factors, may have strong genetic underpinnings (Jang et al., 2006). If they do, this undercuts the view that these Big Two factors are purely emergent from social interactions. A better account would be that, because of their own biologically driven motivational sets, perceivers are oriented towards who is worth approaching and who is worth avoiding, but who would get placed in either category is not arbitrary: Such placements would tend to be based indirectly on the genetic predispositions of others. In other words, some people tend to get approached based partly on different genetically based tendencies, others tend to get avoided based partly on their genetically based tendencies. Self-reports may even show a similar structure to peer-ratings perhaps because people get feedback from their social environment (Do I tend to be

approached a lot? Avoided a lot? Do people find me interesting? Do they find me boring? Am I found annoying? Or irritating?) as well as from their own observed behavioural tendencies, and so the structures of perceivers (in reports by informants) and of targets (in self-report) might tend to become matched. Of course, the emergence of these similarities in structure between self- and peer-ratings may, alternatively, be due to the categories 'pleasure-inducing' and 'pain-inducing' being a natural way to organize descriptions of persons.

Personality-attribute structure is hierarchically organized. One- and two-dimensional structures are the most easily replicable across languages. And the present report links the two-dimensional structure to a social-effect-attribute structure that has clear and important theoretical linkages. However, at least as important as theoretical linkage and replicability is ability to predict important outcomes. Without question, strongly empirically based models with five or six independent dimensions will predictively outperform those having only two dimensions. It seems best to explicitly maintain a hierarchical view of personality structure that incorporates complementary strengths of multiple levels. That would likely mean utilizing more fine-grained models (with five or six factors, and even with subsidiary subcomponents of these) for vital real-world prediction purposes, while informing our understanding of these models with the theoretically rich insights afforded by a more cross-culturally universal two-factor model. The hedonic axiom that informs the structure of social-effect descriptors is clearly relevant to the broader-level two-factor model, and helps link rich psychological theory to personality-attribute structure at this very broad level.

CONCLUSIONS

Social effects define personality as an individual's footprint on the social world, providing an ecological angle on personality. The present study indicates that the most prototypical social-effect descriptors most basically involve two dimensions that can be linked to a hedonic axiom. That is, footprints on the social world tend to be organized according to the degree to which the imposer of the footprint is appraised as a source of pleasure to others, and the degree to which s/he is appraised as a source of pain to others. These are two dimensions, but they can be collapsed into a single opposition (source of pleasure versus source of pain, as a single factor), or expanded out into three dimensions—in the present samples, by dividing 'source of pleasure' into 'source of joy and amusement' and 'focus of attention and interest'. Dimensions in social-effect descriptors clearly have rich linkages to psychological theories of learning and motivation. Moreover, social effects are rather tightly interwoven with variation in two very broad personality factors, and reflected more diffusely in more fine-grained factors in personality models with five or six factors.

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