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Character Strengths and Type: Exploration of Covariation

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Keywords
MBTI®, character strengths, covariation

Comments
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Running head: CHARACTER STRENGTHS AND TYPE

Character Strengths and Type: Exploration of Covariation

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MAPP801

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Abstract

Ninety-eight adult volunteers participated in this exploratory study of potential links between psychological type as determined by the Myers-Briggs Type Indicator and signature strengths as identified by the Values in Action Inventory of Strengths. We examined participants' types and signature strengths to test for covariation between specific signature strengths and individual type dichotomies or paired type combinations. We found significant covariations between 10 character strengths with single type dimensions namely, *creativity* (intuition), *open-mindedness* (thinking), *love of learning* (introversion), *integrity* (sensing and thinking), *persistence* (judging), *vitality* (extraversion), *love* (extraversion and feeling), *fairness* (sensing), and *gratitude* (extraversion). Love, integrity, and gratitude also covaried with multiple paired type combinations while *curiosity* covaried only with one paired type combination (introverted intuition).

Character Strengths and Type

Psychologists have long examined possible explanations of how a person thinks, feels and behaves. Positive psychology emphasizes the experience of human flourishing and focuses its attention on, among other things, the three pathways to happiness namely, subjective well-being, engagement of strengths, and pursuit of meaning in life (Seligman, 2002). Understanding how happy individuals think, feel and behave provides a basis for helping individuals and institutions perceive and act upon factors within their control that foster life satisfaction and improve human performance. The application of positive psychology places a strong emphasis on self-awareness, particularly awareness of positive factors such as strengths and preferences.

The Myers-Briggs Type Indicator (MBTI) and the Values-in-Action Inventory of Strengths (VIA-IS) are widely used for increasing self-awareness of positive factors within oneself. These instruments, built on different theoretical platforms, provide information that individuals can use to increase life satisfaction (Myers & Myers, 1995; Seligman, 2002). The MBTI helps people understand the implications of their preferences in mental functioning, while the VIA-IS ranks character strengths in the order that people tend to express them, and the ones that are most often and naturally used are *signature strengths*.

Character Strengths and Virtues

According to Seligman (2002), people can enhance happiness by discovering their signature strengths, owning them and choosing to use them in the main realms of life. Peterson and Seligman (2004) studied character strengths and values and defined 24 character strengths that seem to be valued by virtually every culture and hold true across time and geographic borders. These strengths are grouped under six virtue categories, namely, *wisdom, courage, humanity*, *justice*, *temperance* and *transcendence*. According to the criteria set by Peterson and Seligman, a character strength is fulfilling and morally valued in itself, does not diminish others, is pervasive and trait-like, is distinct

from other strengths, is embodied by paragons and prodigies, and is supported by rituals within the larger society. Table 1 shows a summary of the 24 character strengths in the VIA classification.

Helping people become aware of their signature strengths can provide the basis for thoughtful interventions that help them find new ways to flourish. Seligman (2002) says that the highest success in life comes from enhancing and using our strengths rather than focusing on our character weaknesses.

Table 1

VIA Classification of Character Strengths

Wisdom: Cognitive strengths involving acquisition and use of knowledge

- Creativity: Thinking of novel and productive ways to do things
- Curiosity: Exploring, discovering, taking an interest in all ongoing experience,
- Open-mindedness (Judgment): Examining things from all sides, thinking things through
- Love of learning: Mastering skills or topics, adding systematically to bodies of knowledge.
- Perspective: Providing wise counsel to others

Courage: Emotional strengths that exercise the will to accomplish goals in the face of obstacles

- Bravery: Acting on convictions without shrinking from threat or difficulty
- Persistence: Finishing what gets started, continuing in the face of obstacles
- Integrity: Acting according to personal values, taking responsibility for one's self and actions
- Vitality: Approaching life with energy and excitement

Humanity: Interpersonal strengths

- Love: Valuing and fostering close reciprocal relationships with others
- Kindness: Helping others, doing good deeds and favors
- Social Intelligence: Understanding motives and feelings of self and others, fitting in socially

Justice: Civic strengths that underlie healthy community life

- Citizenship: Working well as a member of a group, doing one's share, being loyal
- Fairness: Giving everyone a fair chance, treating people the same according to a sense of justice
- Leadership: Organizing group activities and seeing that they happen

Table 1

VIA Classification of Character Strengths (continued from page 4).

Temperance: Strengths that protect against excess
Forgiveness and mercy: Forgiving those who have done wrong, giving second chances
Humility and modesty: Letting accomplishments speak for themselves, not seeking limelight
Prudence: Being careful, refraining from saying or doing what would later be regretted
Self-regulation: Being disciplined, controlling appetites and emotions
Transcendence: Strengths of connection to the larger universe that provide meaning
Appreciation of beauty and excellence: Awe for excellence in art, nature, all domains of life
Gratitude: Being thankful for the good things that happen
Hope: Expecting the best and believing one can work to achieve it
Humor: Seeing the light side, bringing smiles and laughter
Spirituality: Having beliefs about the meaning of life that shape conduct and provide comfort

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Psychological Type

Myers and Briggs extended Jungian psychological type theory (Jung, 1927/1971) to form a discipline for helping people understand and use natural preferences of mental functioning (Myers & Myers, 1995). The MBTI embodies the practical application of type theory, enabling people to understand their own and others' psychological type and to integrate such understanding into everyday life (Myers, McCauley, Quenk, and Hammer, 1998).

The MBTI reports preferences on four type dichotomies, each consisting of two opposite poles that represent the natural ways that people use their minds differently (Myers, 1998). The four type dichotomies vary independently of each other, and result in 16 psychological types. Psychological type, according to Jung and Myers (Myers, 1998), is personality "resulting from the dynamic interaction of our four preferences, environmental influences, and our own choices" (p.5).

Two of the dichotomies represent *functions*, that is, the basic mental processes that take in information (*perceiving*) and act upon it (*judging*). The opposite poles of the perceiving function are *sensing* (S) and *intuition* (N), and the two opposite judging processes are *thinking* (T) and *feeling* (F). The other two dichotomies, known as *orientations*, affect the expression of the perceiving and judging functions. The *orientation of energy*'s two opposite poles are *extraversion* (E) and *introversion* (I) and the *orientation to the external world* or how a person prefers to deal with the external world is represented by either judging (J) and perceiving (P).

The perceiving (S-N) function represents the way information is taken in for processing, without evaluation. Ss (sensing types) attend to information that is observable and discernible through the five senses, and Ns (intuitive types) attend to meanings, relationships or possibilities that come by way of insight or have been "worked out beyond the reach of conscious mind" (Myer et al, 1998, p. 6). The judging (T-F) function represents the way perceived information is evaluated and decisions are made. Ts (thinking types) tend to make impersonal decisions on the basis of logical consequences whereas Fs (feeling types) decide primarily on the basis of personal and group values.

The orientation of energy (extraversion-introversion) refers to the direction to which energy is directed and from which energy is drawn. Es (extraverted types) focus energy on the outer world of people and activity, and receive "energy from interaction with people and from taking action", and Is (introverted types) direct energy inward into their "inner world of ideas and experience", and receive energy "from reflecting on their thoughts, memories, and feelings" (Myers, 1998, p.6).

The fourth dichotomy, the orientation to the external world, represents how a person prefers to deal with the outer world. Js (judging types) typically use thinking or feeling (the judging processes) and prefer to live in a planned orderly manner, seeking to regulate, structure and organize the outer world in pursuit of closure and moving on (Myers, 1988). Ps (perceiving types) use sensing or intuition (the perceiving processes) when dealing with the outer world and prefer to live in a

flexible and spontaneous way, remaining open to experience and understanding, rather than controlling life (Myers, 1998).

These eight mental processes are available to and used by everyone, but each person has a natural preference for one of the two opposing poles in each dichotomy. These natural preferences cause individuals to develop habits of behavior and personality patterns characteristic of the preferred processes (Jung, 1927/1971; Myers et al., 1998). Myers observed that some people are able to use their type differences more effectively than others (Myers et al., 1998). Type psychologists encourage building on natural preferences before dealing with less preferred functions or orientations. They advocate positive reframing of the difficulties that arise from type differences with others, thus raising energy and optimism, and facilitating modifications to behavior and communication styles (Myers et al., 1998).

Covariation between Type and Signature Strengths

This study explores the value of looking at people from the two perspectives of psychological type and signature strengths in order to enhance understanding of human behavior. The VIA-IS and MBTI instruments both provide information about the uniqueness of an individual. We believe that combining these two perspectives might yield a deeper understanding of human personality than either perspective independently.

This study begins an exploration of using type and signature strengths together by posing the basic question of whether there are covariations between type preferences and particular signature strengths.

Method

Participants

Ninety-eight adults, 70 female and 28 male, between the ages of 20 and 65, participated in this study by submitting to the researchers a list of their top five VIA character strengths and their

MBTI type. The sample population was gathered by the snowball sampling method (see Appendix A for the recruitment flyer). Proficiency in the English language was required for participation because the materials used were in English. All participants signed informed consent forms allowing their data to be used in this study.

Measures and Materials

Psychological type was determined using MBTI Form G. The MBTI is a proprietary self-report instrument owned by Consulting Psychologists Press. Form G, the research version, is an inventory of 126 forced choice phrase questions and word pairs (Myers, et al, 1998). Respondents mark their answers to the questions on custom Form G answer sheets. Answer sheets are scored by the Center for Application of Psychological Type (CAPT) and respondents receive the results through the administrator.

Character strengths were determined using the Values in Action Inventory of Strengths (VIA-IS) web-based self-report questionnaire (Values-in-Action Institute, n. d.). The VIA-IS comprises 240 5-point Likert scale items relating to the 24 character strengths in the VIA classification (Peterson & Seligman, 2004). Participants indicate the degree to which they endorse statements presented in the questionnaire. The VIA-IS responses are computer-scored using ipsative rank scoring. A list of the top five strengths is made instantly available to the respondent.

Procedure:

We administered the MBTI Form G to 75 participants in small groups. Completed answer sheets were sent to the CAPT for batch processing. Each participant received notification of his/her MBTI results and general information on characteristics frequently associated with the 16 type profiles. The remaining 23 participants provided type information they had obtained previously in work or school settings.

All participants completed the web-based VIA-IS questionnaire and submitted their lists of top five signature strengths to the researchers through electronic mail.

Results

Generally, the frequency of occurrence of individual character strengths ranged from a count of 3 in *self control* to 45 in *curiosity* (Appendix B refers). The covariation of MBTI types with character strengths was explored using *chi-square* analysis on actual and expected frequency measures for each MBTI preference or paired combination against each of the 24 VIA character strengths. Identification of significant covariation was based on computed exact two-sided significance levels. Some of the character strengths did not occur frequently enough in the sample for the results to be conclusive, since they had chi-square scores with one or more cells with an expected count less than five. In the spirit of exploration, these inconclusive results, which are clearly marked, are included for discussion as they may indicate interesting possibilities for research with larger samples.

Tables 2 and 3 show the results for each of the four type dichotomies. In Table 2, we note that the character strengths of *vitality* ($p < .005$) and *love* ($p < .05$) are more likely among Es than Is and *love of learning* ($p < .005$) and *humility* ($p < .05$) are more likely among Is than Es although there were too few occurrences of humility in the sample for the results to be conclusive. Ss are more likely to have character strengths of *integrity* ($p < .005$) and *fairness* ($p < .05$), while Ns are more likely to have *creativity* ($p < .05$). Inconclusive results were found for *prudence* among Ss ($p < .05$), and vitality ($p < .05$) and *social intelligence* ($p < .05$) among Ns. Table 3 shows that Ts are more likely to have *open-mindedness* ($p < .05$) while Fs are more likely to have love ($p < .05$), and *gratitude* ($p < .005$). *Persistence* is more likely among Js ($p < .05$); no relationship was obvious in Ps.

Table 2

Frequency of Extraversion / Introversion and Sensing / Intuition for Character Strengths (n=98)

Character Strength	Strength Count (*n*)	E *n*=49	I *n*=49	χ^2 *df*=1	S *n*=39	N *n*=59	χ^2 *df*=1
Creativity	27	17	10	2.51	5	22	7.04*
Curiosity	45	21	24	0.37	13	32	4.13
Open-mindedness	30	12	18	1.73	16	14	3.30
Love of learning	23	5	18	9.60***	7	16	1.10
Perspective	13	10	3	4.35	4	9	0.51
Bravery	10	3	7	1.78	5	5	0.48
Persistence	21	7	14	2.97	9	12	0.11
Integrity	32	12	20	2.97	20	12	10.22***
Vitality	12	12	0	13.67***	1	11	5.65* [a]
Love	37	25	12	7.34*	12	25	1.35
Kindness	27	14	13	0.05	12	15	0.33
Social Intelligence	8	7	1	4.90	0	8	5.76* [a]
Citizenship	17	9	8	0.07	10	7	3.11
Fairness	34	14	20	1.62	19	15	5.62*
Leadership	12	5	7	0.38	4	8	0.24
Forgiveness	21	11	10	0.06	8	13	0.03
Humility	9	1	8	6.00*[a]	3	6	0.17
Prudence	7	1	6	3.85	6	1	6.63* [a]
Self-Control	3	1	2	0.34	0	3	2.05
Beauty	18	9	9	0.00	4	14	2.84
Gratitude	31	18	13	1.18	14	17	0.55
Hope	14	9	5	1.33	5	9	0.11
Humor	20	13	7	2.26	7	13	0.24
Spirituality	19	9	10	0.07	11	8	3.22

Note. [a] Results are inconclusive as one or more cells have counts of less than five

* $p < .05$ ** $p < .01$ *** $p \leq .005$

Table 3

Frequency of Thinking /Feeling and Judgment/Perception for Character Strengths (n=98)

Character Strength	Freq. Count (*n*)	T *n*=54	F *n*=44	χ^2 *df*=1	J *n*=65	P *n*=33	χ^2 *df*=1
Creativity	27	19	8	3.51	15	12	1.94
Curiosity	45	27	18	0.81	30	15	0.00
Open-mindedness	30	22	8	5.81*	23	7	2.07
Love of learning	23	15	8	1.24	15	8	0.02
Perspective	13	10	3	2.89	8	5	0.15
Bravery	10	5	5	0.12	7	3	0.07
Persistence	21	13	8	0.50	18	3	4.50*
Integrity	32	19	13	0.35	23	9	0.66
Vitality	12	6	6	0.14	7	5	0.39
Love	37	14	23	7.16*	25	12	0.04
Kindness	27	13	14	0.73	17	10	0.19
Social Intelligence	8	5	3	0.19	4	4	1.04
Citizenship	17	9	8	0.04	11	6	0.02
Fairness	34	19	15	0.01	20	14	1.31
Leadership	12	8	4	0.74	9	3	0.46
Forgiveness	21	11	10	0.08	13	8	0.23
Humility	9	6	3	0.54	6	3	0.00
Prudence	7	6	1	2.86	4	3	0.29
Self-Control	3	3	0	2.52	3	0	1.57
Beauty	18	9	9	0.23	10	8	1.15
Gratitude	31	8	23	15.73***	21	10	0.04
Hope	14	7	7	0.17	7	7	1.95
Humor	20	9	11	1.04	15	5	0.87
Spirituality	19	7	12	3.18	14	5	0.57

* $p < .05$ ** $p < .01$ *** $p < .005$.

Tables 4, 5, and 6 show the chi-square test scores on covariation of character strength with paired type combinations such as EI x TF, which stands for Extraversion/Introversion combined with Thinking/Feeling, resulting in the paired combinations of ET, EF, IT, IF. Only significant results are reported here (see Appendix B for full set of results).

Table 4

Frequency of paired type combinations for character strengths: EI x SN and EI x TF (N=98)

		EI x SN					EI x TF				
	Freq	ES	EN	IS	IN	χ^2	ET	EF	IT	IF	χ^2
Characters Strength	(*n*=)	12	37	27	22	*df*=3	22	27	32	17	*df*=3
Curiosity	45	5	16	8	16	9.45*					
Love	37	6	20	7	5	7.98* [a]	9	16	5	7	12.16**
Gratitude	31						3	15	5	8	16.10***
Creativity	27	1	16	4	6	8.98* [a]	11	6	8	2	8.17* [a]
Love of Learning	23	0	5	7	11	14.43*** [a]	2	3	13	5	10.41* [a]
Perspective	13						7	3	3	0	9.71* [a]
Integrity	32	6	6	14	6	11.00* [a]					
Vitality	12	1	11	0	0	17.54*** [a]	6	6	0	0	13.96** [a]
Social Intelligence	8	0	7	0	1	9.56* [a]					
Humility	9	0	1	3	5	8.04* [a]					
Prudence	7	1	0	5	1	8.36* [a]	0	1	6	0	9.98* [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

* $p < .05$ ** $p < .01$ *** $p \leq .005$

Table 5

Frequency of pairs of type indicators for character strengths: EI x JP and SN x TF (N=98)

		EI x JP					SN x TF				
	Freq	EJ	EP	IJ	IP	χ^2	ST	SF	NT	NF	χ^2
Character Strength	(*n*=)	30	19	35	14	*df*=3	23	16	31	28	*df*=3
Integrity	32						12	8	7	5	10.39*
Love	37	17	8	8	4	8.53*	5	7	9	16	8.24*
Gratitude	31						4	10	4	13	17.07***
Creativity	27	7	10	8	2	7.88* [a]	4	1	15	7	11.66** [a]
Open-mindedness	30						12	4	10	4	8.83* [a]
Love of Learning	23	1	4	14	4	12.36*** [a]					
Bravery	10						5	10	0	5	10.47* [a]
Persistence	21	5	2	13	1	8.58* [a]					
Vitality	12	7	5	0	0	13.77*** [a]					
Prudence	7						5	1	1	0	10.28* [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

* $p < .05$ ** $p < .01$ *** $p \leq .005$

Table 6

Frequency of paired type combinations for character strengths: SN x JP and TF x JP (N=98)

		NP x JP					TF x JP				
	Freq	SJ	SP	NJ	NP	χ^2	TJ	TP	FJ	FP	χ^2
Character Strength	(*n*=)	31	8	34	11	*df*=3	38	26	27	17	*df*=3
Gratitude	31						7	1	14	9	16.51***
Creativity	27	4	1	11	11	8.02* [a]					
Integrity	32	15	5	8	4	11.17* [a]					
Fairness	34	13	6	7	8	9.52* [a]					
Prudence	7	4	2	0	1	8.36* [a]	5	1	1	0	10.28* [a]
Hope	14						6	1	1	6	9.51* [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

* $p < .05$ ** $p < .01$ *** $p \leq .005$

Table 7 summarizes the results in Tables 2 through 6, showing the covariation of each type or paired combination with character strengths. Only significant results are shown, with annotations on inconclusive results.

Table 7

Covariation of Type with Character Strengths

Type	Character Strengths
E	Vitality***, Love*
I	Love of learning***, Humility and modesty* [a]
S	Integrity***, Fairness*, Prudence* [a]
N	Creativity*, Vitality*, Social intelligence* [a]
T	Open-mindedness*
F	Love*, Gratitude***
J	Persistence*
ES	Integrity* [a], Love* [a]
EN	Creativity* [a] , Vitality*** [a], Love* [a], Social intelligence* [a]
IS	Integrity* [a], Prudence* [a]
IN	Curiosity*, Love of learning*** [a] , Modesty and humility* [a]
ET	Creativity* [a], Perspective* [a], Vitality*** [a]
EF	Love**, Gratitude***, Vitality*** [a]
IT	Love of learning* [a], Prudence* [a]
EJ	Love*, Vitality*** [a]
EP	Creativity* [a], Vitality*** [a]
IJ	Love of learning*** [a], Persistence* [a]
ST	Integrity*, Open-mindedness* [a], Bravery* [a], Prudence* [a]
SF	Integrity*, Gratitude***
NT	Creativity** [a]
NF	Love*, Bravery* [a]
SP	Integrity* [a], Fairness* [a], Prudence* [a]
SJ	Integrity* [a]
NP	Creativity* [a]
FJ	Gratitude***
FP	Gratitude*** , Hope* [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

* $p < .05$ ** $p < .01$ *** $p \leq .005$

A summary of the covariation of character strength with type is shown in Table 8.

Table 8

Summary of Covariation of Character Strength with Type Preference

Virtue	Character Strength	Type Preferences
Wisdom	Creativity	N*, EN* [a], ET* [a], EP* [a], NT** [a], NP* [a]
	Curiosity	IN*
	Open-mindedness	T*, ST* [a]
	Love of learning	I***, IN*** [a], IT* [a], IJ*** [a]
	Perspective	ET* [a]
Courage	Bravery	ST/NF* [a]
	Persistence	J*, IJ* [a]
	Integrity	S***, ST/SF*, ES/IS* [a], SJ/SP* [a]
	Vitality	E***, N* [a], EN** [a], ET/EF*** [a], EP/EJ*** [a]
Humanity	Love	E*, F*, EF**, EJ*, NF*, EN* [a]
	Kindness	
	Social intelligence	N* [a], EN* [a]
Justice	Citizenship	
	Fairness	S*, NP/SP* [a]
	Leadership	
Temperance	Forgiveness and mercy	
	Humility and modesty	I* [a], IN* [a]
	Prudence	S* [a], IS* [a], IT* [a], ST* [a], SP* [a]
	Self-regulation	
Transcendence	Appreciation of beauty & excellence	
	Gratitude	F**, EF***, SF***, FJ/FP***
	Hope	FP* [a]
	Humor	
	Spirituality	

Note. [a] Results are inconclusive as one or more cells have counts of less than five

* $p < .05$ ** $p < .01$ *** $p \leq .005$

Tables 7 and 8 show that there is no covariation between P and any character strength. The paired combinations of IF, IP, NJ, TJ, and TP also do not covary with any character strength.

For further information, we have attached the distribution table of MBTI types in the study population (Appendix C) and the distribution of character strengths (Appendix D).

Discussion

The results of the study show covariations between seven of the eight individual type preferences, with the exception of perceiving, with 9 of 24 character strengths, as well as covariations between various paired type combinations and strengths (as noted in Table 7). This answers our basic research question of whether there is covariation between type preferences and particular character strengths positively and quite convincingly.

From a type perspective

Sixteen of the 24 VIA character strengths covary with one or more of the MBTI type dichotomies or paired combinations although the test results on six of these remain inconclusive (Table 8 refers). Eight of the nine most prevalent strengths, as shown in Appendix D, namely, curiosity, love, fairness, integrity, gratitude, love of learning, creativity, and open-mindedness, have significant covariation(s) with one or more of the MBTI type dichotomies or paired combinations. Of note is the strong covariation between vitality and extraversion ($p<.005$). It is also interesting that curiosity, the most frequently occurring strength, covaries with the paired combination of introversion and intuition (*IN*) but not with any particular type dichotomy. Love is the only character strength that covaries with more than one individual type dichotomy, namely, with E and F.

It seems that that paired combinations might have a carryover effect from one of the dichotomies in the pair. For example, SF covaries with both integrity and gratitude, whereas integrity only covaries with S but not F, and gratitude covaries with F but not S. In the four cases where there is no likelihood of carryover effect, namely curiosity, perspective, bravery, and hope, it

may be that the combination of individual types produce a dynamically unique type profile that is more than just the sum of the parts.

Curiosity is such a strength that only covaries with IN but not I or N. What is it about the pairing of I and N that creates an association that does not show up with I or N independently? Table 1 describes curiosity as discovery, exploration, and taking an interest in all ongoing experience, while Myers describes the IN combination as finding "greatest value in the interpretation of life and the promotion of understanding" (1998, p. 81). Perspective covaries with ET without covarying with either E or T separately. This strength is characterized by giving wise counsel to others, so an extraverted thinker who tends to have a broad experience of what life presents and a bent toward "enlargement of human knowledge and understanding" (1998, p.68) could be expected to have more worldly wisdom to share with the outer world. Hope, described in Table 1 as expecting the best, covaries inconclusively with FP. It is understandable how the F focus on happy endings influenced by the P tendency to stay open to whatever life hands outs, eagerly expecting new experiences and loathe to foreclose any situation with irrevocable judgment, might be hopeful. Bravery covaries with SN and TF pairs rather inconclusively since only 10 participants included bravery as a signature strength and half of them were STs and half were NFs. This may be a sampling anomaly worth watching out for in a larger sample.

From a Strengths Perspective

Wisdom strengths are cognitive strengths (see Table 1) that are logical and rational in nature (Peterson & Seligman, 2004), which may explain the covariation of the logical and impersonal T types with all but one of the wisdom strengths. Curiosity is the exception. Wisdom types are clustered around the EI and SN dichotomies with creativity and perspective more common among Es and curiosity and love of learning more common among Is. Creativity, curiosity, and love of learning all covary with Ns who crave inspiration and prefer the joy and enterprise of opportunities and

possibilities (Myers, 1998). In contrast, we note that open-mindedness is more common among Ss who are practical, factual and detail-oriented (Myers, 1998), reflecting the individual's search and evaluation of evidence and opinions different from those held personally (Peterson & Seligman, 2004). An earlier finding of a correlation between N and the character strength of perspective (Stone, 2005) was not supported by the results of our study.

Curiosity and love of learning both covary with IN, a type combination that tends to value knowledge for its own sake (Myers, 1998). The covariation with IN indicates that both love of learning and curiosity are more of an internal state than an activity. Cognitive process theory indicates that curiosity is fueled by the anxiety-provoking nature of inner conceptual conflicts (Hebb, 1949; Beswick, 1971, as cited in Peterson & Seligman, 2004), which corresponds to an IN's drive to make sense of amassed information through internal pattern recognition and concept formation (Myers, et al, 1998). The fact that love of learning also covaries with J while curiosity has no other covariations provides a helpful insight into the difference between the two. The J covariation represents the action orientation and need for organization involved in love of learning described in Table 1 as systematic accrual of knowledge. This is consistent with the view that love of learning may be conceptualized as effectance motivation or the drive for competent interaction with the world (Peterson & Seligman, 2004), thus necessitating more decisiveness than mere curiosity (White, 1959 in Peterson & Seligman, 2004; Myers, 1998).

The VIA-IS does not include sensation-seeking as a construct for curiosity, which helps explain the association of curiosity with I types. Introverts delight in novel, unanticipated, and affect–arousing experiences but not the sensation-producing aspects of experiences, according to a study which examined correlations between type and Zuckerman's Sensation Seeking Scale (Thorne & Gough, 1991). In terms of the EI orientation, past research had shown that Es tend to be sensation-

seekers whereas I types prefer to reduce the sensation-producing aspects of their experience (Thorne & Gough, 1991).

The strengths with an EN covariation, namely, creativity, love, vitality, and social intelligence, are strengths that involve other people and the external world. This supports observations of ENs who tend to be enthusiastic about living well, find meaning in life through shared values and successful interpersonal relationships, and use their "intuitive and global thought processes" (Berens & Nardi, 1999, p.36) to change the reality of the world around them (Myers, 1998).

That creativity also covaries with EN, ET, EP, NT, and NP type pairs seems to add up to ENTP, a type profile that matches the definition of creativity being both original and adaptive (Peterson & Seligman, 2004). Berens and Nardi (1999), describe the ENTP as an imaginative and clever *explorer inventor* who enjoys the creative process, sees the world from "multiple perspectives using multiple models" and trusts instincts to find "creative, unusual and efficient" (p.32) solutions to resolve problems.

Type studies indicate that Is respond favorably to "open, fluid, task-linked environments" (Thorne & Gough, 1991, p. 73), and Ss prefer friction-free defined and regularized environments where they can focus on practical and realistic problem-solving. Introverted Sensing (IS) types tend to be "thoughtful realists" (Myers, 1998, p.30) and this is perhaps well-reflected in its covariation with the signature strengths of integrity, fairness, and prudence, all of which are concerned with what is true, proper and right. Persistence co-varies with IJ, the introvert who deals with the world using the judging function, marching to a personal drum beat as it were, seemingly adamant and inflexible until convinced by compelling reason to change course or timing (Myers et al. 1998).

The VIA description of prudence and the ISTJ profile are very close. The prudent person according to the VIA classification is very careful and avoids potentially dangerous situations by

thinking through consequences (Peterson & Seligman, 2004). This is a very close match for ISTJ types, the dependable, sensible and risk adverse *planner inspectors* whose theme is planning ahead meticulously, monitoring and regulating, and ensuring predictable quality and conservation of resources or culture (Berens & Nardi, 1999).

Love covaries with E, F, EF, EJ and NF types. Putting the various type combinations together suggests that the ENFJ type may characterize the signature strength of "capacity to love and be loved" (Steen, Kachorek & Peterson, 2003). For ENFJs, meaning and purpose in life comes from nurturing relationships and empathic connections that foster mutual growth through communication and sharing values, "drawing the best out of others" (Berens & Nardi, 1999, p.36). This mirrors the VIA definition of love being "within a reciprocated relationship with another … marked by the sharing of aid, comfort and acceptance … (involving) strong positive feelings, commitment, and even sacrifice" (Peterson & Seligman, 2004, p. 293). Comparing type tendencies to the VIA constructs of love, we find that the EF combination may account for the outpouring of care and affection as well as the concern for harmony and acceptance. NF's profound insights into human relationships may support the willingness to take risks in building relationships, and the tendency of EJs to cause things to happen makes them active and effective in caring for others (Myers et al., 1998).

Gratitude covaries very significantly with F alone and in EF, SF, FJ/ FP combinations ($p<.01$). Grateful people are prompt and profuse in appreciating the good around them and in others (Peterson & Seligman, 2004). This may be observed in SFs who exude warmth and concern for others based on personal values and empathy and EFs who reach out to people and expect mutual appreciation of who they are and their contributions. Both the FJs who express support and encourage others' growth and FPs who are 'adaptable, affiliative harmony seekers' (Myers et al., 1998, p.54), add to the grateful caricature. All said, for the ESFJ/ESFP, being happy and living

harmoniously means that life is a process of acceptance and giving on a day-to-day basis (Berens & Nardi, 1999).

This study highlighted several areas of covariation between signature strengths and type. Some are significant and others are inconclusive due to cell count deficiency. The findings of this study imply that observations of type (Myers et al, 1998, Berens & Nardi, 1999, etc.) and several constructs of character strength (Peterson & Seligman, 2004) are mutually supportive. Further study may be warranted to validate these findings and to explore further into the value that may be uncovered from such research.

Improvements to Method and Procedure

The external validity of data and findings in a study like this may be threatened by the effect of social desirability on participant responses or by individuals who second-guess the intention of the survey/questionnaire and respond to perceived demand characteristics (Bordens & Abbott, 2002). In order to mitigate the threat to external validity, we adhered to a written script in the administration of the MBTI to ensure proper framing of the situational context for the self-report. A better alternative to eradicate the effect of social desirability and narcissism would be the use of nontransparent self-report instruments (Peterson & Seligman, 2004).

The sample size for this study was also a limiting factor which might have led to 34 out of 55 of the significant test results being inconclusive. To validate the results of this study, a replication with a considerably larger sample size of 500 to 1000 people, would be ideal.

The findings in this study may be skewed as a result of the data that we used in the analysis. We had only asked for the participants' five VIA signature strengths and the 4-letter type, instead of the full score details. It seems that the VIA-IS ranking of signature strengths is processed by sorting the strengths by score size and where the scores are identical, the strengths are arranged alphabetically. Without access to the raw VIA scores, we were unable to determine the extent of

variability across the 24 character strengths. Similarly, we did not use the MBTI preference scores which could have yielded information about the clarity of the preference in each dichotomy instead of the assumed extreme choice. As a result, we lacked the ability to determine how much any covariation depended on the intensity of a strength or the clarity of a type preference. To enhance the understanding of the relationship between type preference and character strength, future researchers should consider using the actual scores on both the MBTI and VIA-IS, which are available upon request from their respective proprietary owners.

The sample diversity in this study was handicapped by the snowball sampling method used, given that participants tend to recruit others like themselves demographically. Using sample recruitment methods that are more random could yield a more representative sample in terms of gender, age, education, and ethnicity, thus making the results more generally applicable.

Going Forward

Further research into this area could take several directions. Going beyond understanding the covariation of the two instruments, we would like to study the synergistic effect of different combinations of signature strengths and type on individual behavior. Longitudinal studies into the stability and vulnerability of strength-type combinations across individual life spans may yield useful insights for application in the development of character education initiatives. The study of the two measures of strengths and types together might highlight informational gaps that could influence the design of the constructs of the instruments.

Understanding the influences of strength-type combination on behavior through empirical research might contribute richly to applications of positive psychology. For example, how do strength-type combinations affect explanatory styles? Given that optimism can be learned (Seligman, 1990), it would be interesting to find out how much strength-type combinations enable or inhibit such learning. Such understanding of behavior might also be useful to coaches and consultants in the

design or selection of highly individualized interventions for clients, particularly in reducing the costs associated with trial and error and improving the sustainability of personal change effects. Resiliency training programs would also benefit from research in this area.

The study of synergistic applications of personality profiling instruments could be extended to research using other instruments such as the Gallup Strengthsfinder survey (Buckingham & Clifton, 2001) or the Hermann Brain Dominance Inventory (Hermann International, n. d.). Instead of taking an either-or approach to the selection of personality tools, studies like these could improve the attractiveness of using multiple instruments to add perspective and so enhance the effectiveness of change interventions where self-awareness is a key factor.

This study has affirmed the need for research that examines, by simple comparison or more complex analyses, the synergistic value of the tools and instruments designed by psychologists in their respective fields to measure specific factors of personality or character. Such research findings would augment and enhance the impact and value of the separate contributions of such measures to the understanding and management of human behavior.

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Appendix A: Participant Recruitment Leaflet

VOLUNTEERS INVITED

Participants are wanted for a positive psychology research project studying the connection between personality type and character strengths.

You are required to take two standardized personality testing measures. These measures are designed to provide some information about your personality type and character strengths.

The personality testing measures will take about an hour (approximately half an hour each) to complete. You may also be asked to participate in a one-hour interview.

The data you provide will be kept confidential and stored in password protected files. You may withdraw from participation at any time during the data collection period.

Criteria: Aged 18 and above
Proficient in English
Have internet access
Willing to be interviewed

Interested?

Please contact Sulynn 267 312 8066

or Kathryn 919 357 4098

Or email us at

type.strengths@gmail.com

Appendix B: Full Set of Computed Results

Table B1 presents the results computed from analyzing character strengths with single type dichotomies. Tables B2 through B4 give the results for paired combinations.

p entries with superscript [a] indicate that these results are inconclusive because at least one cell had an expected count of less than 5.

Table B1

Incidence of MBTI type preferences with particular character strengths (n=98)

Strengths	E	I	χ^2	*p*	S	N	χ^2	*p*	T	F	χ^2	*p*	J	P	χ^2	*p*
	49	49	*df*=1		39	59	*df*=1		54	44	*df*=1		65	33	*df*=1	
Creativity	17	10	2.51	.17	5	22	7.04	.01	19	8	3.51	.07	15	12	1.94	.23
Curiosity	21	24	0.37	.34	13	32	4.13	.06 [a]	27	18	0.81	.42	30	15	0.00	1.00
Open-mindedness	12	18	1.73	.27	16	14	3.31	.08 [a]	22	8	5.81	.03	23	7	2.07	.17
Love to learn	5	18	9.60	.00	7	16	1.10	.34	15	8	1.24	.19	15	8	0.02	1.00
Perspective	10	3	4.35	.07	4	9	0.51	.56	10	3	2.89	.13	8	5	0.15	.76 [a]
Bravery	3	7	1.78	.51[a]	5	5	0.48	.75 [a]	5	5	0.12	.75 [a]	7	3	0.07	1.00 [a]
Persistence	7	14	2.97	.14	9	12	0.11	.80	13	8	0.50	.62	18	3	4.50	.04
Integrity	12	20	2.97	.13	20	12	10.22	.00	19	13	0.35	.67	23	9	0.66	.50
Vitality	12	0	13.67	.00	1	11	5.65	.03 [a]	6	6	0.14	.76	7	5	0.39	.75 [a]
Love	25	12	7.34	.01	12	25	1.35	.29	14	23	7.16	.01	25	12	0.04	1.00
Kindness	14	13	0.05	1.00	12	15	0.34	.65	13	14	0.73	.50	17	10	0.19	.81
Social	7	1	4.90	.06 [a]	0	8	5.76	.02 [a]	5	3	0.19	.73	4	4	1.04	.44
Citizenship	9	8	0.07	1.00	10	7	3.11	.10	9	8	0.04	1.00	11	6	0.02	1.00
Fairness	14	20	1.62	.29	19	15	5.62	.03*	19	15	0.01	1.00	20	14	1.31	.27
Leadership	5	7	0.38	.76	4	8	0.24	.76[a]	8	4	0.74	.54	9	3	0.46	.54
Forgiveness	11	10	0.06	1.00	8	13	0.03	1.00	11	10	0.08	.81	13	8	0.23	.80
Humility	1	8	6.00	.03 [a]	3	6	0.17	.74	6	3	0.54	.51 [a]	6	3	0.00	1.00 [a]
Prudence	1	6	3.85	.11 [a]	6	1	6.63	.02 [a]	6	1	2.86	.13 [a]	4	3	0.29	.69
Self-Control	1	2	0.34	1.00 [a]	0	3	2.05	.27 [a]	3	0	2.52	.25 [a]	3	0	1.57	.32 [a]
Beauty	9	9	0.00	1.00	4	14	2.84	.11	9	9	0.23	.79	10	8	1.15	.41
Gratitude	18	13	1.18	.39	14	17	0.55	.51	8	23	15.73	.00	21	10	0.04	1.00
Hope	9	5	1.33	.39	5	9	0.11	.78	7	7	0.17	.78	7	7	1.95	.22
Humor	13	7	2.26	.21	7	13	0.24	.30	9	11	1.04	.33	15	5	0.85	.43
Spirituality	9	10	0.07	1.00	11	8	3.22	.12	7	12	3.18	.12	14	5	0.57	.59

Note. [a] Results are inconclusive as one or more cells have counts of less than five

Table B2

Frequency of paired type combinations for character strengths: EI x SN and EI x TF (n=98)

Strengths	EI x SN						EI x TF					
	ES 12	EN 37	IS 27	IN 22	χ^2 *df*=3	*p*	ET 22	EF 27	IT 32	IF 17	χ^2 *df*=3	*p*
Creativity	1	16	4	6	8.98	.03 [a]	11	6	8	2	8.17	.04 [a]
Curiosity	5	16	8	16	9.45	.02	12	9	15	9	2.73	.44
Open-mindedness	4	8	12	6	4.00	.27	7	5	15	3	7.20	.07
Love of learning	0	5	7	11	14.43	.00 [a]	2	3	13	5	10.41	.01 [a]
Perspective	2	8	2	1	4.63	.22 [a]	7	3	3	0	9.71	.02 [a]
Bravery	0	3	5	2	3.61	.33 [a]	0	3	5	2	3.60	.32 [a]
Persistence	1	6	8	6	3.34	.36 [a]	3	4	10	4	3.37	.35 [a]
Integrity	6	6	14	6	11.00	.01 [a]	5	7	14	6	3.39	.35
Vitality	1	11	0	0	17.54	.00 [a]	6	6	0	0	13.96	.00 [a]
Love	6	20	7	5	7.98	.05 [a]	9	16	5	7	12.16	.01
Kindness	5	9	7	6	1.43	.73 [a]	7	7	6	7	3.06	.39 [a]
Social	0	7	0	1	9.56	.02 [a]	4	3	1	0	5.85	.11 [a]
Citizenship	4	5	6	2	4.01	.28 [a]	3	6	6	2	1.07	.76 [a]
Fairness	4	10	15	5	7.55	.06 [a]	6	8	13	7	1.65	.65
Leadership	1	4	3	4	1.00	.81 [a]	3	2	5	2	0.97	.84 [a]
Forgiveness	3	8	5	5	0.25	.97 [a]	7	4	4	6	5.57	.14 [a]
Humility	0	1	3	5	8.04	.04 [a]	0	1	6	2	6.84	.07 [a]
Prudence	1	0	5	1	8.36	.03 [a]	0	1	6	0	9.98	.02 [a]
Self-Control	0	1	0	2	3.94	.26 [a]	1	0	2	0	2.65	.55 [a]
Beauty	2	7	2	7	4.85	.19 [a]	4	5	5	4	0.46	.95 [a]
Gratitude	6	12	8	5	2.74	.44 [a]	3	15	5	8	16.10	.00
Hope	1	8	4	1	3.68	.31 [a]	3	6	4	1	2.46	.49 [a]
Humor	4	9	3	4	3.09	.37 [a]	6	7	3	4	3.64	.32 [a]
Spirituality	4	5	7	3	3.51	.34 [a]	1	8	6	4	5.11	.17 [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

Table B3

Frequency of paired type combinations for character strengths: EI x JP and SN x TF (n=98)

Strengths	EI x JP						SN x TF					
	EJ 30	EP 19	IJ 35	IP 14	χ^2 *df*=3	*p*	ST 23	SF 16	NT 31	NF 28	χ^2 *df*=3	*p*
Creativity	7	10	8	2	7.88	.05 [a]	4	1	15	7	11.66	.01 [a]
Curiosity	13	8	17	7	0.39	.94	8	5	19	13	5.49	.14
Open-mindedness	9	3	14	4	3.45	.33 [a]	12	4	10	4	8.83	.03 [a]
Love of learning	1	4	14	4	12.36	.01 [a]	4	3	11	5	3.65	.33 [a]
Perspective	6	4	2	1	4.38	.23 [a]	3	1	7	2	3.94	.28 [a]
Bravery	2	1	5	2	1.81	.65 [a]	5	0	0	5	10.47	.01 [a]
Persistence	5	2	13	1	8.58	.03 [a]	6	3	7	5	0.60	.91 [a]
Integrity	9	3	14	6	4.08	.27 [a]	12	8	7	5	10.39	.02
Vitality	7	5	0	0	13.77	.00 [a]	1	0	5	5	6.20	.10 [a]
Love	17	8	8	4	8.53	.04	5	7	9	16	8.24	.04
Kindness	9	5	8	5	1.00	.82 [a]	5	9	23	21	2.63	.46 [a]
Social Intelligence	4	3	0	1	5.70	.12 [a]	0	0	5	3	6.33	.08 [a]
Citizenship	5	4	6	2	0.28	.96 [a]	5	5	4	3	3.75	.31 [a]
Fairness	9	5	11	9	6.46	.09 [a]	12	7	7	8	6.15	.11
Leadership	4	1	5	2	1.09	.81 [a]	3	1	5	3	1.05	.83 [a]
Forgiveness	6	5	7	3	0.35	.97 [a]	4	4	7	6	0.37	.95 [a]
Humility	0	1	6	2	6.48	.09 [a]	3	0	3	3	2.12	.61 [a]
Prudence	1	0	3	3	6.53	.09 [a]	5	1	1	0	10.28	.02 [a]
Self-Control	1	0	2	0	1.88	.77 [a]	0	0	3	0	6.69	.09 [a]
Beauty	4	5	6	3	1.43	.72 [a]	2	2	7	7	2.99	.41 [a]
Gratitude	13	5	8	5	3.50	.32 [a]	4	10	4	13	17.07	.00
Hope	3	6	4	1	5.91	.12 [a]	3	2	4	5	0.41	.94 [a]
Humor	10	3	5	2	4.47	.22 [a]	4	3	5	8	1.65	.66 [a]
Spirituality	5	4	9	1	2.42	.50 [a]	5	6	2	6	6.83	.08 [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

Table B4

Frequency of paired type combinations for character strengths: SN x JP and TF X JP (n=98)

Strengths	SN x JP						TF x JP					
	SJ 31	SP 8	NJ 34	NP 25	χ^2 *df*=3	*p*	TJ 38	TP 16	FJ 27	FP 17	χ^2 *df*=3	*p*
Creativity	4	1	11	11	8.02	.04 [a]	11	8	4	4	6.41	.10 [a]
Curiosity	9	4	21	11	7.09	.07 [a]	20	7	10	8	1.59	.67
Open-mindedness	14	2	9	5	4.81	.20 [a]	17	5	6	2	7.31	.06 [a]
Love of learning	5	2	10	6	1.61	.66	10	5	5	3	1.40	.72 [a]
Perspective	3	1	5	4	0.58	.92 [a]	6	4	2	1	3.74	.29 [a]
Bravery	4	1	3	2	0.50	.93 [a]	4	1	3	2	0.35	1.00 [a]
Persistence	9	0	9	3	5.08	.17 [a]	11	2	7	1	4.80	.19 [a]
Integrity	15	5	8	4	11.17	.01 [a]	12	7	11	2	5.09	.17
Vitality	1	0	6	5	5.80	.12 [a]	4	2	3	3	0.60	.94
Love	11	1	14	11	2.82	.45 [a]	10	4	15	8	7.49	.06 [a]
Kindness	9	3	8	7	0.71	.83 [a]	8	5	9	5	1.30	.70 [a]
Social	0	0	4	4	6.10	.10 [a]	2	3	2	1	2.96	.42 [a]
Citizenship	8	2	3	4	3.63	.31 [a]	6	3	5	3	0.11	1.00 [a]
Fairness	13	6	7	8	9.52	.02 [a]	11	8	9	6	2.23	.52
Leadership	4	0	5	3	1.32	.82 [a]	7	1	2	2	2.48	.54 [a]
Forgiveness	7	1	6	7	1.33	.74 [a]	8	3	5	5	0.85	.87 [a]
Humility	3	0	3	3	1.06	.86 [a]	4	2	2	1	0.62	.86 [a]
Prudence	4	2	0	1	8.39	.04 [a]	3	3	1	0	5.07	.15 [a]
Self-Control	0	0	3	0	5.83	.12 [a]	3	0	0	0	4.89	.22 [a]
Beauty	3	1	7	7	3.40	.34 [a]	7	2	3	6	4.56	.23 [a]
Gratitude	11	3	10	7	0.57	.88 [a]	7	1	14	9	16.51	.00
Hope	3	2	4	5	2.13	.55 [a]	6	1	1	6	9.51	.02 [a]
Humor	5	2	10	3	3.24	.36 [a]	7	2	8	3	2.20	.55 [a]
Spirituality	10	1	4	4	4.98	.17 [a]	6	1	8	4	4.08	.25 [a]

Note. [a] Results are inconclusive as one or more cells have counts of less than five

Appendix C: Percentages of MBTI Types for 98 Research Participants

Sensing Types with Thinking	Sensing Types with Feeling	Intuitive Types with Feeling	Intuitive Types with Thinking
ISTJ N=16 16.3%	**ISFJ** N=5 5.1%	**INFJ** N=6 6.1%	**INTJ** N=8 8.2%
ISTP N=4 4.1%	**ISFP** N=2 2 %	**INFP** N=4 4.1%	**INTP** N=4 4.1%
ESTP N=1 1%	**ESFP** N=1 1%	**ENFP** N=10 10.2%	**ENTP** N=7 7.1%
ESTJ N=2 2%	**ESFJ** N=8 8.2%	**ENFJ** N=8 8.2%	**ENTJ** N=12 12.2%

E	50.0
I	50.0
S	39.8
N	60.2
T	55.1
F	44.9
J	66.3
P	33.7
IJ	35.7
IP	14.3
EP	19.4
EJ	30.6
ST	23.5
SF	16.3
NF	28.6
NT	31.6
SJ	18.4
SP	2.0
NP	17.3
NJ	27.6
TJ	27.6
TP	8.2
FP	11.2
FJ	18.4
IN	22.5
EN	37.8
IS	27.6
ES	22.5

Figure C1.

Type Table for Study Population (*n*=98)

Appendix D: Strengths Distribution in Study Sample

This figure shows the distribution of frequency of character strengths occurring in the study sample. Only the top five signature strengths of the study participants are represented and analyzed.

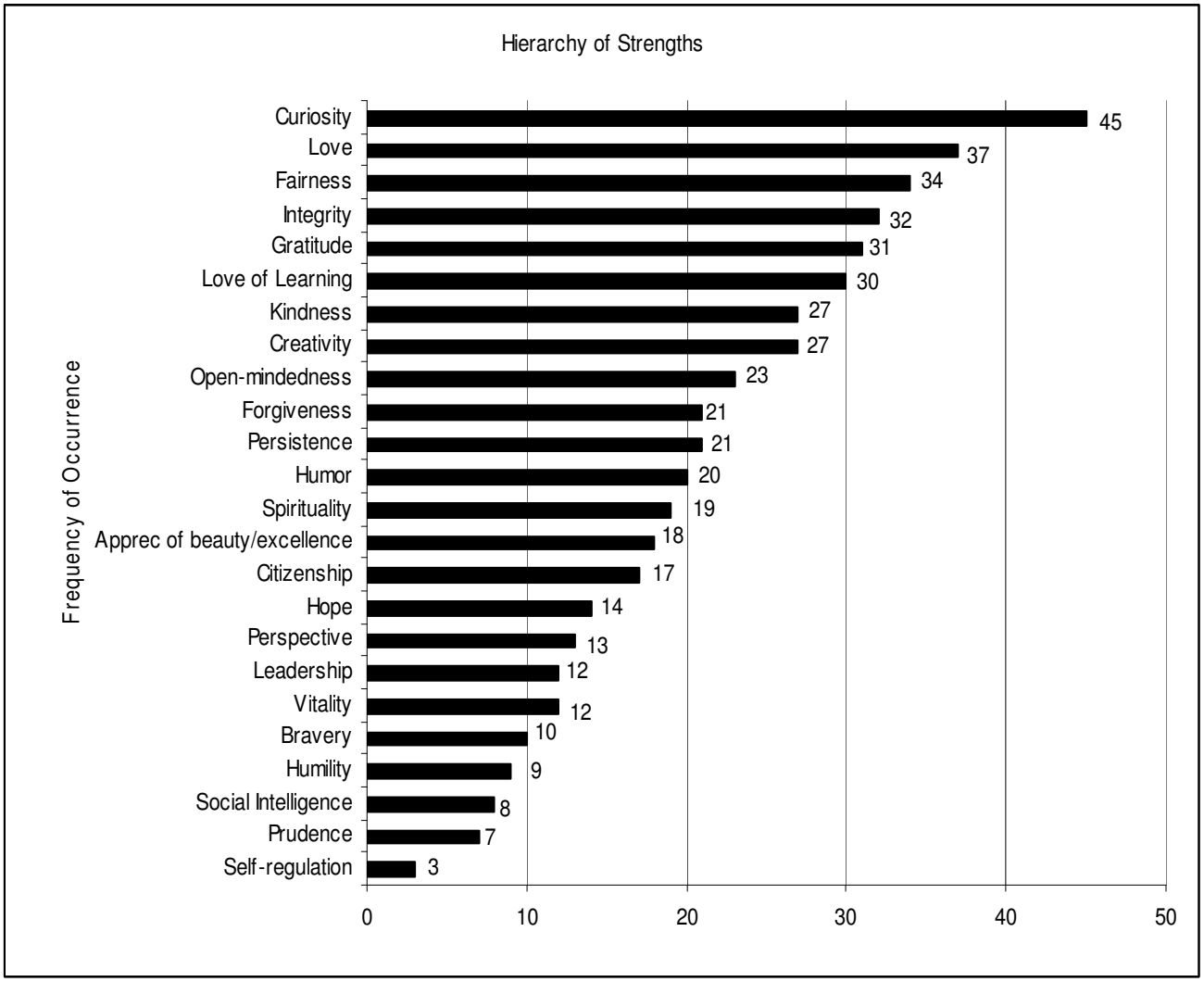

Figure D1

Frequency of Character Strengths in Study Population (*n*=98)