



Review Article

Psychological typology of Sasang medicine

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ABSTRACT

This study briefly reviewed and summarized published studies related to the Sasang typology in order to investigate the common psychological characteristics in each type and suggest conceptual and methodological implications for future research. A total of 44 articles written in Korean between 1990 and 2014, and that used objective measures of personality, were selected from two Korean database for this study. The number of publications, type of scale used, and distribution of each Sasang type were reviewed and summarized. From these works, it was found that there was significant common ground between the classification of Sasang types, which is rooted in Eastern concepts, and the psychological features and types revealed by objective personality measures used in Western psychology. On the basis of these findings, the degree of overlap between Eastern and Western personality typologies was highlighted, and further considerations for developing a more valid and objective classification method, and the limitations of the existing searching method and scope were discussed.

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1. Introduction

“Sasang medicine” was established in the late 19th century by Lee Je-Ma and adopts a somewhat different point of view from the traditional Eastern medicine of China or Korea. Sasang typology is grounded in constitutional theory, which has similarities to both the Greeks’ 4-element theory and the four humors of Hippocratic medicine. This approach also has ties to traditional Eastern medicine that incorporate the concepts of Yin-Yang, the 5-phase theory, and Confucianism, which emphasizes the principle of “control oneself first and control others later.”¹ Plainly speaking, while Western medicine can be characterized as “removing-cause medicine” and Eastern

medicine as “building-up-environment medicine,” Sasang medicine can be regarded as “cure-mind-and-cure-disease medicine.”²

In contrast to the dualistic view of mind and body in the West, the term “constitution” used in Sasang medicine is not a concept that is defined through a keen division between mind and body. Nature, or temperament, in Sasang medicine is a concept that addresses the trait endowed by nature and the dynamic emotional state that may be manifested during interpersonal interactions.³ Therefore, Sasang types are classified through physical aspects, including body type, pulse, proneness to disease, response to medication, and other psychological aspects, including dominant emotional responses and behavioral patterns expressed in interpersonal relationships.

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Although the Sasang-type classification method of Sasang medicine is widely applied in clinical settings in Korea, major standardized objective classification criteria or other consensus-driven standards to differentiate between the four Sasang types have not yet been established. As a result, researchers use varied classification criteria and methodologies, which often creates difficulty when attempting objective comparison between the results of each study. This is also an obstacle when introducing Sasang medicine to foreign agencies or performing cross-cultural research.

This study briefly, rather than systematically, reviewed published research that focused on psychological, rather than physical, characteristics and summarized the results of each study. Consistencies in identifying significant differences between the four Sasang types were also highlighted, and, through this review and summarization process, this study aimed to assess the degree of overlap between Sasang typology in Korea and personality typology in Western psychology. By extension, a final objective of this study was to illustrate the benefits of studying the Sasang types and identify how to best communicate these findings to researchers with a background in Western psychology.

2. Methods

2.1. Locating and screening data

First, 691 articles and 567 master's (or doctorate) theses that included the words "Sasang constitution" in Korean in the title were extracted from the Research Information Sharing Service electronic database hosted by Korea Education and Research Information Service, and 432 articles with the same words in the title were extracted from the National Digital Science Library database hosted by the Korea Institute of Science and Technology Institution, Daejeon, Korea. All results were screened so that the year of publication was between 1990 and 2014. Second, the author manually selected those articles and theses that included reference to objective personality scales in their titles or abstracts. Third, among the master's (or doctorate) theses that were published in articles, the author selected only one that contained more detailed data for this review. The exclusion criteria in this selection process were as follows: persons who held a specific job (i.e., athlete), patients who had a specific physical disease or mental disorder, or patients under the age of 13 years. Following this procedure, a total of 44 studies (32 articles and 12 theses) were screened and reviewed.

2.2. Items of consideration

The selected 44 studies were reviewed for subject matter, publication year, classification method, distribution of each of the four Sasang types, and the name or type of objective psychological scale used. Following this initial review, the psychological characteristics that showed significant differences across the four Sasang types were identified in each study.

3. Results

3.1. Year of publication

Distribution of the year of publication across the selected 44 studies was as follows: one in the year 1994, four in 2000, three in 2001, two in 2002, three in 2003, two in 2004, two in 2005, one in 2007, two in 2008, four in 2009, four in 2010, six in 2011, five in 2012, two in 2013, and three in 2014. The Questionnaire for Sasang Constitution Classification (QSCC), an objective method for classifying the Sasang types, was first developed in 1992,⁴ with a revised version, QSCC II, completed in 1996.⁵ Most reviewed studies used the QSCC II. Considering this trend, the increasing number of studies that used objective psychological scales to identify the psychological features of Sasang types increased substantially from the year 2000, and so this inclination seems to be closely linked to the year of publication. Studies exploring the main characteristics of each Sasang type using objective psychological scales were relatively rare prior to 2000, when the QSCC was not widely known to researchers. These studies increased in number from the beginning of the year 2000, with a steeper increase noticeable from approximately 2010.

3.2. Scales

Comprehensive personality scales, such as the Minnesota Multiphasic Personality Inventory (MMPI) and Temperament and Character Inventory (TCI), were the most frequently used objective measurement types (38%). Scales for measuring emotional state, treatment of emotional stimuli, and specific aspects of personality, such as self-esteem and body image, were the next most frequently employed group (24.3%). This is summarized in [Table 1](#).

3.3. Individuals' demographical characteristics, classification method, and distribution of Sasang types

Students of oriental medicine were the most prolific participants in the reviewed research and appeared in 17 studies (38.6%), followed by adults from the general population (25.0%), nonmedical college students (15.9%), middle- and high-school students (13.6%), and medical patients (6.9%). The majority of studies used the QSCC classification method (67.4%), while 18.6% of the studies relied on the diagnoses of oriental doctors, 11.7% used the Two-Step Questionnaire for Sasang Constitution Diagnosis, and the other small group of studies (2.3%) used body or voice patterns.

Regardless of the type of classification method employed, the results of the classifications reported are summarized in [Table 2](#). In the 44 studies reviewed, a total of 10,496 individuals were classified across the four Sasang types as follows: Tae-Yang type (TY), 1.0%; Tae-Eum type (TE), 34.4%; So-Yang type (SY), 34.1%; and So-Eum type (SE), 30.5%.

3.4. Significant differences between four Sasang types by scale

3.4.1. Tae-Yang type

Among the 26 studies that only applied the QSCC II, 21 studies reported the percentage of TY to be approximately 0%, while

Table 1 – Frequency of scales and scale types used in the reviewed studies

Type of scale	Name of scale (frequency)	Frequency n (%)
Comprehensive personality scales	MBTI (8), TCI (7), MMPI-2 (4), NEO-PI-R (3), K-EPQ (2), SCL-90-R (2), KEPTI (1)	27 (38.6)
Emotion-related scales	TAS-20K (4), BDI (3), PANAS (2), SOM (1), STAI (1), TMMS (1), MAS (1), EEQ (1), AIM (1), AEQ (1), HBDIS (1)	17 (24.3)
Specific personality scales	ACDM (2), SES (2), EDMT (1), ABTS (1), PSE (1), BIS (1), SIS (1), SCS (1), RRQ (1), SSAS (1), SIQ (1)	13 (18.6)
Stress-related scales	CISS (2), SCQ (1), SOS (2), SF-12 (2)	7 (10.0)
Aptitude-related scales	JAT (1), KATB (1), AMT (1), MLST (1)	4 (5.7)
Cognitive function	CPT (1), Stroop test (1)	2 (2.9)

ABTS, A and B Type Personality Scale; ACDM, Assessment of Career Decision Making scale; AEQ, Ambivalence of Emotional Expressiveness Questionnaire; AIM, Affect Intensity Measure; AMT, Academic Motivation Test; BDI, Beck Depression Inventory; BIS, Body Image Scale; CISS, Coping for Stressful Situation; CPT, Continues Performance Test; EDMT, Ehwa Defense Mechanisms Test; EEQ, Emotional Expressiveness Questionnaire; HBDIS, Hwa-Byung Diagnostic Interview Schedule; JAT, Job Aptitude Test; KATB, Aptitude Test; KEPTI, Korean Enneagram Type Indicator; K-EPQ, Eysenck Personality Questionnaire (Korean version); MAS, Mood Awareness Scale; MBTI, Mayers and Briggs Type Indicator; MLST, Multidimensional Learning Strategy Test; MMPI-2, Minnesota Multiphasic Personality Inventory-2; NEO-PI-R, Revised NEO-Personality Inventory; PANAS, Positive and Negative Affect Schedule; PSE, Physical Self-Efficacy Scale; RRQ, Rumination and Reflection Questionnaire; SCL-90-R, Symptom Checklist-90—Revised; SCQ, Ways of Stress Coping Questionnaire; SCS, Self-Consciousness Scale; SES, Rosenberg Self Esteem Scale; SF-12, Health Survey—short form 12; SIQ, Symptom Interpretation Questionnaire; SIS, Self-Identity Scale; SOM, Somatization Scale in SCL-90-R; SOS, Symptoms of Stress; SSAS, Somato-Sensory Amplification Scale; STAI, State-Trait Anxiety Inventory; TAS-20K, Toronto Alexithymia Scale-20; TCI, Temperament and Character Inventory; TMMS, Trait Meta-Mood Scale.

the other five studies reported in the range of 0.1–3.9%. As a result, these studies either failed to include TY in the analysis or were unable to identify any significant results with this type. In one study, however,⁶ 9.3% of 226 junior college students who received the highest scores for extraversion on the introversion–extraversion dimension in the Mayers and Briggs Type Indicator (MBTI) were classified as TY. In another study,⁷ 6.9% of 175 general adults who received the lowest scores on the depression and anxiety scales in the Symptom Check List-90—Revised (SCL-90-R) were classified as TY.

3.4.2. Tae-Eum type

Significant differences between TE and the other types are summarized in Table 3.

On the MBTI, TE tended toward introversion in the introversion–extraversion dimension (although this tendency was not as pronounced as that for SE). For example, four of the six studies reported that TE directed toward introversion, and, while the remaining two suggested a leaning toward extroversion, this finding was not as strong as the former finding (I: 52:48, E: 57:43). The facts that the four studies that argued for a trend toward introversion included medical students and the two that reported a movement toward extraversion included female college students or nonmedical students need to be further explored. By contrast, TE showed consistent

directional movement in all six studies toward sensing in the sensing–intuition dimension, and toward thinking (5 studies) in the thinking–feeling dimension. In the judging–perceiving dimension, however, while leaning slightly toward perceiving, TE showed no clear dominancy. To summarize, the TE type is represented by those demonstrating introversion, sensing, thinking, and perceiving among the 16 MBTI personality types.

When reviewing research that includes the TCI, it was found that there were consistently more significant differences between temperament scales than between character scales. On the novelty seeking and harm avoidance scales, TE was consistently placed between SY and SE. On the reward dependence and persistence scales, however, TE tended to receive higher scores than SE. On the MMPI-2, TE was closer to SE than to SY on the depression (2) and hypomanic scales (9), but was closer to SY than to SE on both the social introversion (0) and the introversion scale (INTR) in PSY-5 (psychopathology-five factor) scales. On the Revised NEO—Personality Inventory (NEO-PI-R), there were significant differences between extraversion and neuroticism, in which TE was closer to SY than to SE. On the Eysenck Personality Questionnaire (K-EPQ), the same result was shown for extraversion, but TE was closer to SE than to SY on the impulsiveness scale.

Table 2 – Constitution distribution by patient group.

	TY	TE	SY	SE	Total
MS	2 (0.1)	565 (29.6)	538 (28.2)	806 (42.2)	1911
GA	76 (1.5)	1822 (36.7)	1650 (33.2)	1419 (28.6)	4967
GU	21 (1.6)	422 (32.9)	422 (32.9)	414 (32.4)	1279
P	5 (0.4)	386 (35.8)	462 (42.8)	225 (20.9)	1078
MH	4 (0.3)	414 (32.8)	511 (40.5)	332 (26.3)	1261
total	108 (1.02)	3609 (34.38)	3583 (34.14)	3196 (30.45)	10,496 (100)

Data are presented as n (%).

GA, adults in the general population; GU, nonmedical college students; MH, middle- or high-school students; MS, students of Oriental medicine; P, visiting patients; SE, So-Eum type; SY, So-Yang type; TE, Tae-Eum type; TY, Tae-Yang type.

Table 3 – Summary of significant features in Tae-Eum type

Main scale	Features
MBTI	
Preference index	E-I: 45.8:58.2, S-N: 83.3:16.7, T-F: 70.8:29.2, J-P: 62.5:37.5 (Choi et al., 2000) ⁸ E-I: 17.4:82.6, S-N: 56.5:43.5, T-F: 60.9:56.5, J-P: 39.1:60.9 (Chae et al., 2001) ⁹ E-I: 41.7:58.3, S-N: 79.2:20.8, T-F: 62.5:37.5, J-P: 18.8:81.2 (Park, 2003) ¹⁰ E-I: 33.3:66.7, S-N: 71.0:29.0, T-F: 55.1:44.9, J-P: 49.3:50.7 (Lee, 2004) ¹¹ E-I: 52.0:48.0, S-N: 80.0:20.0, T-F: 45.0:55.0, J-P: 61.0:39.0 (Choi and Shin, 2007) ⁶ E-I: 57.1:42.9, S-N: 65.7:34.3, T-F: 60.0:40.0, J-P: 45.7:54.3 (Song et al., 2009) ¹²
Dominant function	S (41.7), T (8.3), N (33.3), F (16.7) (Choi et al., 2000) ⁸ S (43.5), T (30.4), N (4.3), F (21.7) (Chae et al., 2001) ⁹
Character type	ESTJ (25.4) (Choi et al., 2000) ⁸ , ISTJ (26.1) (Chae et al., 2001) ⁹ , ISTJ (17.4) (Lee, 2004) ¹¹ , ESFJ = ISTJ (—) (Choi and Shin, 2007) ⁶ , ESTJ (17.1) (Song et al., 2009) ¹²
TCI	
Temperament	NS: SE < SY, TE; HA: SE > TE > SY; P: SE < SY, TE (Choi, 2010) ¹³ RD: SY > SE > TE (Lee, 2010) ¹⁴ ; NS: SY > TE, SE; RD: SY > SE > TE (Sung et al., 2011) ¹⁵ HA: SE > TE > SY (Sung et al., 2012) ¹⁶ , HA: SE > TE, SY (Jung et al., 2012) ¹⁷ NS: SE < SY, TE; HA: SE > TE, SY; RD: SY, TE > SE; P: SY, TE > SE (Kang, 2014) ¹⁸
Character	SD: SY > TE > SE; C: SY > TE; ST: NS (Choi, 2010) ¹³ SD: SY > TE, SE (Lee, 2010) ¹⁴ , SD: SY > TE, SE (Sung et al., 2011) ¹⁵ P: SE < TE, SY (Sung et al., 2012) ¹⁶ , ST: SY > TE (Kang, 2014) ¹⁸
MMPI	2,7,0: SE, TE > SY (Kim et al., 1994) ¹⁹ 2: SE, TE > SY; 0: SE > SY, TE; INTR: SE > SY, TE (Lee et al., 2011) ²⁰ 5: SY > TE, 0: SE > TE, SY (Jung et al., 2012) ¹⁷
NEO-PI-R	E: TE, TY, SY > SE; A1 & A3: SE < SY, TE, TY; C2: SE > TE, SY; C4: SE > TE (Park and Lee, 2000) ²¹ ; N: SE > TE, SY; E: SE < TE, SY (Jung et al., 2012) ¹⁷
K-EPQ	E: SE < TE, SY; Imp: SY > TE, SE (Sung et al., 2012) ¹⁶ ; E: SE < TE, SY (Kang, 2014) ¹⁸
SCL-90-R	SOM: SY > SE, TE; HOS: SY > TE, SE (Chae et al., 2010) ²²

Table 3 (Continued)

Main scale	Features
Other scales	A-O: SY > SE, TE; AVD & R-F: SE > SY, TE; SUP: SY, TE > SY; HUR: SY, TE > SE—EDMT (Kim, 2000) ²³ ; S-A: SY > TE, SE (Lee and Kim, 2005) ²⁴ ; dependent: SE > TE—ACDM (Choi et al., 2008) ²⁵ ; positive emotion: TE > SE—PANAS (Yoon et al., 2011) ²⁶ ; offense oriented: TE (37.7%)—KEPTI (Heo and Youn, 2014) ²⁷ ; Mental Heal Index: TE > SE—SF-12 (Kim et al., 2014) ²⁸ ; ASE: TE > SY, PSE > SE, TE > SY; BSE: TE > SY—PSE; SE: NS (Na et al., 2005) ³⁴ .
	A1, trust; A3, altruism; ACDM, Assessment of Career Decision Making scale; A-O, acting out; ASE, anxiety for self-expression; AVD, avoidance; BSE, body self-expression; C2, orderliness; C4, need for achievement; E, extraversion; E, extroversion; E-I, extraversion-introversion; EDMT, Ehwa Defense Mechanisms Test; F, feeling; HA, harm avoidance; HOS, hostility; HUR, humor; Imp, impulsiveness; I, introversion; J, judging; J-P, judging-perceiving; K-EPQ, Eysenck Personality Questionnaire (Korean version); KEPTI, Korean Enneagram Type Indicator; MBTI, Mayers and Briggs Type Indicator; MMPI, Minnesota Multiphasic Personality Inventory; NEO-PI-R, Revised NEO-Personality Inventory; NS, novelty seeking; P, perceiving; P, perseverance; PANAS, Positive and Negative Affect Schedule; PSE, physical self-expression; RD, reward dependence; R-F, reaction formation; S-A, self-assertion; SCL-90-R, Symptom Checklist-90—Revised; SD, self-directedness; SE, So-Eum type; SF-12, Health Survey-short form 12; S-N, sensation-intuition; SOM, somatization; ST, self-transcendence; SUP, suppression; SY, So-Yang type; TCI, Temperament and Character Inventory; TE, Tae-Eum type; T, thinking; T-F, thinking-feeling; TY, Tae-Yang type.

With scales that focused on specific aspects of personality, such as psychiatric symptoms and emotional problems, TE relied less on acting out defense mechanisms than SY, and less on avoidance, reaction formation, and suppression than SE. By contrast, TE used humor. On the decision-making scale, TE relied less on the dependent type than SE and experienced more positive emotion than SE. On the Korean Enneagram Type Indicator, TE showed more aggressive attitudes than SE, but less aggression than SY. In the Health Survey Questionnaire, those in the TE type perceived themselves to be healthier than those labeled as SE, despite there being no actual health differences.

3.4.3. So-Yang type

Significant differences between SY and the other types are summarized in Table 4.

On the MBTI, SY was markedly toward extraversion on the introversion–extraversion dimension in five of the six studies. While SY showed a consistent tendency toward sensing and perceiving on the sensing–intuition and judging–perceiving dimensions, no such trend was demonstrated on the thinking–feeling dimension. In the two studies that reported a dominance of feeling, participants were either female or general college students. This fact must be considered in future research. In contrast with the results of TE, no consistent results were found on the dominant function index. With regard to the representative type of MBTI in SY, only two of the six total studies reported the ESTJ and ISTJ types, but among

Table 4 – Summary of significant features in So-Yang type

Main scale	Features
MBTI	
Preference index	E-I: 37.5:62.5, S-N: 50.0:50.0, T-F: 78.1:21.9, J-P: 53.1:46.9 (Choi et al., 2000) ⁸ E-I: 56.0:44.0, S-N: 56.0:44.0, T-F: 68.0:56.0, J-P: 32.0:68.0 (Chae et al., 2001) ⁹ E-I: 64.6:35.4, S-N: 60.4:39.6, T-F: 58.3:41.7, J-P: 18.8:81.2 (Park, 2003) ¹⁰ E-I: 55.4:44.6, S-N: 55.4:44.6, T-F: 50.0:50.0, J-P: 25.0:75.0 (Lee, 2004) ¹¹ E-I: 65.6:34.4, S-N: 71.9:28.1, T-F: 40.6:59.4, J-P: 37.5:62.5 (Choi and Shin, 2007) ⁶ E-I: 64.7:35.3, S-N: 61.8:38.2, T-F: 44.1:55.9, J-P: 44.1:55.9 (Song et al., 2009) ¹²
Dominant function	S (25.0), T (21.9), N (40.6), F (12.5) (Choi et al., 2000) ⁸ S (20.0), T (48.0), N (20.0), F (12.0) (Chae et al., 2001) ⁹
Character type	ISTJ (15.6), ESTJ (15.6) (Choi et al., 2000) ⁸ , ESTJ (16.0) (Chae et al., 2001) ⁹ , ISTJ (14.3) (Lee, 2004) ¹¹ , ESFP (—) (Choi and Shin, 2007) ⁶ , ENFP (17.7) (Song et al., 2009) ¹²
TCI	
Temperament	NS: SE < SY ($p=0.052$) (Seo et al., 2009) ²⁹ NS: SE < SY, TE; HA: SE > TE > SY; P: SE < SY, TE (Choi, 2010) ¹³ NS: SY > SE; HA: SE > SY; RD: SY > SE > TE (Lee, 2010) ¹⁴ NS: SY > TE, SE; RD: SY > SE > TE (Sung et al., 2011) ¹⁵ NS: SY > SE; HA: SE > TE > SY; RD: SY > SE (Sung et al., 2012) ¹⁶ NS: SY > SE; HA: SE > TE, SY; RD: SY > SE (Jung et al., 2012) ¹⁷ NS: SE < SY, TE; HA: SE > TE, SY; RD: SY, TE > SE; P: SY, TE > SE (Kang, 2014) ¹⁸ SD: SY > TE > SE; C: SY > TE (Choi, 2010) ¹³ SD: SY > TE, SE (Lee, 2010) ¹⁴ ; SD: SY > TE, SE (Sung et al., 2011) ¹⁵ P: SE < TE, SY (Sung et al., 2012) ¹⁶ ; ST: SY > TE (Kang, 2014) ¹⁸
Character	
MMPI	2, 7, 0: SE, TE > SY (Kim et al., 1994) ¹⁹ 2: SE, TE > SY; 9: SY, TY > SE; 0: SE > SY, TE; INTR: SE > SY, TE (Lee et al., 2011) ²⁰ 2: SE > SY; 9: SY > SE; 0: SE > TE, SY; INTR: SE > SY (Jung et al., 2012) ¹⁷
NEO-PI-R	N: SE > SY; E: TE, SY > SE (Park and Lee, 2000) ²¹ ; N: SE > TE, SY; E: SE < TE, SY (Jung et al., 2012) ¹⁷
K-EPQ	E: SE < TE, SY; L: SE > SY; Imp: SY > TE, SE (Sung et al., 2012) ¹⁶ E: SE < TE, SY; Imp: SY > SE (Kang, 2014) ¹⁸
SCL-90-R	I-S & O-C: SE > SY (Min et al., 2001) ³⁰ SOM: SY > SE, TE; HOS: SY > TE, SE (Chae et al., 2010) ²² DEP: SE > TE, SY; ANX: SY > SE, TE (Jeon, 2012) ⁷

Table 4 (Continued)

Main scale	Features
Other scales	A-O: SY > SE, TE; AVD & R-F: SE > SY, TE; SUP: SY, TE > SY; HUR: SY, TE > SE—EDMT (Kim, 2000) ²³ ; rational: SE > SY; intuitive: SY > SE—ACDM (Choi et al., 2008) ²⁵ ; adaptation oriented: SY (37.2%)—KEPTI (Heo and Youn, 2014) ²⁷ ; positive emotion: SY > SE—PANAS (Kim et al., 2014) ²⁸ ; ASE: TE > SY, PSE > SE, TE > SY; BSE: TE > SY—PSE; SE: NS (Na et al., 2005) ³⁴ .
	A1, trust; A3, altruism; ACDM, Assessment of Career Decision Making Scale; ANX, anxiety; A-O, acting out; ASE, anxiety for self-expression; AVD, avoidance; BSE, body self-expression; C2, orderliness; C4, need for achievement; DEP, depression; E, extraversion; EDMT, Ehwa Defense Mechanisms Test; E-I, extraversion-introversion; HA, harm avoidance; HOS, hostility; HUR, humor; Imp, impulsiveness; I-S, interpersonal sensitivity; J-P, judging-perceiving; KEPTI, Korean Enneagram Type Indicator; K-EPQ, Eysenck Personality Questionnaire (Korean version); L (K-EPQ), lie; MBTI, Mayers and Briggs Type Indicator; MMPI, Minnesota Multiphasic Personality Inventory; NEO-PI-R, Revised NEO-Personality Inventory; NS, novelty seeking; O-C, obsessive compulsive; P, perseverance; PANAS, Positive and Negative Affect Schedule; PSE, physical self-expression; RD, reward dependence; R-F, reaction formation; SCL-90-R, Symptom Checklist-90—Revised; SD, self-directedness; SE, self-esteem; S-N, sensation-intuition; SOM, somatization; SUP, suppression; SY, So-Yang type; TCI, Temperament and Character Inventory; TE, Tae-Eum type; T-F, thinking-feeling; TY, Tae-Yang type.

these, ESFP and ENFP were the most frequently found types of SY in the MBTI.

On the TCI, SY showed the most remarkable contrast with SE on the novelty seeking and harm avoidance scales. On the novelty seeking scale especially, all six studies reported significantly lower scores of SY than SE, while SY reported higher scores than SE and even higher scores than TE in two of the studies on the reward dependence scale. Furthermore, three of the studies consistently reported higher scores for SY than TE and SE on this scale. On the MMPI-2, SY reported the lowest scores on the introversion (0 and INTR) and negative emotion scales (2, 7), while posting the highest scores on the extraversion and related emotion or impulsiveness scales (9). In the NEO-PI-R, SY reported lower scores than SE, and SY received higher scores on the extraversion and impulsiveness scales than SE on the K-EPQ.

With scales that focused on specific personality aspects, such as psychiatric symptoms and emotional problems, SY reported lower scores than SE on interpersonal sensitivity, depression, and anxiety, while SY showed higher scores than SE (these were even higher than TE) only on the somatization and hostility scales of the SCL-90-R. In reference to the defense mechanisms used, SY used more acting out and humor than TE and SE, and relied more upon an intuitive style than rational style compared with TE on the decision-making scale. On the Positive Affect and Negative Affect Scale, SY recorded higher scores than SE, while engaging in more adaptation-oriented behavior patterns than SE or TE, as shown on the Korean Enneagram Type Indicator.

Table 5 – Summary of significant features in So-Eum type

Main scale	Features
MBTI	
Preference index	E-I: 4.2:95.8, S-N: 57.7:42.3, T-F: 73.2:26.8, J-P: 57.7:42.3 (Choi et al., 2000) ⁸ E-I: 3.2:96.8, S-N: 71.0:29.9, T-F: 54.8:71.0, J-P: 64.5:35.5 (Chae et al., 2001) ⁹ E-I: 68.8:31.2, S-N:78.1:21.9, T-F: 53.1:46.9, J-P: 34.4:65.6 (Park, 2003) ¹⁰ E-I: 13.4:86.6, S-N: 62.2:37.8, T-F: 15.9:84.1, J-P: 56.1:43.9 (Lee, 2004) ¹¹ E-I: 22.0:78.0, S-N: 78.0:22.0, T-F: 56.1:43.9, J-P: 63.4:36.6 (Choi and Shin, 2007) ⁶ E-I: 31.1:68.9, S-N: 82.2:17.8, T-F: 64.4:35.6, J-P: 64.4:35.6 (Song et al., 2009) ¹²
Dominant function	S (40.8), T (18.3), N(25.4), F (15.5) (Choi et al., 2000) ⁸ S (41.9), T (16.1), N (19.4), F (22.6).(Chae et al., 2001) ⁹
Character type	ISTJ (32.4) (Choi et al., 2000) ⁸ , ISTJ (29.0) (Chae et al., 2001) ⁹ , ISTJ (25.6) (Lee, 2004) ¹¹ , ISTJ (Choi and Shin, 2007) ⁶ , ISTJ (26.7) (Song et al., 2009) ¹²
TCI	
Temperament	NS: SE < SY ($p = 0.052$) (Seo et al., 2009) ²⁹ NS: SE < SY, TE; HA: SE > TE > SY; P: SE < SY, TE (Choi, 2010) ¹³ NS: SY > SE; HA: SE > SY; RD: SY > SE > TE (Lee, 2010) ¹⁴ NS: SY > TE, SE; RD: SY > SE > TE (Sung et al., 2011) ¹⁵ NS: SY > SE; HA: SE > TE > SY; RD: SY > SE; P: SE < TE, SY (Sung et al., 2012) ¹⁶ NS: SY > SE; HA: SE > TE, SY; RD: SY > SE (Jung et al., 2012) ¹⁷ NS: SE < SY, TE; HA: SE > TE, SY; RD: SY, TE > SE; P: SY, TE > SE (Kang, 2014) ¹⁸ SD: SY > TE (Choi, 2010) ¹³ , SD: SY > TE, SE (Lee, 2010) ¹⁴ , SD: SY > TE, SE (Sung et al., 2011) ¹⁵
Character	
MMPI	2, 7, 0: SE, TE > SY (Kim et al., 1994) ¹⁹ 2: SE, TE > SY; 9: SY, TY > SE; 0: SE > SY, TE; INTR: SE > SY, TE (Lee et al., 2011) ²⁰ 2: SE > SY; 9: SE > SY; 0: SE > TE, SY; INTR: SE > SY (Jung et al., 2012) ¹⁷
NEO-PI-R	N: SE > SY; E: TE, SY > SE; A1 & A3: SE < SY, TE, TY; C2: SE > TE, SY; C4: SE > TE (Park and Lee, 2000) ²¹ ; N: SE > TE, SY; E: SE < TE, SY (Jung et al., 2012) ¹⁷
K-EPQ	E: SE < TE, SY; L: SE > SY; Imp: SY > TE, SE (Sung et al., 2012) ¹⁶ E: SE < TE, SY; Imp: SY > SE (Kang, 2014) ¹⁸
SCL-90-R	SOM: SY > SE, TE; HOS: SY > TE, SE (Chae et al., 2010) ²² ; DEP: SE > TE, SY; ANX: SY > SE, TE (Jeon, 2012), ⁷ I-S & O-C: SE > SY (Min et al., 2001) ³⁰

Table 5 (Continued)

Main scale	Features
Other scales	A-O: SY > SE, TE; AVD & R-F: SE > SY, TE; SUP: SY, TE > SY; HUR: SY, TE > SE—EDMT (Kim, 2000) ²³ ; PSQ: SE > SY (Yoo et al., 2003) ³¹ ; S-AC: SY > SE; S-A: SY > TE, SE (Lee and Kim, 2005), ²⁴ depression & anxiety: SE > TE, SY.—SOS (Choi et al., 2008) ²⁵ ; total stress: SE > SY > TE (Chang et al., 2012) ³² ; rational: SE > SY; intuitive: SY > SE—ACDM (Choi et al., 2008) ²⁵ ; retreat oriented: SE (25.1%)—KEPTI (Heo and Youn, 2014) ²⁷ ; trait anxiety: SE > SY, TE—STAI (Song et al., 2009) ¹² ; negative emotion expression: SE > SY—EEQ (Kim, 2011) ³³ ; negative emotion: SE > TE—PANAS (Yoon et al., 2011) ²⁶ ; ASE: TE > SY; PSE > SE, TE > SY; BSE: TE > SY—PSE; SE: NS (Na et al., 2005) ³⁴
	A1, trust; A3, altruism; ACDM, Assessment of Career Decision Making Scale; ANX, anxiety; A-O, acting out; ASE, anxiety for self-expression; AVD, avoidance; BSE, body self-expression; C2, orderliness; C4, need for achievement; DEP, depression; E, extraversion; EDMT, Ehwa Defense Mechanisms Test; EEQ, Emotional Expressiveness Questionnaire; E-I, extraversion-introversion; HA, harm avoidance; HOS, hostility; HUR, humor; Imp, impulsiveness; I-S, interpersonal sensitivity; J-P, judging-perceiving; KEPTI, Korean Enneagram Type Indicator; K-EPQ, Eysenck Personality Questionnaire (Korean version); L (K-EPQ), lie; MBTI, Mayers and Briggs Type Indicator; MMPI, Minnesota Multiphasic Personality Inventory; NEO-PI-R, Revised NEO-Personality Inventory; NS, novelty seeking; O-C, obsessive compulsive; P, perseverance; PANAS, Positive and Negative Affect Schedule; PSE, physical self-expression; PSQ, perceived stress questionnaire; RD, reward dependence; R-F, reaction formation; S-A, self-assertion; S-AC, self-acceptance; SCL-90-R, Symptom Checklist-90—Revised; SD, self-directedness; SE, self-esteem; S-N, sensation-intuition; SOM, somatization; SOS, Symptoms of Stress; STAI, State-Trait Anxiety Inventory; SUP, suppression; SY, So-Yang type; TCI, Temperament and Character Inventory; TE, Tae-Eum type; T-F, thinking-feeling; TY, Tae-Yang type.

3.4.4. So-Eum type

The significant differences between SE and the other types are summarized in Table 5.

SE reported the most remarkable and consistent tendencies on both the introversion-extraversion and sensing-intuition dimensions in the MBTI. For example, SE showed a strong trend toward introversion in all the studies except one, and also showed a preference for sensing. Although there was a generally reported dominance of judging on the judging-perceiving dimension, no significant tendency was found on the thinking-feeling dimension. Sensing was the most prevalent function, and ISTJ was the most common representative type among the 16 personalities. These results were consistent for SE regardless of the type of participants (whether they were medical students or not), which is in contrast to the finding associated with both TE and SY.

On the TCI, SE was reported to have markedly higher scores than TE and SY for harm avoidance, but markedly lower scores than TE and SE for novelty seeking. Additionally, two studies

reported that SE had significantly lower scores than SY and TE for persistence, reward dependence, and self-directedness. On the MMPI-2, SE was generally comparable to SY, with consistently higher scores than SY or TE for depression (2), anxiety (7), and social introversion (0). On the hypomania scale (9), however, SE reported lower scores than either SY or TE. These results were consistent with the NEO-PI-R, where SE posted significantly higher scores for neuroticism, but significantly lower scores for degree of openness to new experiences and A scales, which are related to trust or interest in interpersonal relationships, than SY or TE. As for the MBTI and MMPI, SE was found to occupy a lower position than either SY or TE on the extraversion scale in the K-EPQ, but a higher position than SY or TE on the interpersonal sensitivity, depression, and obsessive symptom scales. In addition, SE also reported lower scores for hostility and somatization on the SCL-90-R.

On the other personality scales, SE relied more on the defense mechanisms of avoidance, reaction formation, and suppression rather than acting out in comparison to SY or TE, and tended to report higher scores than SY or TE on stress-related or negative emotion scales. On the State and Trait Anxiety Inventory, SE recorded higher scores for trait anxiety than SY or TE, and expressed more negative emotions than SY on the Positive Affect and Negative Affect Scale. With regard to the decision-making style, SE used a more rational style than SY, which in turn used a more commonly used intuitive style than SE. When classified by Enneagram type on the Korean Enneagram Type Indicator, SE relied more on a retreat-oriented behavioral mode than SY or TE.

4. Discussion

4.1. Primary characteristics and distribution of each Sasang type

From the review of the psychological traits for each type reported in the published studies, some conclusions can be drawn. First, with the exception of TY, it is almost certain that in most cases SY and SE are extreme opposites, while TE is located somewhere in the middle, with the exact position being dependent on the psychological scale used. The most remarkable and consistent differences were reported on the scales that reflect the Western psychological constructs of introversion–extraversion and neuroticism, such as inhibition–excitation, depression, anxiety, interpersonal sensitivity, obsessive tendency, and avoidant–impulsive behavioral patterns. These results were almost in line with another systematic review study about Sasang typology, in that there were most vivid contrasting psychological profiles between SY and TE, which showed contradictory results depending on the psychological measurements used in that study.³⁵ However, the report that SY got significantly lower scores on Hs, Hy scales in MMPI than SE could not be confirmed in this review. By contrast, for certain aspects of personality, such as somatization, type A or B, attitude to learning, self-esteem, and cognitive functions, no significant differences were found between the types. As a result, theoretical review and verification are needed in order for these results to coincide with the conceptual criteria used in Sasang typology. If

these do not meet the criteria, a further study must be conducted to clarify whether the discrepancies are a result of the conceptual ambiguity that is inherent in Sasang typology, the differences between classification methods, or the procedural differences, such as type of study participant and research methodology.

Among these various possibilities, the first consideration must be the demographics of the participants studied in the research. It is highly probable that different groups have their own unique characteristics, which may affect the frequency distribution ratios. For example, the articles reviewed in this study used oriental medical students, adults from the general population, outpatients, and middle- and high-school students as their participants (total 10,496), who were classified into the Sasang types as follows: TY: 1.02%; TE: 34.38%; SY: 34.14%; and SE: 30.45%. This distribution is shown in Table 2, although is not consistent with the descriptions given in the chapter *Discussion on how to discriminate each Sasang types in The principle of life preservation in Eastern Medicine* by Lee Je-Ma: “If there are roughly ten thousand people in one town, 5,000 people would be TE group, 3,000 people would be SY group, 2,000, people would be SE group, and TY is so scarce that the number of TY will be at most 3-10 people.”³⁶ This discrepancy can be statistically verified. For example, when only two groups of 1991 oriental medical students and 4967 adults from the general population were examined, the frequencies of TE, SY, and SE were statistically significant [$\chi^2(2) = 109.296$, $p < 0.01$]. In other words, while the TE group did not demonstrate the levels described in *The principle of life preservation in Eastern Medicine*,³⁶ it showed the highest frequency among the general adult group. SE, however, was shown to have the highest frequency in the oriental medical group. The result of this analysis implies that persons with certain specific interests, temperament, and abilities are more likely to choose specific colleges, departments, or jobs. It is, therefore, no understatement to suggest that future research comparing these groups must first consider the type of persons to be studied.

4.2. Common denominators between Eastern and Western classification methods and conceptualizations

The objective personality scales that were used in the studies included in this review were constructed using various methods. The MBTI adopted a rational approach developed from Jung’s typology, the MMPI adopted an empirical approach based on the differentiating power of items, and the NEO-PI-R relied on the results of factor analysis. The consistent results found among the reviewed studies, despite the varied measurement approaches, imply that there is some overlap between Sasang medicine and Western psychological typology.

In order to further integrate existing research on temperament classification between the East and the West, it is necessary to first explore the degree of overlap between the conceptual framework surrounding the Sasang types and Western psychological typology. Human personalities are classified differently depending on the framework or method used, and this may often result in those with similar personalities being classified into different Sasang groups. The findings of this review imply that there may be, however, common

denominators between the Sasang classification system and the personality typologies and classification systems used in Western psychology.

One of the most widely used classification dimensions in Western psychology is that of the introversion–extraversion. This dimension was conceptualized by Jung after adopting Freud's concepts of libido and decolorizing sexual meaning and applying these to psychological typology. As a result, this scale classifies human personality into two categories according to their primary tendencies. This dimension can be linked to a dimension of inhibition–excitation, which is a fundamental mechanism working at the neuron level in the human nervous system that allows psychological processes to function in either a complementary or a competitive manner.³⁷ Coupled with evolution theory, this biological dimension can also be linked to behavioral aspects, such as the fight–flight dimension, as the chosen behavior is determined by the individual's attitude toward the outer world.³⁸ When these psychological–biological–behavioral dimensions are bound together, it may be said that inward-oriented, inhibition-oriented, and avoidant behavioral patterns are placed at the point of one extreme, and outward-oriented, excitation-oriented, and approaching behavioral patterns are placed at the opposite extreme.

The concept of Eum and Yang (Yin and Yang) on which Sasang medicine is based are also similar to the above conceptual paradigm. When we consider Eum and Yang to be concepts comparable to “Qi” (energy or force), Eum type can be reclassified as an introversion type and Yang type as an extraversion type, according to Jung's typology. Reviewing the above summary, those that exhibited introversion-related personality traits most strongly were SE, while those that exhibited the most contrast with SE were SY. The TE group was placed between SE and SY. Given that the TY group size was very small, further studies are needed to address this issue. Although the Sasang typology is mainly based on categorical concepts, the dimensional approaches to classify Sasang types can serve as a bridge between Eastern and Western classification methods. The Sasang Personality Questionnaire,³⁷ a recently developed scale, is a good example for this purpose.

Another point of discussion is the difference in distribution ratio between Lee Je-Ma's description and the results of this review. In fact, the distribution patterns (TE:SY:SE = 50:30:20) suggested by Lee Je-Ma and that of introverted and extroverted people within the general population do not seem to coincide. This discrepancy must be solved by future research, in that, according to a psychological perspective, personality traits and other psychological attributes should follow a normal distribution pattern, as is witnessed in other things in nature. More specifically, in *The principle of life preservation in Eastern Medicine*,³⁶ the percentage of TY is nearly 0%, while TE accounts for about half of the general population. This ratio is not comparable to a normal distribution. This issue may stem from the conceptual differences between the quantitative and qualitative categorizations of Sasang and Western typologies. In fact, the categorical perspective plays a prominent role in Sasang typology, in that the classification of Sasang types emphasizes the size quality of internal organs as well as considers the

quantitative distribution of Eum and Yang. In addition, as Sasang medicine considers both psychological and physical, and quantitative and qualitative aspects when classifying types, normative data must be accumulated over future studies in order to uncover their psychological and physical traits and to clarify the quantitative division between types.

4.3. Latent difficulties in classification method

In this review, it is reported that about 70% of studies used the QSCC II, a self-reporting questionnaire. In order to objectively classify the types, classification tools, such as self-reporting measures or structured interview schedules, must be used. The ways in which self-reported questionnaires can be constructed may be divided into three types: a rational keying approach, an empirical keying approach, and a factorial selection.³⁸ The QSCC II used a rational keying approach.^{4,5} That is to say, the items included in the QSCC II were based on descriptions of the philosophical background of Sasang medicine and the traits of each Sasang type as described in *The principle of life preservation in Eastern Medicine or Remarks on gaining knowledge by the through study of things* by Lee Je-Ma.³⁶ The construct validity of each constitution was subsequently empirically supported.

As the QSCC II adopted a rational keying approach to demonstrate practical utility, two requirements must be theoretically considered and accepted. First, how can the authors of a questionnaire construct items that exactly reflect the original author's descriptions? Second, how much do the theoretical and philosophical backgrounds on which the original author's descriptions are based encompass and reflect the meaningful human traits that are observable in the phenomenological world? While the former is related to aspects that demand psychometric rigidity and objectiveness, the latter is related to aspects that require theoretical analysis and clarification.

4.4. Integrated approach to the mind–body problem

The QSCC II, the most widely used objective classification tool in Sasang typology research, is composed of 112 items (excluding a further 9 items that are used to screen for false responses). Approximately 70% of these items are related to psychological factors. The objective scales used in research that compares the four Sasang types with Western personality constructs are entirely composed only of psychological factors. Therefore, the consistent relationship between Sasang typology and Western psychological typology revealed in this review does not reflect a new find; rather, it shows that the two typologies share a conceptual foundation. Analyzing the relationship between Sasang types and objective psychological traits is, after all, identical to comparing the language of Sasang typology and that of Western psychological typology.

To move beyond a simple exploration of the overlapping concepts between Sasang and Western psychological typologies and instead begin to identify the fundamental and integrated common denominators, two conceptual and technical points must first be considered. First, more objective and standardized classification methods that exactly reflect the

unique structure of Sasang typology must be developed in the future. Second, those classification methods must be based on consensual concepts about the term “constitution” between Eastern and Western typology. Unlike Western medicine, Eastern medicine does not view humans as a dualistic entity of mind and body. For example, the concept of constitution in Sasang medicine is different from that of constitution or temperament in Western psychology. Although the concept of constitution in Sasang medicine also contains the notion that every person is equipped with from birth, this concept is not limited to just the body. The concept also encompasses the Eastern tradition of mind-body monism in that it not only focuses on the function of the five viscera, but also incorporates the superiority and harmony of each of the internal organs and argues that those patterns are also expressed psychologically and behaviorally. This is clearly exhibited in the criteria that discriminate between each of the Sasang types, which include various aspects of body and mind, such as the “form of body and internal energy,” “the appearance and mode of one’s words,” “nature and talent,” “habitual mental attitude,” “health condition,” and “reoccurring disease.”³⁹ Such criteria that integrate natural elements are unique to Sasang medicine and are not sufficiently considered by Western typology. In this respect, the facts that objective classification tools, such as the QSCC II, are apt to include items related to psychological traits and that responders rely on their own subjective perception toward their psychological and bodily state are fundamental limitations.

Finally, some limitations of this review should be discussed. In this review, the data sources were limited to Korean journals. In addition, the inclusion and exclusion processes at each data-screening step were not recorded in detail. Therefore, there is a possibility that some more relevant or critical journal about this topic written in English might be missed from this review. These shortcomings could have affected more detailed and systematic discussions on the comparison with existing researches regarding the psychological profiles of each of the four Sasang types.

Conflicts of interest

There are no conflicts of interests related to this article.

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