Revisiting the Taxonomy of Environmental Types and Introducing the Salter Environmental Type Assessment

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Continuing efforts to “type” behavioral settings are summarized, and a new tool for researchers and practitioners, the Salter Environmental Type Assessment, is introduced.

ABSTRACT
Efforts to advance an interactional view of Jung’s work are summarized. The descriptive taxonomy has been expanded and now includes eight environmental type profiles. Ongoing environmetric studies of the related assessment instrument, the Salter Environmental Type Assessment, reveal that it is a stronger assessment tool than the previous version. Predictive validity studies of type congruence are highlighted.

INTRODUCTION
In 1995, the results of efforts to develop a taxonomy of environmental types (Salter, 1995a) and a related environmental assessment instrument (Salter, 1995b) were published in this journal. As this project has been an evolving work rather than a succinct research study, this overview of the work-to-date is provided. Specifically, the taxonomy has been revisited and now includes eight new environmental type descriptions. Environmetric studies of the current version of the assessment instrument are also reviewed.

OVERVIEW OF THE PROJECT
Because the environmental setting can influence the behavior of different personality types, accounting for this factor seems critical to the continued use of Jung’s theory (Salter, 2000a) and to the improvement of research in environmental psychology (Little, 1987). Such an expanded view of type functioning requires the binocular perspective offered by the interactional model (Walsh, Craik, & Price, 1992), in which behavior is understood as the interaction between person and environment. That is, type practitioners and
Leboyer, 1982). This pull/push of psychic energy by the environment has been tied directly to an individual’s ability to make perceptions and interpretations (Spoto, 1989). An extraverted environment is full of salient stimulus energy and requires the attention and participation of the people in it. This type of environment “pulls” people into it and openly manages the exchange of psychic energy. The environment serves as a catalyst for a broad array of events and actions. It may be loud, noisy, bright, and social, not unlike some social parties. Conversely, an introverted environment, such as a typical library, would allow individuals to regulate the level of the stimulation that they receive. By pushing management of the exchange of psychic energy back to the person, this type of environment would be more facilitative of private actions and individual functioning. It might be described as subdued, quiet, sedate, and reserved.

Judging and Perceiving
As related to individual perception and evaluation, environments also employ two interactive functions within the exchange (Levy-Leboyer, 1982): construction of a recognizable repertoire of elements (the “pieces and parts” of the setting) and maintenance of a predictable level of structure (how the elements are organized). In other words, our individual perceptions must have some source of energy, and our evaluations must make sense within a shared context. The perceiving environmental processes accentuate the elements that serve as sources of psychic energy or stimulation. In some perceiving settings, the task of establishing a repertoire could be sufficiently challenging as to thwart any efforts at maintaining a consistent reality. Disorder and change may be conspicuous. As is sometimes the case with newly formed...
groups, environmental perception can provide confusion as well as opportunities for growth. A *judging* environmental process manifests orderliness and/or “plannedness” of the setting, both in operation and organization. Environmental systems (e.g., laws or customs) function to maintain a coherent, collective reality. Occasionally, these systems are so pervasive as to possess a life of their own and thus make modification difficult.

**Sensing and Intuition**

The distinguishing characteristic of these two perceptive environmental functions appears to follow a convergence/divergence dichotomy (Argyle, 1981). The direct stimulus energy offered by existent environmental elements (e.g., people, things, facts, or values) drives the *sensing environment*, and little movement occurs beyond them. Elements are identified for their immediate, practical applications and honed to the task. In contrast, the focus of *intuitive environments* diverges from the existent elements. Instead, energy flows from the broader relationships among elements. Diversity and experimentation serve to stimulate continued generation of new environmental intuitions. Change may occur often because the “tried and true” is rejected as confining. Creativity and discovery may be evident.

**Thinking and Feeling**

In order for people to be able to make judgments, an environment must have an underlying set of guidelines that govern its operation. Two approaches for maintaining a collective reality within an environment have been noted (Argyle, 1981). A *thinking environment* contains an objective set of logical operations based on a central, depersonalized truth or science. In the hierarchical thinking environment, psychic energy is treated as a finite resource. As in the business world, rewards are dispersed to individuals who can “climb the ladder” and acquire “the biggest slice of the pie.” Competitiveness, skepticism, and distrust might also be conspicuous.

On the other hand, *feeling environments* stress “connectiveness” in making judgments. These settings are concerned with values and interpersonal interactions. In a feeling environment, psychic energy is an infinite resource because it can always be generated through new or strengthened connections. This type of environment might be described as socially oriented, humanistic, or sentimental. At a negative extreme, people in a feeling setting may feel manipulated or become burned out from the demands of interpersonal interactions (as occasionally occurs in social services).

**The Environmental Types**

Building on these dimensions, eight environmental types have been formulated to be consistent with Jungian theory. Although these profiles are speculative and meant to guide subsequent exploration of this area, as seen in some of the validity studies noted below, the profiles seem consistent with the research.

**The Extraverted Sensing Environment**

An extraverted sensing (ES) environment is filled with elements that energize the senses. As the building blocks to the ES setting, its elements generate an abundance of energy and compete for our perceptions. This concrete energy is “pure and natural,” although occasionally it can seem crude in its unrefined and unfiltered forms. It can be quite strong or intoxicating and definitely hard to ignore.

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The ES environment may be brightly lit, tastefully decorated, and/or crowded by a variety of people. Of all the extraverted environmental types, the extraverted sensing environment pulls the strongest on the people in it. Everyone has to get involved and experience what the ES setting has to offer. The ES setting may have a pragmatic side, as many of its elements concern our basic physical needs (e.g., food and shelter). As the building blocks to the setting, these elements cannot be ignored and may be essential to the existence of individuals in it.

Generally, “what you see is what you get” in an ES setting. Nonetheless, because judging is not the primary press, the people in an ES setting may not need to give attention to the time of day or to what others will think. Instead, they are expected to “act natural.” Pretense and airs, themes and motifs, or ulterior motives are simply ignored. In one form, an ES setting may promote hedonistic lifestyles and attract stimulus-seeking individuals.

The Introverted Sensing Environment
In the Introverted Sensing (IS) environment, a single element can become the major focus of the setting. To ensure the integrity or well-being of the key element, an IS setting can become quite specialized, as only by limiting the breadth of concern can the element receive maximum attention (e.g., an auto mechanic’s garage that only fixes foreign cars, specialized wards in a hospital, etc.). Because of increased concentration on the element, IS settings often demand that people internalize and know many facts about them.

This focused, in-depth knowledge can provide the opportunity for some IS settings to take responsibility for individual elements that are viewed as lacking in some manner (e.g., a broken car, a patient). These “workshops” become dedicated to nothing more than fixing or restoring elements to their true natures. As such, each setting may rely on a detailed set of methodologies and/or tools-of-the-trade by which an element is allowed to be treated in an IS setting.

Repair and restoration processes, as well as learning the IS setting’s craft, can become elements requiring similar IS maintenance (e.g., quality control: a procedure for monitoring procedures). Inefficiency and inaccuracy detract from the element and must be minimized. A simple, but often firm, judging reality may be found in the setting so that any problems that arise can be solved efficiently. If the element is complex or valuable (such as a patient on a hospital ward), the presses for methodological perfection and/or specialized tools and training are even stronger.

The Extraverted Intuitive Environment
The Extraverted Intuitive (EN) environment provides an arena for people to explore and create. Elements in the EN setting become vehicles to meet intuitive presses. A focused knowledge of existent elements, such as that seen in IS settings, becomes less important than the ability to build information or patterns from elements. People may be expected to use multidisciplinary approaches and to synthesize across areas.

An important aspect of the EN environment is the fact that intuitions can become elements to new intuitions. That is, at the moment that an intuition is formulated in the setting, it immediately becomes an element. Ultimately, the intuitive process is what is important, and everyone and everything are involved in it (e.g., a brainstorming session). To facilitate the EN
process, opportunities for spontaneous acts and enterprising ventures are provided.

To avoid confining the intuitive process, individuals in the EN setting are usually not constrained by time or space (a “loose” judging process). As an extraverted perceiving setting, it can also become crowded, not by elements necessarily, but rather by the potential numbers of relationships among them. Consequently, people may feel as if the “work” is never done: Another intuition must be crafted!

**The Introverted Intuitive Environment**
In contrast to its ES counterpart, the Introverted Intuitive (IN) environment may be described as unearthly or supernatural. Because of the hidden relationships among them, elements seem to have properties that depart from the physical and practical life of sensation. A world of symbols and archetypes, things are not what they seem in the IN setting. “Magic” is commonplace and no judging reality can make complete sense of it.

The associations in an introverted intuitive (IN) environment are not easily revealed or understood. These IN connections between seemingly unrelated elements are often shrouded in mystery and debate, especially as individuals personalize their experience of them. People may feel as if they are on a “journey of discovery” to reveal these hidden connections. In revealing these abstractions, they may appear mystical. As such, IN settings may also elicit a certain amount of awe and respect, if not fear and anxiety.

Among the environmental types, the IN environment may serve as a gateway to the collective unconscious. The numerous qualities of intuitions in the IN setting rely on their uncommon ties to a common background. If people try to perceive them directly, they cannot. A mistake is to assume that some IN intuitions should appear in the external world (extraversion) or be made more real in some way (judgment). Often, nothing is gained and much is lost when knowledge about an association is evaluated and externalized. For instance, the “placebo effect” relies on a hidden psychosomatic process that is less effective if patients know they are taking sugar pills instead of “real” medicine.

**The Extraverted Thinking Environment**
The reality in the extraverted thinking (ET) environment is logical in its operation and pervasive in its impact. This reality is often evidenced by an externalized and/or centralized set of rules or policies. These standards serve as a predictable and explicit method to assess and manage behaviors. As the number of elements increases, the more objective and standardized these rules can become.

Because a balanced approach to “distributing” psychic energy is important, an ET setting can acquire economic or businesslike qualities. Resources are identifiable and manageable. Success is easy to see but may be difficult to achieve. Many interactions could be described as “win/lose” and competitive. People may be vital to the setting but are treated as any other element that can be managed. Actually, the various positions or roles within the ET setting can be filled by any competent individual with the appropriate skills.

The ET system provides a standard by which individuals can judge behaviors, their own and the actions of others. Both winners and losers are known. Usually, people who deviate or challenge the system are quickly identified and corrected (unless, of course, they have acquired enough resources to change the system). Their “offenses” are usually handled in an unbiased manner that is meant to assure equality and justice.
Occasionally, impartial outsiders are used to mediate conflicts.

**The Introverted Thinking Environment**
The “unrevealed truth” that manages the Introverted Thinking (IT) environment is like an ultimate equation that explains everything in the universe. Because a singular solution can answer every question, understanding even the smallest piece of the larger equation (e.g., a principle or law) is revealing of IT reality. The press on individuals may be toward systematic exploration to uncover and/or understand the central truth. This collective understanding could be called a science.

People in this environment must define that part of IT science that they wish to understand or use. As a consequence, the IT setting may contain prototypes or models that reduce the problem to its primary components. An individual learns that people, events, objects, and behaviors are mere variables and constants to serve in the solving of the equation. Anything (or anyone) that cannot be formulated as a constant is usually eliminated, avoided, or tightly controlled.

To manage its inner workings, different systems develop to help exert control over confounding factors. Individuals may feel a constant questioning and examination of everything and everybody. To establish order in the IT setting, the elements may be minimized to reduce the chances of contamination (e.g., agricultural science suggests the model of growing produce in rows in fields dedicated to each crop). Change could be slow, with many things frozen in time, especially interpersonal relationships.

**The Extraverted Feeling Environment**
An extraverted feeling (EF) environment’s reality is based on shared beliefs about how elements (especially people) should be connected. Because it relies on the membership to define its nature, each EF environment is as different as the people who populate it. EF reality is a “negotiated arrangement” among individuals: Changing one person or one thing within the setting can alter its entire complexion.

Through a concern for people and pleasant interactions, the EF environment tries to maintain an overt and harmonious network of interpersonal relationships. A basic trust and warmth might be quite tangible. Members may feel a true sense of “belongingness,” regardless of their personal characteristics. In a large group, coalitions may be formed. The connectiveness and attachments in an EF setting are experienced as a social orientation.

The only way to experience an EF setting is to participate in it actively. Because the connections that people make provide the judging structure that they need to behave, a major task of the environment involves developing rapport through participation and sharing. In other words, group process—relating as members and improving interpersonal attachments—is usually the most vital task in the EF setting.

**The Introverted Feeling Environment**
Introverted Feeling (IF) reality exists as a system of unalterable values about our basic connections to elements, especially people. Occasionally, the focus may be on a single belief or value, which can acquire a numinous quality, and individuals are asked to have faith in its immutable validity. Often IF values are accepted as givens and are so ingrained as to be dogmatic. When deliberate expression is given (in ceremonies and rituals), these values and beliefs can acquire sacred and religious qualities.
For some individuals, the IF setting may function as a sanctuary from external demands. Generally, this environment values people as people—not as members of a family—but as one of the family of humankind. The setting assumes a deep appreciation for the life force but may not expect many extraverted displays of it. Still, each individual must personally determine how he/she will interact with the IF setting: It always beckons if a person chooses to listen. In turn, the IF environment tries to provide a supportive climate for the expression of individual loyalties and values.

IF reality can apply equally to the physical realm. Many elements in the setting may possess sentimental value, either personally (e.g., family heirlooms) or in a collective sense (e.g., religious icons). The “inherent worth” of an element is a key notion in an IF setting. The daily interactions with valued elements (e.g., people, things, or ideas) may yield a sense of ecstasy for individuals who are committed to IF reality.

THE SALTER ENVIRONMENTAL TYPE ASSESSMENT

As a parallel step and to operationalize the taxonomy, an environmental assessment instrument has been designed. The current edition is the Salter Environmental Type Assessment-Form B or SETA (Salter, 2000b), which is the revised version of the Environmental Personality Type Assessment or EPTA described previously (Salter, 1995b). The SETA is comprised of 100 items, 40 test items and 60 scored items, of which 37 appeared on the EPTA in some form. As the normative sample continues to grow, 1,757 subjects (roughly eight times the size of the normative sample for the EPTA) served as a pool for the analyses of the SETA reported here and in the manual (Salter, 2000a).

INSTRUMENTATION

Goals and Assumptions. Very few guidelines are available to anyone interested in crafting an environmental assessment instrument (Gifford, 1997). Consequently, a “right tool for the right job” approach to designing and testing the SETA has been used. Generally, the presentation format and layout of the assessment device resemble the primary measurement instrument of psychological type, the Myers-Briggs Type Indicator (MBTI) tool. A forced-choice format is used to reveal responses that are consistent with the underlying Jungian constructs (Hicks, 1984). A higher percentage of items in the word-pair item format (from 52% to 67%) has been used on this edition of the assessment tool. Both quantitative and qualitative analysis of the phrase question items revealed them to be somewhat less effective environmetrically and to be slightly more difficult for respondents to complete (Salter, 2000a).

Item Generation. Mindful of the developing theory of environmental types, items were generated from two sources (Craik, 1981). Behaviorally derived items were taken from the validity studies and research projects reported in the previous MBTI Manual (Myers & McCaulley, 1985), as well as from the growing number of research studies that document these differences related to psychological type. Theory-derived items flowed from an interactional view of the Jungian hypothesis and the developing taxonomy of environmental types. To improve content validity, recognized environmental subdomains or context-specific areas were used as guides for item generation. Items generated as behavioral or theoretical indices were reexamined across four subdomains that were drawn from work by Moos (1979): the human aggregate, physical elements and their
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arrangements, the organizational structure, and the social climate.

**Item/Scale Analysis.** Item/scale analysis was accomplished in two ways. The first approach drew on suggestions by Meir and Gati (198) for analysis of assessments that produce multidimensional profiles. No item had a nonresponse rate (i.e., was left blank) higher than 2%. Scrutiny of the response distribution showed the entire range of raw scores on each scale (+15 to −15) and some bimodality in the graphical representations. Examining both biserial correlation (item with raw score) and phi (item with dichotomous scale score) coefficients, all items correlated most highly with their intended scales.

The second procedure was an exploratory factor analysis or EFA of the 1,757 SETA profiles. Using principle components extraction, a four-factor model was found to fit the data better than either the three-factor or the five-factor model and was consistent with a priori assumptions. This model produced four eigen values greater than 2.00 and explained 33% of the total variance. From the oblique rotation, 59 of the 60 items loaded most strongly on their respective scales (ranges for E–I = .65 to .34, S–N = .59 to .38, T–F = .65 to .45, and J–P = .68 to .16). One J–P item did not load highest on its intended factor, although it did well on the item/scale correlational studies described above. Nine items cross-loaded greater than .30 on other scales (E–I with one on T–F and three on J–P, S–N with one on each of the other scales, none for T–F, and two for J–P on the E–I scale) but were still most strongly associated with their intended factors. In light of the complexity of the latent factors under consideration and the “newness” of the instrument, these results were viewed favorably.

**ENVIRONMETRIC STUDIES**

The normative sample of 1,757 SETA scores were obtained from individuals from three broad types of settings: 766 from educational settings, which were mostly classrooms; 736 from various kinds of work environments, ranging from bars to banks; and 255 from living environments, such as apartments and residence halls. Of this group, 1,018 individuals also completed the MBTI instrument. All 16 MBTI and SETA type profiles have been found among the sample group. For brevity, points of change or departure from the environmetric studies of the EPTA have been highlighted.

**Internal Consistency.** Using a persons-by-items design (see Brennan, 1983), generalizability coefficients for each scale were as follows: E–I = .85, S–N = .80, T–F = .87, and J–P = .70. The internal consistency of the overall profiles, using a persons-by-items-within-scales design, was .82. These coefficients show marked improvement from the EPTA, especially in light of the fact that a reduced number of items (from 80 on the EPTA to 60 on the SETA) can have a negative impact on reliability (Anastasi & Urbina, 1997).

**Construct Validity.** Construct validity studies of the SETA echoed the findings on the EPTA. As a key consideration to the utility of the SETA, no significant *artifactual effects* have been noted between it and the MBTI tool. That is, a person’s psychological type appears to have no relation to how she or he views a setting. Tests of *scale independence* have continued to be somewhat unsuccessful because of the disproportionate numbers of STJ and NFP settings in the sample. (See Predictive Validity below.) However, when controlling for environmental setting (i.e., educational, work, or living), most of
the scale biases can be explained.

Two types of concurrent validity studies, which were replicated from the EPTA, have involved the Work Environment Scale or WES (Insel & Moos, 1974). Biserial correlation coefficients were computed for the 174 subjects who completed both the WES and the SETA. Some convergence between the two instruments was observed in the correlation matrix. For example, higher levels of peer cohesion in the work setting correlated with extraversion (.34) and feeling (.40) and a strong task orientation with thinking (.21) and judgment (.22). Innovation on the WES seemed related to all four SETA scales: E = .27, N = .39, F = .37, and P = .14.

Additionally, replicating the technique described in Salter (1995b), classification analysis was employed to run a post hoc check on the original SETA classifications. That is, did the SETA sort individual responses into the right environmental type categories, based on a concurrent external measure? The percentages (number of classification “hits”/total number of subjects) for each construct were as follows: E = 68%, I = 68%, S = 73%, N = 82%, T = 74%, F = 79%, J = 72%, and P = 74%. Importantly, the SETA and WES are not totally convergent from a theoretical standpoint. Moos’s (1979) theory specifically concerns aspects of the social climate (including the domains of relationships, personal growth, and system maintenance/change), which may account for the higher relationships of WES scales and the S–N and T–F scales. Sampling may have also impacted the E–I scale results. Introverted settings seemed to have been undersampled, thus decreasing the amount of variance observed on the WES and its effectiveness in the classification analysis of the E–I scale.

**Predictive Validity and Studies of Type Congruence**

Work is progressing on understanding the dynamics of type congruence: the fit between psychological and environmental type dimensions (Salter, 2000a). Predictive validity studies within two broad environmental domains, work places and classroom settings, are summarized next.

**Work Environments.** Early on, Karras (1990) conducted a study of student services offices at a research university. By employing the MBTI and the EPTA-B instruments, he examined the congruence between environmental and psychological type dimensions as predictive of differing levels of state (situationally induced) and trait (personal characteristic) anxiety. One finding, which was consistent with expected behavioral outcomes, was that introverts showed more state anxiety when functioning in extraverted environments. A second finding was a positive relationship between intuitive environments and reduced stress anxiety. Apparently, environments with intuitive dispositions seemed to be easier places in which to work for respondents in this sample, regardless of their psychological types.

More recently, van Rooyen (1997) completed a project that addressed the interplay between work environment, worker type, and managerial leadership. As expected, van Rooyen found differing perceptions of organizations that were associated with various positions that people fill within them. For instance, executives saw more N, F, and P in their work environments, but middle managers indicated more S, T, and J in the environment. Van Rooyen also observed differences between the SETA scores of white and black managers, which he attributed to social
changes in South Africa, where the research was conducted.

**Classroom Environments.** A series of studies of the interactions between the psychological types of college students and the environmental types of classroom settings has been conducted. Although many of these results have been reported elsewhere (Salter, 1996, 2000a, 2000c), a few general trends can be offered. First, effects caused by the psychological types of students and by interaction between classroom and student seemed to have only a small statistical relationship to self-reported classroom performance. Instead, the “personalities” of the classrooms, as measured by the SETA, seemed to be better predictors of students’ performance (again, regardless of their psychological types). Environmental extraversion, intuition, and feeling were conspicuous descriptors of “good” classrooms, although almost any environmental type could serve as a positive educational setting. Conversely, the IST combination accounted for roughly 73% of classrooms in which students self-reported poor performance as a result of having had a “bad” educational experience. Even many students with IST preferences did not do well in these settings.

Within these broader findings, a couple of follow-up studies, which focused specifically on women’s experiences in higher education, have been initiated.

**Gender and T–F.** An analysis of 268 female college students (Salter, 2000c) yielded results that appear consistent with recommended educational strategies for this population (e.g., Belenky, Clinchy, Goldberger, & Tarule, 1986; Sadker & Sadker, 1994). Building on Carskadon’s (1994) suggestion that much of gender psychology is consistent with the Thinking–Feeling domain, introduction of a view of thinking and feeling classroom environments helped to reveal a provocative interaction effect. For this sample, thinking women showed little preference for thinking or feeling classroom environments. On the other hand, feeling women indicated a recognizable preference for feeling settings and against thinking classrooms. Of note, as women’s educational experiences may be qualitatively different than men’s, male students were not included as part of this particular study.

**Classroom Participation.** Persaud (1999) took the study of women’s experiences in the classroom a step further (n = 128). Working with samples of female engineering students and education students, she examined differences in the perceived level of classroom participation between thinking and feeling classrooms. For both groups, students reported participating more in classrooms that also showed a feeling disposition. Academic major and subject matter were not found to be related to participation in this small sample. Analysis of the qualitative responses (e.g., “What were positive/negative aspects of this class?”) suggested that the instructor may play a pivotal role: a point for future research.

**SUMMARY**

The taxonomy of environmental types and the Salter Environmental Type Assessment continue to offer type researchers and practitioners a means to understand the settings in which the different psychological types function. Grounded in both environmental psychology and Jungian theory, the taxonomy strives to describe the range of behavioral settings with which people interact in a way that is neither an anthropomorphization
of psychological type constructs nor an aggregation of the psychological types of individuals in the setting. Environmetric studies of the SETA have shown its reliability and validity to be an improvement over the previous version of the assessment instrument and to be approaching par with similar instruments. Initial behavioral studies reveal a more complex situation than simple person/environment type congruence might imply.

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