

## Revisiting Jung's concept of innate sensitiveness

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*Abstract:* Jung suggested that innate sensitiveness predisposes some individuals to be particularly affected by negative childhood experiences, so that later, when under pressure to adapt to some challenge, they retreat into infantile fantasies based on those experiences and become neurotic. Recent research by the author and others is reviewed to support Jung's theory of sensitiveness as a distinctly thorough conscious and unconscious reflection on experiences. Indeed, this probably innate tendency is found in about twenty percent of humans, and, in a sense, in most species, in that about this percentage will evidence a strategy of thoroughly processing information before taking action, while the majority depend on efficient, rapid motor activity. Given this thorough processing, sensitive individuals readily detect subtleties—including whatever is distressing or threatening. Hence, as Jung observed, given the same degree of stress in childhood as non-sensitive individuals, sensitive persons will develop more depression, anxiety, and shyness. Without undue stress, they evidence no more of these difficulties than the non-sensitive—or even less, being unusually aware of supportive as well as negative cues from caregivers. Given this interaction, one treatment task is to distinguish the effects of such childhood difficulties from what does not need treatment, which are the typical effects of the trait itself on an adult without a troubled developmental history.

*Key words:* introversion, intuition, neuroticism, sensitiveness, sensitivity, survival strategies, temperament, traits, typology.

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A certain innate sensitiveness produces a special prehistory, a special way of experiencing infantile events, which in their turn are not without influence on the development of the child's view of the world. Events bound up with powerful impressions can never pass off without leaving some trace on sensitive people.

(Jung 1913, para. 399)

This paper revisits Jung's concept of innate sensitiveness by (a) discussing recent empirical research on sensitivity, including the author's (Aron & Aron 1997, 2004); (b) reviewing Jung's thoughts on the trait, along with the use of the term by other depth psychologists and its relation to the introverted attitude and intuitive function; and (c) exploring the interaction of the trait with life experiences, which Jung had specifically noted (why, for example, data indicate

that sensitive persons, given the same degree of stress in childhood as non-sensitive individuals, will develop more depression, anxiety, and chronic shyness, but without that stress, evidence no more of these difficulties, or perhaps even less, than the non-sensitive).

### My own and others' research on sensitivity and related concepts

In 1990, after yet again hearing an analyst aptly describe a struggling patient as 'highly sensitive', I became curious enough about the term to review the psychological literature on the subject. The results were meagre (I had not yet found Jung's discussion of sensitiveness in *CW* 4). But as sensitivity seemed to overlap with or even be equivalent to introversion, the research on introversion seemed to be the next place to turn. Here there was a great deal—introversion and extraversion now seem to be the most empirically studied of personality differences. However, introversion-extraversion is generally measured as the degree of sociability (e.g., Humphreys & Revelle 1984), which is far from Jung's conceptualization of introversion as the preference to approach a situation by attempting to understand it thoroughly through subjective processing (Jung 1921, para. 631).

Furthermore, there is an odd circumstance throughout the years of research on the physiological differences between introverts and extraverts. As noted, measures mainly of sociability are used to sort out introverts from extraverts. Yet these hundred or more physiological studies then proceed to focus on another, seemingly more important distinction: Introverts are more physically sensitive. Introverts also process information more thoroughly and prefer to reflect before acting (findings which seem more supportive of Jung's 1921 description of introverts as pulling back from the object and taking a more subjective viewpoint of it). As a few examples of this research, introverts have been found to be more sensitive to stimuli and stimulants (for reviews, see Geen 1986, Stelmack 1990, Stelmack & Geen 1992), more vigilant during discrimination tasks (for a review, see Koelega 1992), more influenced by implicit learning paradigms (Deo & Singh 1973), more reflective when given feedback (Patterson & Newman 1993), and slower to acquire and forget information due to their depth of processing input into memory (Howarth & Eysenck 1968). In the words of Stelmack, 'there is a substantial body of evidence... that converges on one general effect, namely the greater sensitivity (or reactivity) of introverts than extraverts to punctuate physical stimulation' (1997, p. 1239). Patterson and Newman (1993), like Brebner (1980), conclude that introverts are best described as more reflective and stringent in their criteria for responses. And this greater sensitivity and its physiological correlates are found at all levels of the nervous system, from measures of skin conductance, reaction times, and evoked potential (Stelmack 1990) to subcortical areas (Fischer et al. 1997) to differences in cortical processing (generally more right hemisphere activity, e.g. Berenbaum & Williams 1994). In short, while

introversion has been assessed in the research literature mainly as low sociability, an equally or more important characteristic is a greater physical sensitivity and cognitive depth of processing.

Curious enough now about sensitivity in its own right to begin research, I interviewed forty persons from age 18 to 80 and representing many occupations, but all self-described as highly sensitive (Aron & Aron 1997, Study 1). Many common characteristics emerged from these interviews that fit well with the physiological findings regarding introverts, except that, of those interviewed, about 30% were social extraverts. But if sensitivity was not just another name for introversion, then what was it?

Given the physiological research on introversion as well as other research on infant temperament to be discussed, it seemed that the fundamental individual difference I was trying to understand might be a difference in the nervous system's sensitivity and thoroughness of processing, whether conscious or not. This sensitivity was being uncovered by research on introversion because of the overlap between sensitivity and low sociability. Thinking from this model, I constructed a 27-item questionnaire (Aron & Aron 1997) with questions as varied as 'Are you made uncomfortable by loud noises?', 'Do you have a rich, complex inner life?' and 'Do you become unpleasantly aroused when a lot is going on around you?' In extensive testing, this questionnaire was highly internally consistent—that is, these seemingly diverse items appeared to tap a single construct—as well as being externally validated by appropriate associations with related measures, such as Mehrabian's (1976) scale for assessing low sensory screening.

As it seemed from the interviews, systematic statistical comparisons with measures of social introversion in several large survey studies (Aron & Aron 1997, Studies 2–7) found that sensitivity was moderately related to, but was not the same as, social introversion (the same analysis was done using standard measures of neuroticism or negative emotionality.) But what then is the reason for this partial overlap of sensitivity and social introversion? Based on my observations and research, it seems that most highly sensitive people are social introverts because, as Jung described (1916, para. 557), they find themselves needing to defend against the object. Moreover, the underlying reason for this defence might be the innate preference for a more thorough subjective processing of information regarding all objects (*ibid.*, para. 621), so that, in particular, numerous or novel objects would place high demands on the sensitive person. The reverse is also probably true—being so affected by objects creates a desire in sensitive persons to process all of this sensory information before trying to respond. Either way, for highly sensitive people, avoiding the intense stimulation of social interaction with strangers or in groups can be an effective strategy to minimize opportunities for uncomfortable overstimulation.

As for the important minority of highly sensitive people who are social extraverts, the interviews revealed that most had grown up in supportive extended families in which social interaction was a source of comfort and

protection from other sources of overstimulation and anxiety—for example, the risk of failures or facing too many sudden changes. (However, unlike the image of extraverts generally, these highly sensitive social extraverts still reported needing considerable ‘down time’ alone or at least in silence.) Another contribution to the lack of a perfect correlation between social introversion and high sensitivity is that there are certainly non-sensitive individuals who are socially introverted, not as a general strategy to avoid overstimulation, but due to avoidant attachment styles (Bowlby 1969; Cassidy & Shaver 1999) or other negative experiences with social interaction.

### A possible physiological and genetic basis for sensitivity

As for the physiological basis for high sensitivity, perhaps the most likely explanation comes from Gray’s (1981, 1985) identification of those brain structures (mainly the septo-hippocampal system, 1985, p. 8), which he called the ‘Behavioral Inhibition System’ (BIS). Its function is to compare the present situation with what would be expected based on past experiences, momentarily inhibiting action. Individual differences in BIS strength—the care with which this comparison can be made—are genetically determined, according to Gray.

While Gray sometimes related the BIS to anxiety, he in fact doubted that relationship (1981, p. 270), because when the BIS is strong in an individual, it is more thorough not only in processing threatening stimuli, but stimuli in general. For example, Siegelman (1969) found that children with ‘reflective styles’ used more eye movements in order to compare choices before making a decision in which no risk or threat was involved. That is, the BIS can be used equally well to achieve a goal as to avoid a danger. Thus the BIS cannot be equated with Davidson’s (1992) withdrawal system, which is associated with the amygdala and fear reactions, although both it and the BIS do involve the right hemisphere. (In this same model Gray also identified a Behavioral Activation System; strength in this system leads to the strong curiosity or orientation to reward that seems to underlie Zuckerman’s, 1993, trait of ‘sensation seeking’. Interestingly, being separate systems, the two traits are independent so that an individual can be high in both sensation seeking and sensitivity, or low on both, or high on one but not the other, which was supported by my own 1999 research and which has important clinical implications to be discussed later.)

Other physiological theories are likely to be advanced as the implications of sensitivity are further explored, but an important issue raised by any physiological explanation is the evidence for sensitivity being an innate trait. No doubt it is possible for individuals to *become* sensitive in certain senses—for example, hypervigilant due to PTSD. But it has been a central point of those studying temperament in infants and children that some trait similar to what I am calling sensitivity is innate, whether they call it ‘reactivity’ (Rothbart 1989), ‘inhibitedness’ (Kagan 1994), or ‘infant shyness’ (Daniels & Plomin

1985), and numerous full-design twin studies are cited (e.g., DiLalla et al. 1994; Kendler et al. 1992; Daniels & Plomin 1985) as evidence for heritability. Thus, in commenting on the research on the extreme fear and shyness which develops in some children who were reactive as infants, but not others, Chrousos and Gold (1999) concluded that these 'stress related conditions are grounded in a genetic vulnerability which is not simple Mendelian but polygenic and which allows expression of the clinical phenotype in the presence of triggers from the environment. [But] there is no question that there is a very complex genetic background continuum in the population of human beings, from extreme resilience to extreme vulnerability... [so that, depending on the individual,] environmental triggers (stressors) of diminishing size would be required to cause expression of these conditions' (p. 195-6).

Finally, based on his extensive infant observations, Stern (1985/2000) describes constitutional differences in thresholds of stimulation tolerance as central to understanding the infant's interpersonal world, and states that 'Different people... can be described as having different thresholds, set at characteristically higher or lower levels for tolerable amounts of stimulation and for tolerable durations of exposure. The relationship of the infant to external stimulation is *qualitatively* the same throughout the life span' (p. 233; italics in original).

It is well understood now that genes are regulated by environmental signals throughout the course of development, and early experiences are extremely important in determining long-term individual differences in how these signals will affect brain function and behaviour (e.g., McEwen 1999). Some of these influences are actually prenatal. For example, decreased day length during pregnancy is related to shyness at two years (Gortmaker et al. 1997), and even among identical twins there are prenatal differences, presumably random, in how much amniotic fluid and blood flow from their umbilical cords they receive, perhaps causing the observed differences in activity level, distinctive movements, and preferred position in the uterus (Piontelli et al. 1999). One way in which the early outer environment is translated into a brain environment influencing structures and functions is through hormones (McEwen 1999). Particularly important for long-term development are hormones affecting the hypothalamic-pituitary-adrenocortical system or HPA (e.g., studies of pre- and post-natal stress and postnatal handling in rats, reviewed in McEwen 1999, indicate that each of these treatments leads to changes in HPA hormonal levels, and depending on whether these exist in an elevated state for a long period, will determine later behavioural vulnerability or resilience). Thus a genetic explanation must include an appreciation of the complex role of pre- and post-natal environments and experiences, which will be further discussed below.

Some genetic basis for the trait, however, would be consistent with its serving an evolutionary function, which is suggested by its non-trivial rate (about 15 to 20%, Kagan 1994), with apparently equal numbers of males and females in the population (Rothbart et al. 1994) and a similar rate for

something like it in most species (e.g., ‘reactivity’ in primates, Suomi 1991; ‘timidity’ in sunfish, Wilson et al. 1993; ‘sitters’ in fruit flies, Renger et al. 1999). Biologists (e.g., Wilson et al. 1993) suggest that the existence of two inherited ‘personalities’ in most species may allow individuals to take better advantage of any environmental change—each type has a strategy that will succeed if the other fails. The type that is ‘sensitive’ or ‘reactive’ would reflect a strategy of observing carefully before acting, thus avoiding dangers, failures, and wasted energy, which would require a nervous system especially designed to observe and detect subtle differences. It is a strategy of ‘betting on a sure thing’ or ‘looking before you leap’. In contrast, the active strategy of the majority is to be first, without complete information and with the attendant risks—the strategy of ‘taking a long shot’ because the ‘early bird catches the worm’ and ‘opportunity only knocks once’. The two strategies affect foraging (and parasites), mating, parenting, defending territory, and avoiding predators. The relative survival advantages of the two and their percentages are determined by changes in the environment favouring one or the other. Interestingly, although making an inter- and not an intra-species comparison, Jung (1921, para. 559) identified the same two strategies.

### The research and trait within a cultural context

Humans, of course, seem to evaluate and elaborate with rich symbolism and intellectual meaning every instinctual system, from eating and mating to establishing territories and maintaining social groups. The means of all of this elaboration and evaluation is, of course, culture, and the apparently innate strategy of observing before acting is not excluded from this cultural attention. As Margaret Mead (1935/1963) observed, newborns evidence a broad range of inherited temperaments, or metaphorically, a full palette of colours. The ‘strategy’ of being sensitive is only one of these traits (although apparently the first to appear, Rothbart 1989). The culture the infant enters, however, will select as its ideal only a narrow band of traits—a certain type, a few colours. As Mead wrote, that ideal is then embodied in ‘every thread of the social fabric—in the care of the young child, the games the children play, the songs the people sing, the political organization, the religious observance, the art and the philosophy’ (p. 284)—and of course, the psychological theory, research, and treatment.

The preference for the non-sensitive personality seems strongest in young nations of recent immigrants (e.g., the Americas and Australia) or societies under threat (Sanday 1991), in which bold action might be a better strategy than observing and reflecting. For example, a study by Chen et al. (1992) found that in China being a ‘sensitive, quiet’ elementary school child is associated with peer popularity (such children are *guai*, ‘good or well behaved’, and said to have *dong shi*, understanding, a common term of praise for children); the same characteristics were associated with being unpopular with peers in Canada.

This negative evaluation in North American culture is probably reflected in some of the terms with which the trait seems to be equated in adults: 'innate neuroticism' (Viken et al 1994), 'low sensory screening' (Mehrabian 1991), 'withdrawing tendencies' (Eliot & Thrash 2002), 'harm avoidance' (Cloninger 1987), and mild autism (Ratey & Johnson 1997). In contrast, several Japanese psychologists (e.g. Nagane 1990; Satow 1987) have simply termed the trait 'sensitivity', much as I have defined it, and have studied it for decades.

When traits receive strong focus, whether to increase or decrease their expression, we might suspect that they have become the core of a cultural complex (Kimbles 2000). When a culture is not aware of this or any other complex, it can be considered buried within the cultural unconscious (Henderson 1990)—in this case as a strong assumption of what is a good trait, what is a bad one. It is reasonable that relatively stressed or aggressive cultures would discourage reflection and sensitiveness, especially in men (Sanday 1991). In such societies men are needed to protect and compete (women, being the child bearers, are too important to risk in combat), and reflection and sensitivity to subtle stimulation are seen as less useful. Hence in these cultures the trait is associated with women and especially discouraged in boys. For example, U.S. mothers rating their preferred offspring tend to like best a shy daughter but like least a shy son (Hinde 1989). However, as gender differences are increasingly de-emphasized in favour of individual achievement and tolerance for highly stimulating environments, it seems possible that sensitivity will be increasingly discouraged in girls as well, at least in cultures raising children to serve in a competitive world market. Thus it would seem that a cultural complex regarding a trait can be easily transmitted through being highly encouraged or discouraged by parents, teachers, and peers, with all of this reinforced by the terms for it chosen by its psychologists.

Looking more carefully at how this discouragement of sensitivity might proceed, one can imagine, for example, that during moments of affect attunement with the caregiver, beginning at 7 to 9 months (Stern 1985/2000), an infant's startled response to a loud noise or hesitation in the face of novelty might be ignored or selectively misattuned by the parent's emotional response of enthusiasm. Indeed, the life-long pattern of HPA activation may be altered in the first weeks of life (Super & Harkness 2000), simply by individual parents following cultural norms. For example, young infants in the U.S. were found to sleep two hours a night less compared to young infants in Holland. According to the authors, Dutch parenting practices encourage more quiet, sensitive, thoughtful behaviours and are governed by three words: 'rest, regularity, and cleanliness'. Infants are not the centre of attention or 'jazzed up' by their parents, while the U.S. parents, especially in the evening, made their infants a source of play and entertainment. Further, the cortisol levels of Dutch infants were high in the morning and decreased as bedtime approached; the levels of the U.S. infants increased steadily until bedtime (a pattern, the authors noted, that is similar to corporate executives).

Does the impact of culture mean that the idea of a truly innate trait is meaningless, in the sense that it will not be allowed to be displayed? My own sense of this, given my interviews and clinical experience, and seemingly echoed by Stern (1985/2000), is that child rearing, and culture generally, cannot entirely eliminate this individual difference, but it can certainly channel it into tolerated outlets and leave those possessing it with a sense of being wrong or flawed. For example, in a study (Paulhus & Morgan 1997) of persons who were initially quiet in leaderless discussion groups, after two sessions both those who were quiet and the others in the group rated the quiet individuals as less intelligent, creative, and wise by their peers (there was in fact no relation between shyness and an I.Q. measure). After seven group meetings, this bias disappeared from the peer ratings but not from the self-ratings. Thus we can imagine that the behaviour of quietness (perhaps due in some to an innate trait, perhaps not in others) was stable; the cultural complex as expressed in the group subsided with familiarity, but its impact on the quiet individuals, no doubt from many prior experiences, was not so easily removed. Still, perhaps for genetic reasons, quietness as a behaviour has clearly not been eliminated by the prevailing negative view of it.

It is worth noting that while the cultural complex generally rejects sensitivity, the other half of the complex, suppressed, might easily generate a compensatory idealization of some highly sensitive persons, even if they are not labelled as such. In some cases these are men who are both sensitive and tough, the socially awkward 'strong silent types'—for example, the old cowboy heroes and the 'Star Trek' character Jean Luc Picard, who is based on the sensitive, calm Horatio Hornblower. Idealization might also lead those without the trait to think they have found a brilliant mate, adviser, healer, psychic, or even prophet or saviour in a relatively ordinary person who is merely more sensitive, in the sense being described here, than themselves.

If there are two instinctive strategies in humans, they must express themselves archetypally as well. And indeed, the two are part of the very structure of Indo-European cultures (Dumezil 1939). The power in these cultures is balanced between two groups—the warrior kings and their 'priestly advisers' (e.g., royalty and priesthood in European history; Brahmins and Kshatriya in ancient India; executive branch and judicial branch in Western-style democracies), with the people's will represented by a third class of lower status. The warrior kings are expected to be bold, decisive. Their priestly advisers, expected to be more reflective, provide insight and strategy as well as raising long-term practical and ethical concerns. Because of their probable origins among nomadic peoples, Indo-European cultures tended to be more aggressive than those they supplanted during the neolithic era (Legg 1971). But this social organization is probably typical of most aggressive cultures, given the social organization of the Aztecs and Iroquois, for example. By making use of both 'types', an aggressive culture could be more successful than one ruled by only one type. Hence a balance of power between the two governing classes is



generally associated in sagas (e.g. the legends of King Arthur, the *Mahabharata*) with good periods and an imbalance with war and hard times.

Whether sensitive individuals in fact fill the role of priestly advisers, this organization of society may reflect the genetic organization of the human species, but in that elaborated way that humans have. And if sensitive persons do tend to play that role, then it would be especially important for a culture to maintain some dynamic equilibrium of the influence between the two types.

It seems likely that the complex regarding sensitivity would extend to the consulting room, which would be especially unfortunate because, according to Jung (1913), many or perhaps most of our patients possess this sensitiveness. Since Jung (1913) himself struggled with his own complex regarding it, as we will see next, it seems important for the Jungian tradition that we re-awaken to this complex and examine our own attitudes towards sensitivity, while perhaps helping to restore some equilibrium in the culture as well.

### Jung on the sensitive individual

When he retracted his seduction hypothesis in 1897, Freud was obliged to find an alternative explanation for neurosis in order to answer the riddle of why, if all have the same inner drives and conflicts, do some develop neuroses. If the answer was not early trauma, then it had to be a constitutional flaw. Constitution had been the mainstream medical explanation for psychopathology, and Freud had been deeply set against it. But in the famous letter to Fleiss, in which Freud (1897/1954) first admitted that he could not believe there were enough perverted fathers to explain all the neuroses, he wrote that 'the factor of a hereditary disposition regains a sphere of influence from which I had made it my business to oust it' (p. 216).

There was an obvious way, however, that Freud could be comfortable with a constitutional explanation, and he applied it in his *Three Essays on the Theory of Sexuality* (1905/1953), some of his first writings on his new insights. He decided the cause of neurosis was a peculiarly sexual constitution, 'an excessive intensity of sexual instinct' and 'an innate strength of the tendency to perversion' (p. 170).

Jung's (1913) own contribution of a constitutional explanation for neurosis appeared in his 1912 lectures at Fordham, just before his break with Freud. In these talks he was clearly trying to stay within the fold of psychoanalysis without sacrificing his growing clarity on certain points. Much attention has been given to Jung's rejection of libido as sexual energy in the narrow sense, but we mostly ignore the context of this discussion—the question of what exactly is the crucial constitutional difference in neurotics if it is not a tendency to sexual perversion.

Jung's answer, in a section titled 'sensitiveness and regression' (1913, para. 391–5), was that fantasies, including sexual and incest fantasies, represent a regression of libido to early psychosexual phases of our capacity to invest objects

with interest. Jung saw these fantasies as normal (*ibid.*, para. 573), but those who are more sensitive will regress to these early fantasies when faced with a current difficulty. The activation of the fantasy and reporting of it means ‘*an act of adaptation has failed*’ (Jung’s italics, para. 574). These same persons as children were also more sensitive to early traumas, especially sexual innuendos or actual experiences, which provide the fantasies with their content or flavour.

In answer to a paragraph heading, ‘Is Sensitiveness Primary?’ (1913, para. 396)—that is, is it the primary explanation for neurosis—Jung states decisively that it is, and it is inborn, not the result of early trauma. ‘An attentive observer of small children can detect, even in early infancy, any unusual sensitiveness’ (Jung 1913, para. 397).

Note that Jung (1913) was still of the opinion that trauma, whether sexual or otherwise, also played a major role in psychopathology, as did all aspects of a child’s early life. But constitution could not be ignored. The importance he placed not only on the contributions of both nature and nurture but on their interaction (which is entirely consistent with the empirical research and clinical experience which I will review shortly) is present in the following (also quoted in part at the beginning of this article):

In reality, it is not a question of either one or the other [constitution or experience]. A certain innate sensitiveness produces a special prehistory, a special way of experiencing infantile events, which in their turn are not without influence on the development of the child’s view of the world. Events bound up with powerful impressions can never pass off without leaving some trace on sensitive people. Some of them remain effective throughout life, and such events can have a determining influence of a person’s whole mental development. Dirty and disillusioning experiences in the realm of sexuality are especially apt to frighten off a sensitive person for years afterwards, so that the mere thought of sex arouses the greatest resistances.

(Jung 1913, para. 399)

Jung illustrates his points about the interaction of innate sensitiveness with environment and experience with a case involving two sisters. When life presents the two with difficulties surrounding their engagements, the younger and less sensitive sister thrives, being

a fine courageous girl, willing to submit to the natural demands of womanhood; the other [elder] was gloomy, ill-tempered, full of bitterness and malice, unwilling to make any effort to lead a reasonable life, egotistical, quarrelsome, and a nuisance to all around her. . . . Originally the conditions were exactly the same for both sisters. It was the greater sensitiveness of the elder that made all the difference.

(Jung 1913, para. 390)

Jung’s ambivalence towards the trait, which he is equating with neurosis, is perhaps the outstanding feature of these lectures. When his view of the trait was negative, he likened the neurotic (as seen above, sensitiveness was his *primary* explanation for neurosis) to a man climbing a rock face who is capable of the climb but who ‘shrank back from the difficult undertaking from

sheer funk' (para. 380). The libido is in conflict between wanting to climb and fearing it, and so regresses. 'This kind of reaction is called *infantile*. It is characteristic of children and of naïve minds generally' (para. 382). None of which should be surprising, Jung tells us, as a 'striking number of neurotics were spoiled as children' (para. 320).

Later in the same paper he writes, 'The ultimate and deepest root of neurosis appears to be innate sensitiveness, which causes difficulties even to the infant at the mother's breast, in the form of unnecessary excitement and resistance' (para. 409).

Or consider this treatment of the special impact of trauma on the highly sensitive. The unsympathetic italics in the following statement are Jung's:

We must never forget that the world is, in the first place, a subjective phenomenon. *The impressions we receive from these accidental happenings are also our own doing.* It is not true that the impressions are forced on us unconditionally; our predisposition conditions the impression.

(Jung 1913, para. 400)

On the other hand, at other points in this 1912 lecture, Jung evidenced a surprisingly vigorous sympathy for 'neurotics', especially where he is disagreeing with Freud or in additions made to the text after the break with Freud. One senses in the strength of these opposite opinions a constellated issue in Jung, or certainly one that he had not as a scientist yet resolved.

For example, of the two sisters in the above case, it is likely that Jung personally liked the more sensitive one.

An attentive observer might have discovered that the elder daughter was rather more the darling of her parents than the younger. Her parents' esteem was due to the special kind of sensitiveness which this daughter displayed...just those things which, because of their contradictory and slightly unbalanced character, make a person especially charming.

(Jung 1913, para. 384)

In the following comments his ambivalence is equally clear. (Note Jung's presumably casual mention of the percentage of those with the trait, which is very close to what has been found empirically [Kagan 1994]):

This excessive sensitiveness very often brings an enrichment of the personality and contributes more to its charm than to the undoing of a person's character. Only, when unusual situations arise, the advantage frequently turns into a very great disadvantage, since calm consideration is then disturbed by untimely affects. Nothing could be more mistaken, though, than to regard this excessive sensitiveness as in itself a pathological character component. If that were really so, we should have to rate about one quarter of humanity as pathological. Yet if this sensitiveness has such destructive consequences for the individual, we must admit that it can no longer be considered quite normal.

(Jung 1913, para. 398)

In addition, Jung began in 1912 to make the case for the role of sensitive persons in culture that he would later make for the introverted intuitive in *Psychological Types* (1921), and for those who cannot accept collective answers to spiritual questions, in the papers constituting *Modern Man in Search of a Soul* (1955). In bracketed material that Jung (1913) added later to the end of the seventh lecture, he wrote that the regression typical of sensitive sorts has a teleological side. Their ‘apparently pathological fantasies... are... the first beginnings of spiritualization... the possibility of discovering a new life’ (para. 406). In the next lecture he stated that neurosis has ‘a meaning and a purpose’ (para. 415). When the unconscious fantasies are made conscious, the meaning is revealed and the person is able to return to fulfilling his or her duties—not social duties, but duties to the self. Jung spends several pages on this distinction, beginning to work out his concept of individuation. And he sees neurotics, again essentially equated by him with sensitive persons, as being, ‘because of their intelligence’ (para. 424), overly conscientious about social duties, but often ignorant about ‘the incomparably more important duties to themselves’ (para. 424). Later he explains this personal duty to be the achieving of a ‘harmony with himself, neither good nor bad, just as he is in his natural state’ (para. 442).

During analysis, Jung noted, the goal is to free the regressed libido for the task of creating this inner harmony, but the regressed energy tends to stay attached to the analyst, which eventually leads to a crisis and a heroic sacrifice uniquely associated with the sensitive person. For example, he said that in asking the neurotic to give up that intense attachment, ‘we are asking of him something that is seldom, or never, demanded of the average person, namely, that he should conquer himself completely. Only certain religions demanded this of the individual’ (para. 443). He adds:

The neurotic has to prove that he, just as much as a normal person, can live reasonably. Indeed, he must do more than a normal person, he must give up a large slice of his infantilism, which nobody asks a normal person to do.

(Jung 1913, para. 445)

In another introductory lecture on psychoanalysis (1916), also delivered while in the U.S., Jung summarizes his views on ‘congenital sensitiveness’, to which he gave a central role in this talk as well:

A sensitive and somewhat unbalanced person, as a neurotic always is, will meet with special difficulties and perhaps with more unusual tasks in life than a normal individual, who as a rule has only to follow the well-worn path of an ordinary existence. For the neurotic there is no established way of life, because his aims and tasks are apt to be of a highly individual character. He tries to go the more or less uncontrolled and half conscious way of normal people, not realizing that his own critical and very different nature demands of him more effort than the normal person is required to exert.

(Jung 1916, para. 572)

In the rest of this paragraph, Jung repeats the points made in the first lecture—that sensitiveness can be seen in the first weeks of life in the future neurotic's 'exaggerated nervous reactions', which are a 'predisposition... anterior to all psychology', and that it is a resistance to adaptation which blocks libido and causes it to find another outlet, one that is 'abnormal or primitive' or, with analysis, one which he implies again is unique and spiritual. Finding the right outlet is a 'highly moral task of immense... value' (para. 575).

This final observation is repeated in a March 1913 letter to Dr. Loy:

So it comes about that there are many neurotics whose inner decency prevents them from being at one with present-day morality and who cannot adapt themselves so long as the moral code has gaps in it which it is the crying need of our age to fill. We deceive ourselves greatly if we think that many married women are neurotic merely because they are unsatisfied sexually or because they have not found the right man or because they have an infantile sexual fixation. The real reason in many cases is that they cannot recognize the cultural task that is waiting for them...

Thus your question about the significance of the loss of faith in authority answers itself. The neurotic is ill not because he has lost his old faith, but because he has not yet found a new form for his finest aspirations.

(Jung 1914, paras. 668–9)

### Jung and introversion

Interestingly, while my research led me from regarding this trait as introversion to seeing it as sensitivity, Jung seems to have made the reverse journey. We know that Jung wrote *Psychological Types* (1921) during and after his break with Freud and his inner descent into the unconscious. While Jung saw his typology as in part an attempt to understand his differences with Freud, perhaps it was also an unconscious attempt to explain to himself how he had become as overwhelmed as some of his most disturbed patients. The judgments are kinder now. 'Sensitiveness' is no longer an important enough descriptive term to be found in the index, as it was in Volume 4. But the person with a congenital difficulty to adapting to external reality is as present as ever, now as the introvert, the intuitive, and the introverted intuitive most of all.

In *Psychological Types* (1921) Jung defined the introvert as a person who directs psychic energy inward, away from objects (para. 769), as if they are experienced as too powerful (para. 557). Thus the idea of 'sensitiveness' remains as the basic physiological characteristic of sensitivity to stimuli. Further, he contrasts the extravert's immediate approach towards the object with the introvert's subjective experience interposing itself between himself or herself and the object (para. 620), suggesting the deeper processing typical of sensitive persons. Subjectivity—'*the impressions we receive from these accidental happenings are also our own doing*' (1913, para. 400)—is no longer 'infantile' (para. 382). Note that in these explanations of introversion, Jung was not

equating it at all with social introversion, although he did in some subsequent descriptions, as have most Jungians and non-Jungians.

As he did when discussing sensitiveness, Jung still spoke of the shortcomings of introversion. For example, the form neurosis will take will be 'a compulsion neurosis with hypochondriacal symptoms, hypersensitivity to the sense organs, and compulsive ties to particular persons or objects' (Jung 1921, para. 663). But ultimately he finds these types laudable for their greater contact with the unconscious.

From an extraverted and rationalistic standpoint, these types are indeed the most useless of men. But viewed from a higher standpoint, they are living evidence that this rich and varied world with its overflowing and intoxicating life is not purely external, but also exists within. These types are admittedly one-sided specimens of nature, but they are an object lesson for the man who refuses to be blinded by the intellectual fashion of the day. In their own way, they are educators and promoters of culture. Their life teaches more than their words...their lives teach the other possibility, the interior life which is so painfully wanting in our civilization.

(Jung 1921, para. 665)

In sum, in a sense analytical psychology is founded on Jung's little known emphasis on inherited sensitivity. His was a strongly ambivalent consideration, reflecting the cultural complex: a distaste for this seeming weakness, and a fear of coddling 'a man climbing a rock face' who shrinks 'back from the difficult undertaking out of sheer funk' (1913, para. 380). But Jung also saw these, 'the most useless of men' (note the issue of men in particular), as having a 'higher' purpose, to point the way inward. One could even make a case, from the progression of Jung's thinking, that he developed his typology in order to normalize those who are sensitive, to find other terms for them besides neurotic, and to honour their different purpose for living.

### The relation of introversion, intuition, and high sensitivity

Interestingly, as with introversion, Jung's description of the intuition function also refers to the subjective experience of objects, in that it is 'an active, creative process that puts into the object just as much as it takes out' (1916, para. 610). Further, it involves a more thorough processing of the object, an attempt 'to apprehend the widest range of *possibilities*' (para. 612). Just as the processing of the sensitive person is often not conscious, intuition is not a conscious process—the final product is known as an idea or image (para. 700). As for the empirical relation of questionnaire measures of the function and sensitivity, a dominant intuitive function is typical of the self-identified sensitive person (Aron 1996). It is rare in my experience to find a sensitive person who is neither introverted nor intuitive. (Sensitive individuals are about equally likely to evidence on questionnaires a strong thinking or feeling function.) Thus, given the emphasis on thorough subjective processing of information found

within the definitions of intuition, introversion, and sensitiveness, all three seem, in this sense only, to be nearly equivalent.

Preserving the distinctions, however, also seems important. In particular, it seems futile to try to restore Jung's broader meaning of introversion, given the use of the term by the public and general psychology as mere sociability. This would leave in a kind of conceptual limbo the thirty percent of sensitive persons whom I found, both in interviews and on three of the current paper-and-pencil measures, to be social extraverts (Aron & Aron 1997). It seems wiser to enjoy the benefits of Jung's typology while also retaining and further exploring his original term.

### The use of the term 'sensitivity' by other analytical psychologists

The concept of innate sensitivity is certainly widely used in analytical psychology, even if rarely explored. For example, in *The Scapegoat Complex* Perera writes that 'Individuals who are overstimulated by parental needs or who are especially sensitive by nature may perceive both pain and pleasure intensely' (1986, p. 34). And on the first page of the first chapter of *The Inner World of Trauma*, Kalsched writes, 'In most cases these patients were extremely bright, sensitive individuals who had suffered on account of this very sensitivity some acute or cumulative emotional trauma in early life' (1996, pp. 11–12). (However, neither author elaborated on or indexed the term.)

Fordham (1974) did not discuss sensitivity explicitly, but implied it in 'Defences of the self' by using constitution to explain the unusual difficulty presented by some patients. 'I cannot convince myself that a bad start in life will always account for the syndrome' (p. 197) and 'therefore this position presupposes a constitutional component of the self' (p. 198).

The concept is also given a passing reference in the work of psychodynamic and object relations theorists (e.g., Ogden 1986, who discusses constitutional sensitivity himself as well as in his review of Klein and Winnicott, although nothing about this is referenced in the index) and self psychologists (e.g., Kohut 1971). Stern (1985/2000), as stated above, places considerable emphasis on individual differences, especially threshold for overstimulation.

The capacities that permit the infant to yoke his diverse experiences of the social world are to an enormous extent constitutionally—that is, genetically determined. . . . For the immediate future, the study of individual differences of these capacities may prove to be the most fruitful area of clinical research on in the very young.

(p. 188)

In short, in a sense the depth psychological community has intuited sensitivity without the full awareness of it that would lead to a conscious discussion of its implications and interaction with experience.

### The interaction of innate sensitivity and environmental stressors in childhood

Of course nature interacts with and *through* nurture to produce the adult we see before us, as psychotherapists know well and Jung made clear in his story of the two sisters exposed to the same sexual incident. An empirical example is a study (Aron & Aron 2004) using two large samples of adults who were asked reasonably objective questions about the conditions during their childhood (e.g., was their father or mother absent from the home? Was there mental illness or alcoholism in the immediate family?). Those who were highly sensitive and reported poor conditions during childhood also reported more anxiety, depression, and shyness on standard measures than did the non-sensitive study participants with the same level of poor conditions. However, study participants who were highly sensitive and reported adequate conditions during childhood were no more likely than the non-sensitive to report anxiety, depression, or shyness.

Other research (Boyce et al. 1995; Gannon et al. 1989) also indicates that when sensitive children are raised under stress at home and at school, they are more prone to illness and injury than non-sensitive children; but if raised without undue stress, sensitive children are slightly *less* prone to illness or injury than the non-sensitive. (For more research examples of the interaction of temperament and parenting, see Aron 2000, Aron in press.)

When clinicians think of the interaction of early childhood experience with temperament, we are more likely to think of the literal interpersonal interaction. It is clear from detailed studies of the neurobiology of human development (Schore 1994; Siegel 1999; Stern 1985/2000) that infants—indeed, all mammal offspring—develop physical and emotional regulation through physical proximity, affect attunement, and all types of interactions with caregivers. In particular, human interactions help infants determine which emotion to feel in a situation, how to express it, and how to control it if necessary. This seems to be particularly true for sensitive individuals. For example, Gunnar (1994) and her colleagues have conducted a number of experiments looking at the physiological reactions of ‘inhibited’ toddlers in highly stimulating, novel, or threatening environments, with or without a supportive caregiver. Regardless of caregiver supportiveness, in these environments all inhibited toddlers had higher adrenaline levels (indicating short-term arousal) than uninhibited toddlers. However, inhibited toddlers’ cortisol levels (indicating long-term arousal in response to a threat) rose only when there was a lack of caregiver support—in one study, an insecure attachment with their mother, and in another, being left for a half hour with an inattentive (versus an attentive) temporary caregiver. Social support had essentially no impact on uninhibited toddlers in the same situations.

The stronger positive effect on sensitive children of caregiver support and attachment security may be due not only to a greater vulnerability when not supported, but to a greater actual security when they are supported—sensitive children may be more aware of subtle signs of all sorts from caregivers, including



positive signs (Boyce et al. 1995). (The same principle may hold for a sensitive person's ability to benefit from a psychotherapeutic relationship.) This may also explain the empirical finding, discussed below, that sensitive children are no more likely than the non-sensitive to evidence an insecure attachment with caregivers—those experiencing a heightened insecurity are offset in these studies by others who are experiencing a heightened security.

Another way of understanding the tendency towards more depression, anxiety, and shyness in sensitive persons with difficult childhoods is in terms of their fantasies, which, as we saw, Jung discussed in the same context as sensitiveness (1913, para. 573). Knox (2003) points out that what Jung was recognizing in these fantasies foreshadowed Bowlby's (1969) later idea of the child's mental representations of the caregiver, but Jung's conceptualization of them as fantasies expands on the contents of these representations into full scenarios or narratives. Like all internal working models, these fantasies are attempts 'to provide a meaningful narrative that can then be used to predict and control danger' (Knox 2003, p. 217). However, we appreciate now that these elaborations are frequently about how to respond to threatening situations, such as dangerous, intrusive, or neglectful caregivers, so that there is also a need to defend against the overwhelming affect associated with these narratives. In these cases the fantasies or narratives may become dissociated to some degree, and become what Jung described as split-off complexes which continue to guide behaviour from the unconscious. The more grandiose pole (Fonagy 2001) may be the focus of the regression; for example, identification with the father in an incest fantasy, or a fantasy of achieving such superiority in some endeavour that love and respect are assured. A more vulnerable, insecure, one-down pole of the complex may be less accessible (although it seems that the reverse is equally common; many patients are conscious of their vulnerability and unconscious of their grandiosity).

According to Jung, sensitiveness leads to the elaboration of such fantasies in two ways. First, it causes these individuals to experience childhood events 'in a special way, perhaps more intensely and enduringly' (1913, para. 397). Second, in adulthood, memories of these stressful experiences lead to more frequent failures to adapt, so that sensitive persons are more likely to regress to the fantasies (1913, para. 405). If we think of these fantasies as, in Knox's (2003) words, the 'imaginative solutions to the dilemmas and problems that life creates, a form of unconscious playful rehearsal of a range of possible attitudes and actions' (p. 219), then the elaboration of fantasies by the highly sensitive might be seen as part of their strategy of exploring the full range of possibilities before acting. However, the need for the defence of splitting off these fantasies as complexes may be especially high in sensitive children because emotional regulation may be more difficult for them, given that they would experience higher levels of stimulation than the non-sensitive child in equivalent stressful situations. Indeed, in a sense, these heightened emotional reactions may more often qualify a sensitive child's difficult experiences as traumatic in that these experiences are producing higher levels of arousal, and then the

resulting internal representations are dissociated so that they cannot be amended. (As observed by Brewin, Dalgleish, and Joseph 1996, memories created during very high levels of arousal are probably not verbally accessible, but only situationally accessible—stimulated by situations resembling in some way the original trauma.)

Although sensitive individuals are generally more reflective (Kagan et al. 1999), they evidence rapid emotional learning, involving the hippocampus and right hemisphere unmediated by the conscious verbal efforts of the left. This one-trial learning might be yet another aspect of their innate strategy of inhibiting potentially wrong responses (as opposed to the majority's strategy of acting and seeing the consequences). This possibility is further suggested by the research on introverts (overlapping with sensitiveness, as explained previously) indicating their greater learning without awareness (Deo & Singh 1973) and conditionality (Fredrikson & Georgiades 1992). Further, infants who evidence more reactivity at birth tend to have greater right hemisphere activation, an asymmetry which decreases with time (Kagan et al. 1987; Fox, Sobel et al. 1996). Most of these reactive infants do not develop into troubled children, but those who do continue to evidence this activation asymmetry (Fox, Schmidt et al. 1996), an interesting finding in light of Joseph's (1996) suggestion that the left brain is inactivated during trauma.

There are no long-term longitudinal studies of the effect of parenting behaviours on those evidencing very early activation asymmetry and general reactivity. However, there are some relevant short-term studies. Calkins and Fox (1994) found that reactive infants with secure attachments were less inhibited at two years. Also, children who were 'inhibited' at 2 and not 'shy' at 7 attributed their own changes to helpful parents (Fox, Sobel et al. 1996). Studying the interaction of parenting and temperament in conscience formation, Kochanska and Thompson (1998) found that at 2 and 3 years of age, sensitive children—those more inhibited in novel environments and more aware of flaws in a toy—were also more upset if the situation was contrived to make it seem to them that they had caused the flaw. At 4 years they were less likely to cheat, break rules, or be selfish when they had no fear of being caught and gave more prosocial responses in moral dilemmas. However, this difference remained at 5 years only if their mothers had used gentle discipline, de-emphasizing power, a variable which did not affect non-sensitive children. Mutual cooperation as a parenting style and attachment security had similar interaction effects with temperament. Finally, Mills and Rubin (1993) have conducted several correlational studies in an ongoing programme of research that validates a model involving the interaction between temperament and parental attributes as the cause of children's social withdrawal and problems of an internalizing nature.

Again finding an interaction, my unpublished research has revealed an interesting specific pattern regarding adult attachment styles (Cassidy & Shaver 1999): highly sensitive persons were no more likely to be insecure than secure, but if insecure, they were more often anxious-ambivalent (resistant, preoccupied).

The non-sensitive insecure persons were more often avoidant. Many researchers have found the same with children (Calkins & Fox 1994; Kochanska 1998). Reviewing the data, Asendorpf (2002) concludes that there is little evidence for infant temperament determining security versus insecurity in children (especially since parents' security before having the child is the strongest predictor), but distress proneness is associated with anxious-ambivalence or Type C attachment, with a correlation of close to .24.

The anxious-ambivalent type of insecurity seems to create more conscious psychological suffering, since it is constantly focused on the problematic relationship, while the avoidant style seems to restrict or inhibit the further processing of negative attachment experiences (Eagle 1995). I suspect the high prevalence of the anxious-ambivalent type of insecurity among the highly sensitive insecure individuals may be due to two factors discussed by Stern (1985/2000). First, sensitive children are more dependent on a caregiver for protection from overstimulation. Thus avoidance is a poor option for them in particular. Second, when a caregiver is intrusive, sensitive children experience 'intolerable overstimulation', which is particularly harmful during the first stages of core relatedness. Given both points, a sensitive child may be forced to maintain contact with a caregiver no matter how threatening, inconsistent, or overstimulating he or she is, in order not to be alone in an overstimulating world; and the intrusive parent must be placated in order to prevent still deeper intrusions into the child's autonomy. It may also be true that the sensitive person simply cannot maintain the repression of high levels of over arousal associated with separation distress, as the avoidant does, because this inner stimulation is too overwhelming or too thoroughly processed.

### **Sorting out the interaction in adults in a clinical context**

It can seem almost impossible to sense what is nature and what is nurture within one troubled individual. A place to begin might be the following image. We have all seen dogs, for example, which have been abused. We have also seen individual dogs, and certainly breeds of dogs, that are highly sensitive. Some of the behaviours are the same in the two cases (withdrawing, trembling), but some are quite different (abused dogs look away, appear unfriendly, while sensitive animals watch keenly, eager to come forward when reassured). Certainly the feeling during the slow, getting-acquainted process differs (never being seen as quite trustworthy versus being about to be made a friend for life). Finally, we have also seen or can imagine sensitive dogs that have also been abused. While we may not be able to sort out the causes of a specific moment of withdrawing, trembling behaviour, an understanding of the possible nature and nurture forces working within an individual has to help us intuitively as we try to establish a relationship.

In assessing the sensitivity of individuals who are deeply depressed, anxious, shy, or presenting with a character disorder, I tend to explore how they

behaved in childhood and how the adults around them described them. Of course many of these adults would be expected to give distorted reports about a child's temperament, and early caregiver interactions can also explain fearfulness, fussiness, or strong emotional reactions such as crying easily. Still, I do suspect sensitiveness if an individual was said to be 'difficult' as an infant (not all sensitive infants are difficult, but ill-prepared parents generally find them to be). An even more likely indicator is the individual recalling being easily overloaded by stimulation or bothered by intense stimuli such as loud noises, scratchy clothing, harsh lighting, or strange odours. I also inquire about sensitivity to pain, which is typical of the trait. Sometimes individuals simply 'know' they are highly sensitive, at least after reading my description of it (Aron 1996), and I accept this as a working hypothesis, but only as that. Finally, a sense of the trait separate from the effects of a troubled childhood, as described below, can be helpful.

Even if one has decided a person is sensitive, the clinician is faced with two other questions: how does this person's sensitivity interact with childhood trauma, and which (sensitivity or trauma) is the greater factor in this patient? (By childhood trauma I include here failures of attachment and reactions to separation as described by Bowlby 1969 and Fordham 1974, and early self-object failures as described by Kohut 1971, as well as disintegrative overstimulation such as physical or sexual abuse, physical illness or injury, parental loss or divorce.) Certainly, as Jung stated and the above research indicates, childhood events will have a more pervasive impact in sensitive persons. The result is often a difficult-to-treat character or self-disorder, especially as narcissistic vulnerability appears among the gifted (to use Kohut's language). For example, Hultberg (1989) describes several cases in his important paper on 'Success, retreat, panic: Overstimulation and the depressive defence' that involve persons who are described as gifted and sensitive, apparently from birth, but who also clearly lacked the developmental support that would have provided the ego structure necessary to tolerate the grandiose fantasies stimulated by a taste of actual or potential success. This reaction to talent would be typical of a sensitive person with an inadequate childhood. Sensitive persons frequently have unusual insights and abilities, but their over arousal when trying to display these causes them to fail or creates a fear of failure. Responsive, insightful parents can reduce these fears in many ways, but without such help, sensitive individuals will continue to fantasize about expressing their abilities without the opportunity to have a realistic experience of them.

In general, constitutionally sensitive persons whose childhood left them lacking in emotional regulation and ego strength, or who have undergone a recent trauma, will be even more vulnerable to anxiety, depression, or dissociation in a currently stressful or highly stimulating situation than those with similar lacks or traumas but without the temperament trait. In part this is due to their deeper processing, which readily associates one stressful experience with another.

Then they overstimulate themselves by reliving both experiences, imbuing them with more and more subjective meaning—for example, trying, consciously or unconsciously, to find an explanation for what has happened to them, and finding it most acceptable to blame themselves (a typical pattern for an internal working model, see Knox 2003).

Yet another reason for this greater vulnerability is the sensitive person's thinner boundary between the unconscious and consciousness, as evidenced by a more active imagination and more vivid dreams (Aron & Aron 1997). Hartmann (1991), uses the concept of thin boundaries as another way of describing this personality trait, using it to explain numerous differences, from skin qualities and housing choices to the boundaries between waking and sleeping and self and other.) This 'thin boundary' may also mean that as children they were more likely to experience archetypal material which they were unable to integrate without adult mediation. They are probably also, as said before, less able to use repression as a defence and therefore more anxiously preoccupied about attachments. Aware of their insecure attachment style, they can only resort to hiding it from others (Eagle 1995), typically leaving them feeling anxious and shy. For all of the above reasons, sensitive individuals are probably more likely to develop the type of defence that, often rather violently, attempts to frighten them entirely away from life and feelings—a defence sometimes described as arising from the Self (or, also, against the Self, Beebe 1993) as discussed by Fordham (1974), Beebe (1993), and Kalsched (1996), or in other terms, an archaic defence (Fonagy 1991; Knox 2003).

When is innate sensitivity probably not a factor in a patient? It is important to appreciate that the sensitiveness created by self-disorders or a weak ego is not the same as the constitutional sensitiveness which is the focus of this paper. One way to make the distinction is to consider whether one is seeing (a) a general sensitivity to stimuli and a preference to process input thoroughly, or (b) sensitivity to a specific situation, such as the sensitivity to success described by Hultberg. Other examples of a specific sensitivity would be sensitivity to criticism or failure stimulated by situations that might lead to unbearable shame, or sensitivity to signs of abandonment stimulated by separation stress. These represent a vigilance about specific stimuli that would threaten to overwhelm the ego by activating a complex or split-off defence against certain unbearable affects. A complex always creates a sensitivity to those situations that constellate it. Constitutional sensitivity, with its more thorough processing of all experience, is both more consistent and less exaggerated, except where it overlaps with a complex.

There is also a type of sensitivity that is due to the vigilant overarousal associated with post-traumatic stress, and this can seem to be a sensitivity to all stimuli. However, PTSD almost always involves a greater sensitivity to some types of stimuli and a suppressed or constricted response to others. Of course, sensitive persons are probably more prone to PTSD and develop its symptoms in situations others would not (although, again, such an 'overreaction' might

also be due to certain internal working models, such as that others cannot be trusted to help).

Obviously this is only a brief discussion of how one might make such distinctions (e.g., between sensitivity and personality disorders), and there is much to consider in how a patient's sensitiveness might affect treatment, including transference phenomena, dreams, and emotional containment. But in the interest of space, this article leaves these topics for the future. It does seem important, however, to have a sense of what might be the effects of the trait itself, separate from the effects of a troubled childhood and the trait's interaction with such a childhood—that is, what 'normal' high sensitivity looks like.

### **Recognizing uncomplicated high sensitivity**

It is my impression, from my interviews and observations and discussions in many contexts, that relatively untraumatized sensitive adults tend to adapt and blend with the majority, rarely showing evidence in public of their sensitivity, or even having the words to describe it. With continued questioning, they usually report feeling they are just different and have tried to cope with or hide their unusualness. They will usually list some typical difficulties, which are discussed below. However, knowing the benefits of the trait can also help in identifying it. For example, most sensitive persons are highly conscientious in all matters, being aware of the consequences of a lapse in their behaviour. They are often highly creative, intuitive, empathic, and able to grasp non-verbal cues (for example, the intentions of animals, the condition of bodies or plants), appreciative of beauty, and spiritual or philosophical rather than material and hedonistic in their orientation to life.

The above list is not meant to idealize the highly sensitive. Indeed, the trait may be the clearest personality marker for children who act out suddenly in aggressive ways (Watson & Fischer 2002). Certainly assets such as creativity and intuition can always be employed for the wrong purposes. If these positive traits are present in an individual, they are simply clues pointing to the underlying trait. The positive aspects also help the clinician and patient maintain perspective while dealing with the difficulties related to the trait. After all, the difficulties are often the inevitable result of what also creates the positive aspects—for example, the same awareness of subtleties that can cause the highly sensitive to be 'too aware' of others' needs also can lead to empathy, compassion, and a passion for social justice.

The normal difficulties associated with the trait are most often the result of the tendency to become more overaroused than others by the same level of stimulation. Overarousal is aversive for anyone—it is uncomfortable and interferes with all but the most overlearned skills. Thus, for example, sensitive persons generally perform worse when observed or under the pressure of a time limit and have difficulty speaking in groups or conversing with strangers,

especially in highly stimulating environments such as school classrooms and parties. Thus it is quite normal for the highly sensitive to develop strategies to avoid overarousal, whatever the wisdom of a specific strategy. This does not mean that there is no point in looking for the unconscious meaning of the particular experiences being avoided, or of any other sensitivity-related behaviours, but this type of work will progress better if the contribution of innate temperament is also appreciated.

Although it is normal for sensitive persons to avoid overarousal, many do the opposite by trying to live as those around them do, and as a result are chronically over aroused. These otherwise normal patients often present with low-level anxiety and depression, stress-related illnesses, or environmental sensitivities. The illnesses can easily seem psychosomatic since others living the same lifestyle would not be ill. Indeed, they often *are* psychosomatic in the sense that an illness may be the only reason that they or others can accept for their reducing their level of activities. Illness is especially common when they are facing a major life transition, such as living away from home for the first time, that will make significant new demands (Jung's point that neurosis arises for them when there is a failure to adapt to a life challenge). These patients will be particularly helped by individuating to the point of having the courage to choose a life that makes best use of their temperament.

Besides problems related to overarousal, a second source of normal difficulties is the awareness of subtleties and deep processing of information. These lead, for example, to slow decision-making; reporting medical problems so early or in such detail that they are not believed (or in reaction, waiting too long to report them); a thorough processing of media stories of health risks, disasters, and crises (or else the studious avoidance of them); and such a keen awareness of the consequences of an injustice or state of deprivation that they will feel deep guilt about not suffering the same fate. It is also inevitable that these individuals are highly (usually seen as 'overly') sensitive to criticism and correction, since deeply processing all feedback is their way of reducing failures. And not liking harsh comments, they may speak as they wish to be spoken to, which is often too gentle or indirect to be taken seriously by the less sensitive.

In intimate relationships with a non-sensitive person there are bound to be conflicts and perhaps negative self-other comparisons. Yet as they become closer to another person, they also process more deeply the other's faults. As a result, they may fear greater intimacy or commitment because of the imagined long-term consequences of living with these flaws-grown-large, especially if they have had little previous experience in intimate relationships. This same focus on faults—and certain minor annoying habits will be especially irritating to sensitive persons—can cause sensitive individuals to question their love for the other or even their ability to love generally. Indeed, they quickly feel guilt and can readily move from there to shame, a general sense of the core self being bad.

Shame-proneness among sensitive persons is common (and in that sense normal) also because of the cultural complex already described. As Hultberg (1988) has pointed out, guilt is about breaking the laws of society and being punished according to those laws, but shame is about being rejected by the group so that one is beyond the law, beyond the group, abandoned—or in this case, unacceptably different. Sidoli (1988) has observed that the one in the group on whom the shadow is projected often feels shame. In this case the shadow of the ‘ideal’, ‘normal’, boldly non-sensitive person is projected onto the sensitive, so that in this social mirror others see their own vulnerability, fear, social failure, and general neuroticism. Of course, many sensitive persons attempt to prove their normalcy through strenuous efforts to achieve, exhibiting some of the core sense of worthlessness and overcompensating style usually associated with narcissism.

Overwork can have other causes, however. As already mentioned, some sensitive persons are born with another, seemingly opposite but merely independent trait, usually called high sensation seeking (Zuckerman 1993). Those with both traits do not present as either the usual sensitive person or the typical sensation seeker—they are often outgoing and involved in many activities, but they avoid risks and need frequent breaks. One described herself as living with one foot on the brake, one foot on the accelerator. Frequently they are misconstrued as self-destructive because they repeatedly plan situations that overwhelm them.

Finally, all sensitive persons tend to be more aware of the inevitability of loss, death, evil, and their own shadow. They are less able to deny these, so that they may worry constantly or dissociate the emotions and somatize their feelings. But the only solution for them is to come to live in some conscious way with these realities. This may be the most important reason for their belonging specifically in Jungian treatment.

## Conclusion

Concepts such as puer, narcissist, introvert, shy, depressed, and sensitive are useful only when they lead us deeper in. Their exact definition and the limits of the set are less important than our need to explore and elaborate them in a conscious way, so that when we use the concepts they open up new intuitive vistas. Sensitiveness as a concept has been used almost as frequently as these others, but in a less conscious fashion. It has received far less of our thoughtful elaboration of its implications. But by giving it the same substantial attention that has made some of Jung’s other ideas so important to the larger culture, we might provide an understanding of an individual variation that is being described in other, less accurate ways.

A great many human behaviours are being found to be determined by something ‘genetic’—for example, divorce has been found to be 42% heritable (McGue & Lykken 1996). But then so is wearing skirts. Thus behaviour geneticists look



to psychologists to indicate which traits might be the underlying cause of a heritability figure. The psychologists have developed measures of what concerns them most—easily observed, problematic behavioural styles such as shyness, inhibitedness, impulsivity, and negative affectivity. And of course these are indeed found to be heritable. But it seems that the basic traits behind these, separate from the influence of environment, need to be teased out by those such as Jung, and depth psychologists generally, who both understand that constitution is important and who have more fully explored the subjective experiences and personal histories behind a behaviour. This article has attempted to further this difficult project by looking back to how Jung approached the problem, and forward to current research and culture as well as future ways we might be present with those who have inherited whatever it is that we finally decide to call it. The importance of people who think deeply before acting, for whatever reason, has never been so great, and their healing and individuation have been the special work of analytical psychology since its inception.

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#### TRANSLATIONS OF ABSTRACT

Jung suggère qu'une sensibilité innée prédispose certains individus à être particulièrement affectés par des vécus d'enfance négatifs, de telle sorte que plus tard, lorsque ceux-ci se retrouvent face à une pression devant le travail d'adaptation du fait d'un nouveau challenge qui se présente à eux, leur énergie se retire dans des fantasmes infantiles reliés à ces vécus et ils organisent une névrose. L'article recense des recherches récentes faites par l'auteur et par d'autres, recherches qui vont dans le sens de la théorie de Jung parlant de la sensibilité comme une surface de réflexion distincte, minutieuse, consciente et inconsciente des vécus. En fait cette tendance supposée innée se trouve chez environ vingt pour cent des humains et dans un sens on trouvera dans la plupart des espèces, avec approximativement le même pourcentage, les indications d'une stratégie d'un traitement approfondi des données avant l'engagement dans une action chez certains, alors que par contre la majorité se reposera plutôt sur une rapidité et une efficacité d'activité motrice. Etant donné ce traitement approfondi de données, les individus sensibles détecteront rapidement certaines subtilités, y compris tout ce qui peut être perturbant ou dangereux. Ce faisant, et comme Jung l'a pointé, avec le même degré de blessure dans l'enfance que des individus non sensibles, les personnes sensibles auront plus tendance à la dépression, l'anxiété et à la timidité. Par contre lorsqu'ils n'ont pas eu trop à faire à des vécus traumatiques ils n'ont pas plus que les non-sensibles tendance aux développements difficiles décrits cidessus—ou même moins, ayant généralement la capacité d'être conscient des marques de support ou des marques négatives venant de ceux qui s'occupent d'eux. Etant donné ces effets interactifs, une des tâches du traitement est de différencier les effets provenant des difficultés rencontrées dans l'enfance de ce qui ne nécessite pas un traitement, à savoir les effets caractéristiques de ce trait lui-même chez un adulte dont l'histoire ne comporte pas de défaillances importantes ayant eu des conséquences marquées sur son développement.

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Jung vertrat die Ansicht, dass Menschen mit angeborener Empfindsamkeit, besonders dazu neigen von negativen Kindheitserfahrungen betroffen zu werden, so dass wenn sie spaeter dem Druck einer Herausforderung begegnen, sie sich in kindliche Fantasien, die auf eben jenen Erfahrungen basieren, zurueckziehen und neurotisch werden. Juengste Forschungsergebnisse des Autors und anderer werden untersucht, um Jungs Theorie zu unterstuetzen, dass Empfindsamkeit eine genaue und tief greifende Reflektion frueher Erfahrungen ist. In der Tat kann diese Tendenz bei wahrscheinlich zwanzig Prozent aller Menschen, und in gewissem Sinne der meisten Lebewesen, beobachtet werden. Dieser Prozentsatz entwickelt Strategien, die jede Information erst einmal gruendlich verarbeiten, bevor gehandelt wird, wogegen die Mehrheit sich auf effiziente, schnelle motorische Aktivitaet verlaesst. Angesichts dieser gruendlichen Verarbeitung, sind empfindsame Menschen eher in der Lage, Subtilitaeten zu erspuehen – einschliesslich all dessen was schmerzlich oder bedrohlich ist. Deshalb, laut Jungs Beobachtungen, neigen empfindsame Menschen, auch wenn sie dieselben Stresserfahrungen in der Kindheit haben wie andere, eher zu Depressionen, Angstzustaenden und Schuechternheit. Ohne allzu grosse Stressfaktoren, zeigen empfindsame Menschen genauso wenig Anzeichen solcher Schwierigkeiten wie weniger empfindsame—womoeglich sogar weniger, da sie ungewoehnlich empfaenglich sind fuer fuersorgliche als auch negative Reaktionen ihrer Bezugspersonen. Angesichts dieser Wechselwirkung, ist es eine der Aufgaben der Behandlung zu unterscheiden zwischen dem was auf die Auswirkungen von Kindheitsschwierigkeiten zurueckzufuehren ist, und Charakterzuegen, die typisch sind fuer einen Erwachsenen ohne gestoerten Entwicklungsablauf.

Jung ipotizzò che una innata sensibilità predispone alcuni individui ad essere particolarmente influenzati—da esperienze infantili negative, così che più tardi, se pressati dalla necessità di adattarsi a qualche cambiamento, si ritirano nelle loro fantasie infantili basate su quelle esperienze e divengono nevrotici. Viene riesaminata una recente ricerca dell'autore e di altri che supporta la teoria di Jung della sensibilità come di una modalità di riflettere sulle esperienze in modo distinto tra conscio ed inconscio. Certamente tale tendenza probabilmente innata la si trova in circa il venti per cento degli umani e, in un certo senso, in molte specie, come se tale percentuale voglia evidenziare una strategia che sottopone dettagliatamente a processo le informazioni prima di passare all'azione, mentre la maggior parte può contare su un'attività motoria efficiente e rapida. Dato questo procedimento, le persone sensitive percepiscono rapidamente ciò che sta sotto, incluso qualunque cosa possa essere angoscioso o minaccioso. Quindi, come ha osservato Jung, dato lo stesso grado di stress nell'infanzia come se tutti gli individui fossero non-sensibili, le persone sensibili svilupperanno maggiormente depressione, ansia e timidezza. Se non sono sotto stress, non evidenziano difficoltà maggiori dei non-sensibili, o persino meno, essendo inconsuetamente consci degli stimoli sia positivi che negativi di chi si prende cura di loro. Dato questo tipo di interazione, uno degli scopi del trattamento è di distinguere gli effetti di tali difficoltà dell'infanzia da ciò che non necessita trattamento, che sono i tipici effetti del carattere stesso in un adulto senza una storia evolutiva problematica.

Jung sugiere que la sensibilidad innata predispone a algunos individuos a ser particularmente afectados por experiencias infantiles negativas, de tal forma que mas adelante,

cuando se encuentran bajo presión para adaptarse a algunos retos, ellos regresan a fantasías infantiles con base a esas experiencias y se neurotizan. Se revisan las investigaciones recientes del autor y de otros para poder sustentar las teorías junguianas como diferentes a la acabada reflexión consciente o inconsciente en relación a las experiencias. De hecho, es probable que esta tendencia innata se encuentre en el veinte por ciento de los humanos, y, en cierto sentido, en muchas especies, en este orden este porcentaje debe evidenciar una estrategia para procesar muy minuciosamente la información antes de tomar una acción, mientras que la mayoría depende de una eficiente y rápida actividad motora. Dado este detallado procesamiento, los individuos sensibles prontamente detectan sutilezas—incluyendo cualesquiera que sean estresantes o amenazantes. Así, tal como Jung observara, dado el mismo grado de estrés en la infancia que en los individuos no sensibles, las personas sensibles desarrollarán mas depresión, ansiedad y timidez. Sin este estrés, estos no evidenciarán mas dificultad que los individuos no sensibles—y aún menos, siendo inusualmente conscientes de las señales de apoyo y negativas de quienes los cuidan. Debido a esta interacción, una meta del tratamiento es la distinguir los efectos de las dificultades de la niñez de aquellas que no requieren terapia, que son las típicas consecuencias de los hechos del la adultez que no se basan en una historia de desarrollo problemático.

## References

- Aron, E. (1996). *The Highly Sensitive Person*. New York: Birch Lane Press.
- (2000). 'High sensitivity as one source of fearfulness and shyness: Preliminary research and clinical implications'. In *Extreme Fear, Shyness, and Social Phobia: Origins, Biological Mechanisms, and Clinical Outcomes*, eds. L. Schmidt & J. Schulkin. New York: Oxford University Press.
- (in press). 'The impact of adult temperament on closeness and intimacy'. In *Handbook of Closeness and Intimacy*, eds. D. Mashek & A. Aron. Mahwah, NJ: Lawrence Erlbaum.
- Aron, E. & Aron, A. (1997). 'Sensory-processing sensitivity and its relation to introversion and emotionality'. *Journal of Personality and Social Psychology*, 73, 345–68.
- (2004). *Adult shyness: The interaction of temperament sensitivity and a negative childhood environment*. Manuscript under review.
- Asendorpf, J. B. (2002). 'Personality effect on personal relationships over the life span'. In *Stability and Change in Relationships*, eds. A. L. Vangelisti, H. T. Reis & M. A. Fitzpatrick. Cambridge: Cambridge University Press.
- Beebe, J. (1993). 'Comment'. *Journal of Analytical Psychology*, 38, 1, 101–3.
- Berenbaum, H. & Williams, M. (1994). 'Extraversion, hemispatial bias, and eye blink rates'. *Personality and Individual Differences*, 17, 839–52.
- Berry, P. (1992, October). Second lecture in *Myth, Literature, and Religion, II*. (Cassette recording available from Pacifica Graduate Institute, 249 Lambert Rd., Carpinteria, CA 93013.)
- Boyce, W. T., Chesney, M. Alkon, A., Tschann, J. M., Adams, S., Chesterman, B., Cohen, F., Kaiser, P., Folkman, S. & Wara, D. (1995). 'Psychobiologic reactivity to stress and childhood respiratory illnesses: results of two prospective studies'. *Psychosomatic Medicine*, 57, 411–22.
- Bowlby, J. (1969). *Attachment and Loss. Vol. I Attachment*. New York: Basic Books.
- Brebner, J. M. T. (1980). 'Reaction time in personality theory'. In *Reaction Times*, ed. A. T. Welford. London: Academic Press.

- Brewin, C. R., Dalgleish, T. & Joseph, S. (1996). 'A dual representation theory of post-traumatic stress disorder'. *Psychological Review*, 103, 670-86.
- Calkins, S. D. & Fox, N. A. (1994). 'Individual differences in the biological aspects of temperament'. In *Temperament: Individual Differences at the Interface of Biology and Behaviour*, eds. J. E. Bates & T. D. Wachs. Washington, DC: American Psychological Association.
- Cassidy, J. & Shaver, P. R. (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York: Guilford.
- Chen, X., Rubin, R. & Sun, Y. (1992). 'Social reputation and peer relationships in Chinese and Canadian children: a cross-cultural study'. *Child Development*, 63, 1336-43.
- Chrousos, G. & Gold, P. (1999). 'The inhibited child "syndrome": Thoughts on its potential pathogenesis and sequelae'. In *Extreme Fear, Shyness, and Social Phobia: Origins, Biological Mechanisms, and Clinical Outcomes*, eds. L. Schmidt & J. Schulkin. New York: Oxford University Press.
- Cloninger, C. R. (1987). 'A systematic method for clinical description and classification of personality variants: a proposal'. *Archives of general psychiatry*, 44, 573-588.
- Daniels, D. & Plomin, R. (1985). 'Origins of individual differences in infant shyness'. *Developmental Psychology*, 21, 118-21.
- Davidson, R. J. (1992). 'Emotion and affective style: hemispheric substrates'. *Psychological Science*, 3, 39-43.
- Deo, P. & Singh, A. (1973). 'Some personality correlates of learning without awareness'. *Behaviorometric*, 3, 11-21.
- DiLalla, L., Kagan, J. & Resnick, J. (1994). 'Genetic etiology of behavioral inhibition among two-year-old children'. *Infant Behavior and Development*, 17, 401-8.
- Dumezil, G. (1939). *L'Idéologie tripartite des indo-européens*. Brussels: Collection Latomus, Vol. 31.
- Eagle, M. (1995). 'The developmental perspectives of attachment and psychoanalytic theory'. In *Attachment Theory. Social, Developmental and Clinical Perspectives*, eds. P. Goldberg, R. Muir & J. Kerr. Hillsdale, NJ & London: The Analytic Press.
- Eliot, A. J. & Thrash, T. M. (2002). 'Approach-avoidance motivation in personality: approach and avoidance temperaments and goals'. *Journal of Personality and Social Psychology*, 82, 804-18.
- Fischer, H., Wik, G. & Fredrikson, M. (1997). 'Extraversion, neuroticism and brain function: a pet study of personality'. *Personality and Individual Differences*, 23, 345-52.
- Fonagy, P. (1991). 'Thinking about thinking: some clinical and theoretical considerations in the treatment of a borderline patient'. *International Journal of Psychoanalysis*, 72, 4, 639-56.
- (2001). *Attachment Theory and Psychoanalysis*. New York: Other Press.
- Fordham, M. (1974). 'Defences of the self'. *Journal of Analytical Psychology*, 19, 192-99.
- Fox, N. A., Schmidt, L. A., Calkins, S. D., Rubi, K. H. & Coplan, R. J. (1996). 'The role of frontal activation in the regulation and dysregulation of social behaviour during the preschool years'. *Development and Psychopathology*, 8, 89-102.
- Fox, N. A., Sobel, A., Calkins, S. & Cole, P. (1996). 'Inhibited children talk about themselves: self-reflection on personality development and change in 7-year-olds'. In *Emotional Development in Atypical Children*, eds. M. Lewis & M. W. Sullivan. Mahwah, NJ: Lawrence Erlbaum.
- Fredrikson, M. & Georgiades, A. (1992). 'Personality dimensions and classical conditioning of autonomic nervous system reactions'. *Personality and Individual Differences*, 13, 1013-20.
- Freud, S. (1897/1954). *The Origins of Psycho-Analysis. Letters to Wilhelm Fleiss, Drafts and Notes: 1887-1902*. eds. M. Bonaparte, A. Freud & E. Kris, trans. E. Mosbacher & J. Strachey (1954). London: Hogarth Press.

- (1905/1953). *Three Essays on the Theory of Sexuality*. SE VII.
- Gannon, L., Banks, J. & Shelton, D. (1989). 'The mediating effects of psychophysiological reactivity and recovery on the relationship between environmental stress and illness'. *Journal of Psychosomatic Research*, 33, 165–75.
- Geen, R. G. (1986). 'Physiological, affective, and behavioural implications of extraversion-introversion. In *Shyness: Perspectives on Research and Treatment*, eds. W. H. Jones, J. M. Cheek & S. R. Briggs. New York: Plenum.
- Gortmaker, S. L., Kagan, J., Caspi, A. & Silva, P. A. (1997). 'Daylength during pregnancy and shyness in children: Results from northern and southern hemispheres'. *Developmental Psychobiology*, 31, 107–14.
- Gray, J. (1981). 'The neuropsychology of temperament'. In *Explorations in Temperament: International Perspectives on Theory and Measurement*, eds. J. Strelau & A. Angleitner. New York: Plenum.
- (1985). 'Issues in the neuropsychology of anxiety'. In *Anxiety and Disorder*, eds. A. H. Ruma & J. D. Maser. Hillsdale, NJ: Erlbaum.
- Gunnar, M. R. (1994). 'Psychoendocrine studies of temperament and stress in early childhood: expanding current models'. In *Temperament: Individual Differences at the Interface of Biology and Behavior*, eds. J. E. Bates & T. D. Wachs. Washington, DC: American Psychological Association.
- Hartmann, E. (1991). *Boundaries in the Mind: A New Psychology of Personality*. New York: Basic Books.
- Henderson, J. (1990). 'The cultural unconscious'. *Shadow and Self: Selected Papers in Analytic Psychology*. Wilmette, IL: Chiron, 103–13.
- Hinde, R. (1989). 'Temperament as an intervening variable'. In *Temperament in Childhood*, eds. G. A. Kohnstamm, J. E. Bates & M. K. Rothbart. New York: John Wiley.
- Howarth, E. & Eysenck, H. (1968). 'Extraversion, arousal, and paired associate recall'. *Journal of Experimental Research in Personality*, 3, 114–16.
- Hultberg, P. (1988). 'Shame – a hidden emotion'. *Journal of Analytical Psychology*, 33, 109–26.
- (1989). 'Success, retreat, panic: overstimulation and the depressive defense'. In *Psychopathology: Contemporary Jungian Perspectives*, ed. A. Samuels. London: Karnac.
- Humphreys, M. S. & Revelle, W. (1984). 'Personality, motivation, and performance: a theory of the relationship between individual differences and information processing'. *Psychological Review*, 91, 153–253.
- Joseph, R. (1996). *Neuropsychiatry, Neuropsychology, and Clinical Neuroscience*. New York: Plenum.
- Jung, C. (1913). 'The theory of psychoanalysis'. CW 4.
- (1914). *Freud and Psychoanalysis*. CW 4.
- (1916). 'Psychoanalysis and neurosis'. CW 4.
- (1921). *Psychological Types*. CW 6.
- (1955). *Modern Man in Search of a Soul*. New York: Harcourt Brace.
- Kagan, J. (1995). *Galen's Prophecy*. New York: Basic Books.
- Kagan, J., Reznick, J. S. & Snidman, N. (1987). 'The physiology and psychology of behavioral inhibition in children'. *Child Development*, 58, 1459–73.
- Kagan, J., Snidman, N., Zentner, M. & Peterson, E. (1999). 'Infant temperament and anxious symptoms in school age children'. *Development and Psychopathology*, 11, 209–24.
- Kalsched, D. (1996). *The Inner World of Trauma*. New York: Routledge.
- Kender, K., Neale, M., Kessler, R., Heath, A. & Eaves, L. (1992). 'The genetic epidemiology of phobias in women: the interrelations of agoraphobia, social phobia, situational phobia, and simple phobia'. *Archives of General Psychiatry*, 49, 273–81.

- Kimbles, S. (2000). 'Cultural complexes and the myth of invisibility'. In *The Vision Thing*, ed. T. Singer. New York: Routledge.
- Knox, J. (2003). 'Trauma and defences: their roots in relationship. An overview'. *Journal of Analytical Psychology*, 48, 207-33.
- Kochanska, G. (1998). 'Mother-child relationship, child fearfulness, and emerging attachment: a short-term longitudinal study'. *Developmental Psychology*, 34, 480-90.
- Kochanska, G. & Thompson, R. A. (1998). 'The emergence and development of conscience in toddlerhood and early childhood'. In *Handbook of Parenting and the Transmission of Values*, eds. J. E. Grusec & L. Kuczynski. New York: Wiley.
- Koelega, H. S. (1992). 'Extraversion and vigilance performance: 30 years of inconsistencies'. *Psychological Bulletin*, 112, 239-58.
- Kohut, H. (1971). *The Analysis of the Self*. New York: International Universities Press.
- Legg, S. (1971). *The Heartland*. New York: Farrar, Straus & Giroux.
- McEwen, B. S. (1999). 'Lifelong effects of hormones on brain development: Relationship to health and disease'. In *Extreme Fear, Shyness, and Social Phobia: Origins, Biological Mechanisms, and Clinical Outcomes*, eds. L. Schmidt & J. Schulkin. New York: Oxford University Press.
- McGue, M. & Lykken, D. (1996). 'Personality and divorce: a genetic analysis', *Journal of Personality and Social Psychology*, 71, 288-99.
- Mead, M. (1935/1963). *Sex and Temperament in Three Primitive Societies*. New York: Morrow.
- Mehrabian, A. (1976). *Manual for the Questionnaire Measure of Stimulus Screening and Arousalability*. UCLA: Author.
- (1991). 'Outline of a general emotion-based theory of temperament'. In *Explorations in Temperament: International Perspectives on Theory and Measurement*, eds. J. Strelau & A. Angleitner. New York: Plenum.
- Mills, R. S. L. & Rubin, H. H. (1993). 'Socialization factors in the development of social withdrawal'. In *Social Withdrawal, Inhibition, and Shyness*, eds. K. H. Rubin & J. B. Asendorpf. Hillsdale, NJ: Erlbaum.
- Nagane, M. (1990). 'Development of psychological and physiological sensitivity indicates reaction to stress based on state anxiety and heart rate'. *Perceptual and Motor Skills*, 70, 611-4.
- Ogden, T. (1986). *The Matrix of the Mind*. Northvale, NJ: Jason Aronson.
- Patterson, C. M. & Newman, J. P. (1993). 'Reflectivity and learning from aversive events: toward a psychological mechanism for the syndromes of disinhibition'. *Psychological Review*, 100, 716-36.
- Paulhus, D. L. & Morgan, K. L. (1997). 'Perceptions of intelligence in leaderless groups: the dynamic effects of shyness and acquaintance'. *Journal of Personality and Social Psychology*, 72, 581-91.
- Perera, S. (1986). *The Scapegoat Complex: Toward a Mythology of Shadow and Guilt*. Toronto: Inner City Books.
- Piontelli, A., Bocconi, L., Boschetto, C., Kustermann, A. & Nicolini, U. (1999). 'Differences and similarities in the intra-uterine behaviour of monozygotic and dizygotic twins'. *Twin Research*, 2, 264.
- Ratey, J. & Johnson, C. (1997). *Shadow Syndromes*. New York: Pantheon.
- Renger, J., Yao, W.-D., Sokolowski, M. & Wu, C.-F. (1999). 'Neuronal polymorphism among natural alleles of a cGMP-dependent kinase gene, *foraging*, in *Drosophila*'. *Journal of Neuroscience*, 19, RC28, 1-8.
- Rothbart, M. K. (1989). 'Biological processes in temperament'. In *Temperament in Childhood*, eds. G. A. Kohnstamm, J. E. Bates & M. K. Rothbart. New York: John Wiley.

- Rothbart, M. K., Derryberry, D. & Posner, M. I. (1994). 'A psychobiological approach to the development of temperament'. In *Temperament: Individual Differences at the Interface of Biology and Behavior*, eds. J. E. Bates & T. D. Wachs. Washington, DC: American Psychological Association.
- Sanday, P. (1991). *Female Power and Male Dominance: On the Origins of Sexual Inequality*. New York: Cambridge University Press.
- Satow, A. (1987). 'Four properties common among perceptions confirmed by a large sample of subjects: an ecological approach to mechanisms of individual differences in perception. II'. *Perceptual and Motor Skills*, 64, 507–20.
- Schore, A. (1994). *Affect Regulation and the Origin of the Self*. Mahwah, NJ: Lawrence Erlbaum.
- Sidoli, M. (1988). 'Shame and the shadow'. *Journal of Analytical Psychology*, 33, 127–42.
- Siegel, D. (1999). *The Developing Mind*. New York: The Guilford Press.
- Siegelman, E. (1969). 'Reflective and impulsive observing behavior'. *Child Development*, 40, 1213–22.
- Stelmack, R. M. (1990). 'Biological bases of extraversion: psychophysiological evidence'. *Journal of Personality*, 58, 293–311.
- (1997). 'Toward a paradigm in personality: comment on Eysenck's (1997) view'. *Journal of Personality and Social Psychology*, 73, 1238–41.
- Stelmack, R. M. & Geen, R. G. (1992). 'The psychophysiology of extraversion'. In *Handbook of Individual Differences: Biological Perspectives*, eds. A. Gale & M. W. Eysenck. Chichester, England: Wiley.
- Stern, D. (1985/2000). *The Interpersonal World of the Infant*. New York: Basic Books.
- Suomi, S. J. (1991). 'Uptight and laid-back monkeys: Individual differences in the response to social challenges'. In *Plasticity of Development*, eds. S. E. Brauth, W. S. Hall & R. J. Dooling. Cambridge, MA: MIT Press.
- Super, C. & Harkness, S. (2000). *Cortisol and Culture: Preliminary Findings on Environmental Mediation of Reactivity During Infancy*. Paper presented at the Occasional Temperament Conference, Westbrook, CT.
- Viken, R., Bose, R., Kaprio, J. & Koskenvuo, M. (1994). 'A developmental genetic analysis of adult personality: Extraversion and neuroticism from 18 to 59 years of age'. *Journal of Personality and Social Psychology*, 66, 722–30.
- Watson, M. & Fischer, K. (2002). *Pathways to Aggression through Inhibited Temperament and Parental Violence* (executive summary). MA: Harvard Graduate School of Education.
- Wilson, D. S., Coleman, K., Clark, A. B. & Biederman, L. (1993). 'Shy-bold continuum in pumpkinseed sunfish (*Lepomis gibbosus*): an ecological study of a psychological trait'. *Journal of Comparative Psychology*, 107, 250–60.
- Zuckerman, M. (1993). 'P-impulsive sensation seeking and its behavioral, psychophysiological and biochemical correlates'. *Neuropsychobiology*, 28, 30–6.

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