Highly Sensitive Person Scale (HSPS)

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Abstract

This paper investigates the concept of sensory processing sensitivity (SPS), a trait characterized by heightened responsiveness to environmental and internal stimuli, through the lens of Highly Sensitive Persons (HSPs). Elaine Aron and Arthur Aron's development of the Highly Sensitive Person Scale (HSP Scale) through seven investigative studies is central to this paper. These studies aimed to define the characteristics of SPS, differentiate it from related traits such as social introversion and emotionality, and explore its relationship with early childhood experiences. Findings from these studies suggest that SPS forms a distinct, unidimensional construct that, while related to, is not identical with social introversion and emotionality. Additionally, a dichotomy within HSPs based on childhood experiences (unhappy versus normal or happy) emerged, influencing levels of both introversion and intensity of emotion.

The HSP Scale's reliability and validity are supported by its comprehensive development process, which includes qualitative and quantitative analyses. Despite its strengths, limitations do exist, including the lack of genetic evidence for SPS and potential biases in self-report measures. Cultural and social contexts are also crucial in interpreting SPS, highlighting the need for further research to understand its complexities fully.

This paper underscores the importance of sensitivity in understanding human behavior and individual differences, and advocates for a nuanced view of SPS that recognizes its impact on individuals' lives. By examining the trait of high sensitivity through a multifaceted lens, this study contributes to the broader discourse on personality, brain function, and the dynamic interplay between nature and nurture.

Highly Sensitive Person Scale (HSPS)

As humans have evolved throughout the time continuum, they have done so by employing distinct types of survival strategies that have proven successful. How everyone sees and processes different information has been studied and categorized into individual characteristic traits labeled "sensory processing sensitivity." Initial studies began by looking at the difference between introverts and extroverts. Hans Eyesnck was the first to begin research on the subject, which was later enhanced by the work of Jeffery Gray. Both Eysenck and Gray's theories strongly support the fact that processes within the brain need to be explored to understand individual differences in responses as they are tied to brain function (Matthews & Gilliland, 1999). Gray further defined the sub systems of the brain into three distinct categories, and include the Behavioral Approach System (BAS), the Fight-Flight-Freeze System (FFFS), and the Behavioral Inhibition System (BIS) (Mitchell et al., 2007). Sensory processing sensitivity considers the BIS, which is primarily responsible and expressive toward sensitivity to punishment, nonrewarding activities, and first-time experiences where there is the presence of the unknown. Gray also suggested that individuals may inherit some fears or punishments, including socialization which may lead to a flight, flight, or freeze response (Aron & Aron, 1997). Others have studied shyness, as it pertains to low sociability, and other fearful situations, amongst others (Kagan (1994), Gunnar (1994), Patterson and Newman (1993), Cheek (1989) , which all have led to the study presented in this paper which outlines Highly Sensitive Persons and the scale, developed by Elaine Aron and her husband, Arhtur Aron in 1997.

In the study carried out by Aron and Aron in 1997, they hypothesized that highly sensitive persons, or those with a highly functioning BIS, are fundamentally more reflective than others. While some may feel this manifests as being more fearful of punishment, it is recognized by the study that individuals simply reflect on new situations before acting, rather than acting impulsively. Also, it is hypothesized that HSP's have a much larger sensitivity to subtleties, which should lead to an understanding that reflectivity as the cause and the result of "(a) a preference for input over output and (b) a talent for retrospective and prospective reflection about consequences. In this light, one sees the parts of the BIS quite differently (Aron & Aron, 1997)."

Psychometric Findings

To produce the HSP Scale, Aron and Aron conducted a series of seven different investigational studies that investigated the defining characteristics of sensory-processing sensitivity that also investigated the trait's association with social introversion and emotionality. The study was also able to look specifically at "core constructs' dimensionality, subgroupings, and potential relation to childhood experience (Aron & Aron, 1997, p. 350)." The study's last goal was to develop a way to psychometrically report measures that could be used in the future. The first study was a qualitative study of individuals that had self-selected as being "highly sensitive." This qualitative study was used to identify potential patterns amongst the group which may be carried over into the larger population. Initial findings from the qualitative study found over 70% of those who participated were able to identify with the feeling of being "different", the need to take frequent breaks when stressed or busy, the need to reduce the unknown (surprises or unwanted stimulation), deep spirituality of a feeling of their inner self, and fear of being due to failure or through competition, all of which were used to design a total of seven studies from their results (Aron & Aron, 1997).

Over the course of the study, there were six findings which consistently presented themselves: (a) The different themes that that were expected to arise from our conceptualization of sensitivity were in fact consistently presented and formed a "unidimensional" construct; (b) sensitivity was found to be correlated with but not identical with social introversion; (c) sensitivity was also correlated with but not identical with emotionality; (d) sensitivity was not only the combination of social introversion and emotionality, there were other factors involved; (e) there appear to have been two distinct groups of highly sensitive individuals, a subset of individuals that had a difficult or unhappy childhood as they defined it, which was about one third of the participants. Those who had an unhappy childhood scored higher on social introversion and emotionality. The second group who reported a "normal" or happy childhood who did not score as highly on introversion and emotionality but did still report having basic sensitivity; and (f) a link between ineffective/traumatic parents resulting in an unhappy childhood, specifically for men. The questionnaires and interviews included items that turned out to be the beginning of what has become a 27-item Highly Sensitive Person (HSP) Scale. This series of seven studies which used diverse samples and measures identified a "core variable of sensory-processing sensitivity and demonstrated its partial independence from introversion and emotionality (Aron & Aron, 1997, pp. 364-365)." The final product, which has levels of reliability and content, convergent, and discriminant validity adequate for future research, achieved the ultimate goal determined upon the outset of the study. The validity of the research results and psychometrics to ensure that the interpretations are in line with what was attempted and can be used in the future (Hays, 2024) (Aron & Aron, 1997) is best described by the author of the article on page 364 of the study:

> "The 27-item version used in Studies 6 and 7 had internal consistency reliability (alphas) of .87 and .85, respectively. The measure has good content validity in terms of our conceptualization of high sensitivity as implying both high levels of sensitivity to subtle stimuli and being easily overaroused. Further, by including both types of items, we have

> also probably minimized social desirability bias compared to previous attempts at measuring constructs related to sensitivity. Finally, the measure's discriminant, convergent, and overall construct validity was supported by the entire set of studies, although especially by Studies 6 and 7, in which it was used in its precise final form (Aron & Aron, 1997, p. 364)."

While the study was found to be valid and reliable, as with most studies, there are still some limitations. Many studies have attempted to find genetic information that helps to "prove" or align their arguments, however in this case, there is no epigenetics or genetic information that would prove the sensory trait scientifically. There are also "self-defining" measures to which the participants were asked, such as whether their childhood was good or bad. This can mean different things to different participants and can open the door to bias and subjectivity despite the best of intentions.

Social and Cultural Implications

The social context wherein an individual is raised, along with their culture, beliefs, and feelings around the social construct, must be considered with this study and its results (Hays, 2024). While East Asian and Western cultural contexts, along with many others, have been studied, and findings have suggested that cultural influences on brain function should not affect the outcomes (Aron et al., 2010) (Hedden et al., 2008), it cannot be overlooked that intrinsic bias may still be present when questions are answered by participants. In addition, men versus women have no biological differences in sensitivities, however, their answers have been found to vary from one gender to another since in the West it is seen as weakness for males to be "sensitive" so they often try to present as "tough" regardless of how accurate that presentation may be. As such, the research may be confused as to which are the primary and secondary sources of sensitivity. Is the brain the primary source such that it will outweigh the perception of the culture and the inherent bias that

exists or is it the other way around? This must be considered and factored into the results as they may be skewed depending on different upbringings (Aron & Aron, 1997).

Further Findings

The initial study conducted by Aron and Aron was found to be reliable, while another study carried out by an additional team (Smolewska, McCabe, and Woody) proved its reliability and furthered their findings. As a follow up to the HSPS study, there was thought that a psychometric analysis using a larger sample could allow for better estimates and cross-validation. In their factor analysis of the HSPS, Aron and Aron report that a single factor solution seemed to be the best fit. Originally, whether a person is highly sensitive or not was the only attribute measured by the scale. When these results were reviewed in depth, however, the result of their analysis shows there was a very wide range of responses, and the results needed to further consider all factors. Some factors appeared more relevant than others and there needed to be a study to focus on exactly what was being tested, what the range of sensitivities was, and how they were related, if at all. The study's results supported a three-component structure consisting of Aesthetic Sensitivity (AES), Low Sensory Threshold (LST), and Ease of Excitation (EOE). The study broke the initial single structure into three, which led to further discovery of what exactly needed to be measured and how it may impact individuals (Smolewska et al., 2006). This is only one study of many that took place since the initial study by Aron and Aron but shows that while their original study was reliable, there is always more work to be done. The separation of the three has been included in Appendix I.

Conclusion

The main reason that I chose to explore the HSPS is that from my experience working with those affected by substance abuse, there seems to be a propensity of those

that have been told to “stop being so sensitive.” My exploration dove into whether there was a measurement, whether it was reliable, and the extent to which it was tested. Finding that there is a strong minority of the population that may have this trait and that it may affect each person differently depending on their upbringings has helped me to understand how people may see and perceive similar experiences in vastly different ways. How one person defines a “tough childhood” may be different than another person who could have been raised in either a comparable situation or even the same situation completely. As I continue my journey to understand individuals, what has become clear to me is that within all the answers is the fact that every single person is unique. Unique to each scenario, situation, perception, or thought, and that much of these differences depend on the individual and the traits in which they inherited along with the situations to which they have been exposed. This further shows the need to be curious with everyone to understand from their perspective what they have been through and witnessed in their lives. The debate of nature versus nurture continues to come up and while there is ample evidence to support either side, what has been continuously shown is that the individual takes in the information, processes it through the lens with which they see the world, and produces thoughts and feelings that are consistent with the picture they see, regardless of any genetic component. It is on the counselor to make sure they are attempting to look at the same picture, or they could be helping lead a client in a direction based on their own thoughts and perspective as opposed to that of the client’s. Therefore, curiosity is always the answer, and it is crucial that as counselors we explore instead of assume.

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Appendix I

Item		Components		
Empty Cell	Empty Cell	**1 (EOE)**	**2 (AES)**	**3 (LST)**
3.	Do other people's moods affect you?	.36		
4.	Do you tend to be more sensitive to pain?	.36		
13.	Do you startle easily?	.42		
14.	Do you get rattled when you have a lot to do in a short amount of time?	.68		
16.	Are you annoyed when people try to get you to do too many things at once?	.62		
17.	Do you try hard to avoid making mistakes or forgetting things?	.36		
20.	Does being very hungry create a strong reaction in you, disrupting your concentration or mood?	.56		
21.	Do changes in your life shake you up?	.65		
23.	Do you find it unpleasant to have a lot going on at once?	.68		
24.	Do you make it a high priority to arrange your life to avoid upsetting or overwhelming situations?	.36		
26.	When you must compete or be observed while performing a task, do you become so nervous or shaky that you do much worse than you would otherwise?	.58		
27.	When you were a child, did your parents or teachers seem to see you as sensitive or shy?	.47		
2.	Do you seem to be aware of subtleties in your environment?		.65	
8.	Do you have a rich, complex inner life?		.76	
10.	Are you deeply moved by the arts or music?		.69	
12.	Are you conscientious?		.53	

15.	When people are uncomfortable in a physical environment do you tend to know what needs to be done to make it more comfortable (like changing the lighting or the seating)?	.53		
22.	Do you notice and enjoy delicate or fine scents, tastes, sounds, works of art?	.68		
5.	Do you find yourself needing to withdraw during busy days, into bed or into a darkened room or any place where you can have some privacy and relief from stimulation?	.39		
6.	Are you particularly sensitive to the effects of caffeine?			.70
7.	Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by?			.70
9.	Are you made uncomfortable by loud noises?			.70
18.	Do you make a point to avoid violent movies and TV shows?			.57
19.	Do you become unpleasantly aroused when a lot is going on around you?			.53
25.	Are you bothered by intense stimuli, like loud noises or chaotic scenes?			.74
Coefficient alpha		.81	.72	.78
Mean inter-item correlation		.26	.30	.34