- The Hebrew University of Jerusalem -
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# When the sensitivity of one is the trouble of the other: High-sensitivity as a moderator of the effects of physical stimulation on listening

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**Abstract**

A Highly Sensitive Person (HSP) is characterized by high levels of sensory processing sensitivity, found in approximately 20% of the human population. HSPs tend to be more sensitive and aware of the subtleties and nuances of their environment, but they are also more likely to experience overarousal and to be overwhelmed. Previous-HSP studies focused on the consequences of this trait for the person having this trait. I sought to examine how HSPs influence the reactions of their interlocutors. I predicted that HSP of a listener interacts with physical stimulation in affecting the listening experience of the interlocutor (speaker). Specifically, I hypothesized that a stimulating physical-environments reduces the ability of listeners high on HSP to listen more than it affects listeners low in HSP, but that a non-stimulating environment allows listeners high in HSP to excel in listening more than listeners low in HSP. Moreover, I predicted that the interactive effect of listening and physical environment on listening carries on the social anxiety of the speaker. That is, I predicted that perceived listening mediates the interactive effect of listening and physical environment on social anxiety.

To test these hypotheses I conducted a lab study, $N = 102$, and showed that physical-stimulation degraded the listening ability, and increased interlocutor's social anxiety, only for listeners high in HSP. Yet, it is not clear whether HSP trait has any effect in a non-stimulating-physical environment. In addition, the interaction effect of HSP with physical-environment on social anxiety was mediated by perceived listening, as predicted. My results demonstrate a condition in which the HSP's sensitivity was aroused and thus they become poor listeners and unfortunately caused their interlocutors social anxiety. This research contributes to the understanding of both the effects of HSP and the obstacles for effective listening.

## Introduction

"I'm in a circus and I see a little elephant that has no skin to cover its body. Its body is all pinkish and its flesh is exposed, without any protection. The elephants herd begins marching and it joins the march, while a large crowd in front mockingly watches it roaring with laughter. The little elephant stops marching and start crying. I feel tremendous sadness when I see the little elephant and a great compassion arises in me. I run to hug the little elephant, but recall that it has no skin and every hug of mine will hurt it even more. I sit down next to it and begin to caress it very gently. The little elephant looks straight into my eyes and its look has a lot of love and gratitude. It smiles at me and I feel like I found myself."

This quote is from a dream shared by a student (Mikulincer, 2011) that exemplifies the experience of a highly sensitive person (E. N. Aron, 1996). That is, on one hand, this person cannot tolerate physical stimulations when already disturbed by the environment (e.g., reject a comforting hug when emotions run high). On the other hand, this sensitive person can gently convey gratitude in an almost imperceptible way (e.g., looks in a way that conveys love). This thesis is about such highly sensitive people. Specifically, I will develop hypotheses suggesting that highly sensitive people could be excellent listeners, but only as long as they are not disturbed by the environment. In such conditions, these people can be better listeners than people who are not highly sensitive. In contrast, when people who are highly sensitive are placed in an environment that they experience as physically stimulating and overwhelming, they lose their ability to process external information and they become very poor listeners. In summary, I will propose that the loss of the "elephant" skin simultaneously create an advantage and a disadvantage, where the environment dictates whether the advantage will overweight the disadvantage. To advance my

hypotheses, I first review the construct of highly sensitive person and its mechanism. Then, I consider listening, and finally offer my hypotheses.

***The reaction of highly sensitive persons to physical stimulation***

All living organisms respond to variation in their physical environment through sensors that detect changes in patterns of energy (such as light or sound) (J Strelau, 1994). These changes in the environment – stimuli – can evoke reflexes, which may be so complex that some researchers, including Pavlov (1927/1960) and Sherrington (1947), consider them to be the basis for perception and the building-blocks of all behavior (even language). Yet, there are individual differences in the capacity to process information from the environment (both in humans in other organisms): some individuals can handle larger amount of stimulation than others (E. N. Aron, 1996; Belsky & Pluess, 2009; Jan Strelau, 1987). When an individual experiences a level of stimulation that exceeds the processing capacity, the individual tends to "shut down" and attempt to block the stimulation. This phenomenon was labeled transmarginal inhibition (Pavlov, 1927/1960).

Building on the notion of transmarginal inhibition, E. N. Aron (1996) proposed a personality trait labeled Highly Sensitive Person (HSP). HSP is a personality trait of heightened sensitivity to external and internal stimulations that characterized by high levels of Sensory Processing Sensitivity (SPS; E. N. Aron, 1996). The trait is largely innate, although it could be acquired through individual environmental and life circumstances (A. Aron et al., 2010; E. N. Aron, 1996, 2004; E. N. Aron, Aron, & Davies, 2005). HSP characterizes about 20% of the population (E. N. Aron, 1996). Their strong survival instincts provide an evolutionary advantage for group's survival both among humans and among various species of animals, including fish, birds, and dogs (E. N. Aron, 1996; E. N. Aron & Aron, 1997; E. N.

Aron, Aron, & Jagiellowicz, 2012). HSPs tend to be aware and notice the subtleties and nuances in the environment, including perception of others emotions, feelings, moods like unexpressed anger, thoughts, smells, colors and many other things that are concealed and invisible to non-HSPs (E. N. Aron, 1996; E. N. Aron et al., 2012). HSP is attributed not to sharper senses (actually many HSPs wear glasses), but to more rigorous information processing in the brain (Acevedo et al., 2014; E. N. Aron, 1996). The HSPs invest a lot of thought over every single thing and stimulation, observing in their environment more subtle distinctions between every stimulus.

The HSP trait is considered as a "package deal" containing both positive and negative aspects (E. N. Aron, 1996). Among the positive aspects, HSPs absorb and process more deeply their environment and therefore enjoy special benefits and capabilities as foresight, strong intuition, great creativity, developed imagination, deep insight, conscientiousness and sensing the other (E. N. Aron, 1996). Among the negative aspects, HSPs are more likely to experience overarousal, be overwhelmed, and reach transmarginal inhibition (E. N. Aron, 1996; Belsky & Pluess, 2009; Pavlov, 1927/1960). When HSPs are overwhelmed, their body struggles to process the stimulus and therefore they experience intensive-physical reactions (such as rapid heart rate), which are usually misinterpreted as stress or anxiety that in turn increases their overarousal until they "shut down", that is, go into transmarginal inhibition (E. N. Aron, 1996; Pavlov, 1927/1960). Therefore, the HSPs tend to be more careful, even withdrawn, characterized by behavioral impedance before responding to the environment, and by the need to be alone (E. N. Aron, 1996, 2000; Jagiellowicz et al., 2010). Thus, HSPs are often mistakenly considered as introverts, whereas 30% of the HSPs are actually extroverts (E. N. Aron, 1996; E. N. Aron & Aron, 1997).

Moreover, there is a consensus that the HSPs are a unique kind of a genetic "species" (E. N. Aron, 1996; Kagan, 1994; Pavlov, 1927/1960). According to brain studies, including by MRI studies, HSPs' brains work differently from non-HSPs. HSPs, relative to non HSPs, show a stronger activity of brain regions involved with awareness, integration of sensory information, empathy, and preparation for action in response to emotionally evocative social stimuli (Acevedo et al., 2014), deeper and careful information processing (Jagiellowicz et al., 2010), notice more differences and nuances (Jagiellowicz et al., 2010), and react more strongly to positive, relative to negative, images (Acevedo et al., 2014; Pluess & Belsky, 2013).

***Listening***

Listening is a multi-dimensional process (Bodie, 2012; Irving & Dickson, 2006) which requires an effort of understanding and accepting - with empathy - the other as an individual, while simultaneously dropping judgment and criticism (Rogers, 1951; Rogers & Roethlisberger, 1991/1952). This process, as opposed to just hearing, is complex and uses all human senses and demands a lot of concentration, energy, motivation, tolerance, silence and calmness – which in fact is being empathetic (Wicks, 1994). Hence, this process includes both cognitive and emotional aspects expressed by the listening quality, as well as by the mental ability to listen. Rogers (1951) labeled such listening as *listening for understanding*, which I will label here as *good listening.*

Much research demonstrates the benefits of good listening both for listeners and speakers. Good listening could build a positive and deep relationship (Rogers & Farson, 1987; Rogers & Roethlisberger, 1952). The listener attains more information about and from the speaker (Rogers & Farson, 1987) and could benefit from it in marketing and sales (Castleberry, Shepherd, & Ridnour, 1999). The speaker better

listens to oneself with more care and compassion (Rogers & Farson, 1987), experiencing emotional recovery (Nils & Rimé, 2012), enabling the speaker to maintain stability of self-construct (Pasupathi, 2001), elaborating change in self-view (Weeks & Pasupathi, 2011), raising more opinions and evaluations (Bavelas, Coates, & Johnson, 2000; Pasupathi, Stallworth, & Murdoch, 1998), feeling psychological safety (Castro & Kluger, 2011), and more. Therefore, there is no doubt that *good listening* has many positive effects. Accordingly, the current thesis will examine when HSPs are good listeners, and even better listeners than non-HSPs.

***The effect of stimulation on HSPs listening ability***

The effect of stimulation is composed from the stimulation itself (Jagiellowicz et al., 2010) and from the individual sensory processing depth, inhibition behavior, stimuli sensitivity and the emotional and physiological responses (E. N. Aron et al., 2012) – which are extremely important and required for the listening process. The HSPs, by their personality, are considered as high in these parameters (E. N. Aron et al., 2012) and therefore have a potential of being an excellent listeners.

Building on the theory described above, I suggest that the character trait of HSP increases the intensity sensation of the stimulus and improve the listening ability, but only when they are not placed in an environment that they experience as physically stimulating and overwhelming – otherwise they will experience overarousal, be overwhelmed, reach transmarginal inhibition and therefore become poor listeners.

To summarize, the current research will examine how stimulation affects HSPs' listening ability. Specifically, this research will test whether the HSPs are good listeners, and even better listeners then non-HSPs, when they are not disturbed by physical stimulations. Moreover, this study will test whether the HSPs becomes

poor listeners, and even poorer listeners then non-HSPs, when they are placed in a physically stimulating environment. Accordingly, the formal hypotheses of the current research are as follows:

> ***H1:*** *There will be an interaction between HSP and physical stimulation in affecting listening, such that people high in HSP will listen better than people low in HSP in an environment with little physical stimulation, but that people high in HSP will listen worse than people low in HSP in a physically stimulating environment.*

**Social Anxiety**

Listening with the qualities advocated by Carl Rogers (1951) frees speakers from concerns about negative evaluations (Rogers, 1980). Concerns about negative evaluations when people attempt to obtain approval or to avoid disapproval (Friend & Gilbert, 1973; Watson & Friend, 1969). Therefore, removing the need to obtain approval, by providing good listening, for example, could decrease the social anxiety of the speaker (Kocovski & Endler, 2000). In contrast, listening without the qualities advocated by Carl Rogers (1951) may cause the speakers to feel disapproval, and thus increase their social anxiety (Leary, 1983).

Therefore, I also predicted that people high in HSP affect the social anxiety of their interlocutor. Specifically, when people high in HSP are distracted, they will experience social anxiety, become poor listeners, and therefore increase the social anxiety of their interlocutor. In contrast, when people high in HSP have no distraction while listening they will listen better than average and thus will reduce the social anxiety of their interlocutors. Thus, I hypothesize that:

> ***H2a:*** *There will be an interaction between HSP and physical stimulations in affecting the social anxiety of the speaker. Specifically, people high in HSP*

*will reduce the social anxiety of their interlocutors more than people low in HSP in an environment with little physical stimulation, but will increase the social anxiety of their interlocutor more than people low in HSP in a physically stimulating environment.*

***H2b:*** *The listening experience of the speaker mediates the interactive effect of HSP and physical stimulation on social anxiety of the speaker.*

## Method

### Participants

First-year undergraduate students, $N = 102$, at the Hebrew University in Jerusalem participated in a lab experiment in exchange for course credit.

### Procedure

I paired participants randomly into dyads, and assigned order of roles (speaker first vs. listener first). Behind the speaker there were 8 computer screens, visible only to the listener. In the high-physical stimulation condition, the computer screens flickered (it was programmed to cycle black and white screens). In the low-physical stimulation condition, the computer screens were turned off. In both conditions, I asked the listener to listen as one does when listening to a close friend. I asked the speakers to talk for 12 minutes about one of the following two randomly assigned scenarios. The first scenario was about a consideration of the Israeli universities to introduce a voluntary service for one year (50 hours total) that will benefit the society, allowing students to either create their own service project or to join an existing university project, as a mandatory condition for graduation (Baker & Petty, 1994; Cheatham & Tormala, 2015; Tormala, DeSensi, & Petty, 2007). The second scenario was about a consideration of the government to increase the tax on junk food (such as

chips, burgers and pizzas) in order to improve the citizens' eating habits and health (Clark, Wegener, & Fabrigar, 2008).

Upon completion of the 12 minute conversations, I asked the speakers to rate the listening they experienced, and both the listeners and the speakers to rate the stimulation they experienced during listening – a manipulation check. After answering the questionnaires, I asked the participants to switch seats and speaker-listener roles for an additional 12-minute conversation, and to answer the research questionnaires accordingly. In the second round, the speakers received the scenario that not used for the first speaker.

**Instruments**

The scales in the present work were translated into Hebrew and back-translated into English. To avoid gender-related complexities in Hebrew, I noted in the instructions of the questionnaire that although the questionnaire is written in a masculine form, it is intending for men and women alike.

**Experienced stimulation (a manipulation check).** I asked participants to rate the following item: "The room conditions allowed me to listen well, with no interruptions". Unfortunately, due to an error, participants in the control group were asked this question with a scale ranging from 0 = *Strongly disagree* to 10 = *Strongly agree*, whereas in the experimental group they received the same anchors ranging from 1 to 9. Therefore, to salvage this measure, I equated the scales by multiplying the answers of the participants in the experimental group by 11/9.

**Highly Sensitive Person (HSP).** I used the 27-items HSP questionnaire (E. N. Aron & Aron, 1997). To increase validity, I changed the yes/no response format into a rating scale ranging from 0 = *Not true at all* to 10 = *Very true*. Both the yes/no HSP scale and its short versions are reliable and widely used in HSPs' studies

(Acevedo et al., 2014; E. N. Aron & Aron, 1997; E. N. Aron et al., 2012; Jagiellowicz et al., 2010). In the current study the reliability was excellent, $\alpha = .96$.

**Perceived listening.** I used eight items from the constructive-listening subscale of the facilitative-listening scale (Kluger & Bouskila-Yam, in press) using 10-point Likert-scale items ranging from 0 = *Strongly disagree* to 10 = *Strongly agree*. The items were adopted for the experiment and relate to the partner in the experiment as opposed to one's supervisor in the original scale. Example items are "When my partner listens to me, s/he … Seemed to understand my thoughts"; "…Ignored my attempts to express my feelings"; "…Paid close attention to what I say", both when reported by the listener and when reported by the speaker $\alpha$'s = .92.

**Social Anxiety**. I used the 7- item State Social Anxiety scale (STAI; Kashdan & Steger, 2006). Items were ranging from 1 = *not at all agree* to 9 = *completely agree,* both when reported by the listener and when reported by the speaker $\alpha$'s = .95.

***Analysis***

Up to two participants had missing values on some variables. I used mean imputation to avoid discarding their useful data. To test the hypothesis, I regressed speaker's reported listening on condition (low-stimulation environment vs. high-stimulation environment), HSP, and their interaction. I coded that the low-stimulation environment with 0 and the high-stimulation environment with 1, such that the higher the distraction the higher the score. Using this regression, I tested three things: Does the physical-stimulation condition affect listening? Does HSP relate to listening? And, does the effect of physical-stimulation condition on listening is moderated by HSP? A positive finding regarding the last question will support my hypothesis. I conducted similar analyses to test the effects on social anxiety.

## Results

The manipulation check reveals that participants in the control group agreed much more with "The room conditions allowed me to listen well, with no interruptions", $M = 9.10$, $SD = 1.60$, than participants in the distraction condition, $M = 5.62$, $SD = 3.70$, $t(70.7)$ for unequal variances = 6.20, $p < .001$, $d = -1.21$. Thus, my manipulation appears successful, despite the error in using two different scale ranges.

I found no difference in perceived listening between the first and second speakers, $t\ (100) = 0.47$, $p = .64$, nor an interaction between order of speaker and experimental condition on perceived listening, $\beta = .08$, $p = .80$. Thus, the double use of each participant both as a listener and a speaker did not affect my result, and hence contributed to enhanced statistical power.

As can be seen in Table 1, distraction strongly reduced the experience of listening, both when reported by the listener and when reported by the speaker, *r's* = -.48. In addition, distraction increased speaker-social anxiety, $r = .31$, $p < .01$. Also note that there is a strong correlation between speaker-reported listening and listener-reported listening, $r = .76$. That is, there was an inter-judge agreement on the level of listening that existed in each session.

Table 1.

*Means, standard deviations, and correlations*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. Condition (experimental group) | 0.49 | 0.50 | | | | | | |
| 2. HSP | 6.50 | 1.97 | .03 | (.96) | | | | |
| 3. Listener-social anxiety | 2.88 | 1.83 | -.13 | .03 | (.95) | | | |
| 4. Speaker-social anxiety | 2.80 | 1.83 | **.31** | **.24** | .02 | (.95) | | |
| 5. Speaker-reported listening | 8.32 | 1.96 | **-.48** | -.19 | .08 | **-.61** | (.92) | |
| 6. Listener-reported listening | 8.32 | 1.96 | **-.48** | **-.24** | .04 | **-.50** | **.76** | (.92) |

*Note.* Condition = 1 was the distracted group, and Condition = 0 was the control group. Correlations for which $p < .05$ are printed in **bold**.

To test H1, I first checked whether the ICC of listening (as reported by speaker) exceeded .50, because above this value ordinary least square (OLS) approaches are biased and may be misleading (Kenny, Kashy, & Cook, 2006). The ICC of listening was .59 (see the null model in Table 2). Therefore, I tested my hypothesis with hierarchical linear modeling (HLM). As can be seen in Table 2, the data supports H1. Specifically, the interaction term of HSP with the experimental condition is significant. To interpret this interaction, I plotted in Figure 1, the predicted levels of speaker-reported listening as a function of the experimental condition and HSP, where low HSP is 2 *SD* below the mean and high HSP is 2 *SD* above the mean. Figure 1 indicates that the distraction manipulation turned HSP to especially poor listeners, but it is not clear if HSP became better listeners when there was no distraction.

Table 2.

*HLM models predicting listening*

| Estimates | Null (Step 1) | H1 (Step 2) |
|---|---|---|
| Intercept | 6.77*(0.19) | 7.02*(0.53) |
| Condition (A)[a] | | 2.48*(0.78) |
| HSP (B) | | 0.05(0.07) |
| A*B | | -0.56*(0.11) |
| Variance components | | |
| Within-person (L1) variance ($\sigma 2$) | 0.96 | 0.76 |
| Intercept (L2) variance ($\tau 00$) | 1.43 | 0.75 |
| Additional information | | |
| ICC | 0.59 | 0.51 |
| –2 log likelihood (REML) | 357.7 | 322.5 |
| Number of estimated parameters | 3 | 6 |
| Pseudo R2 | | .21 |

*Note.* Condition = 1 was the distracted experimental group, and Condition = 0 was the control group.

* $p < .01$.

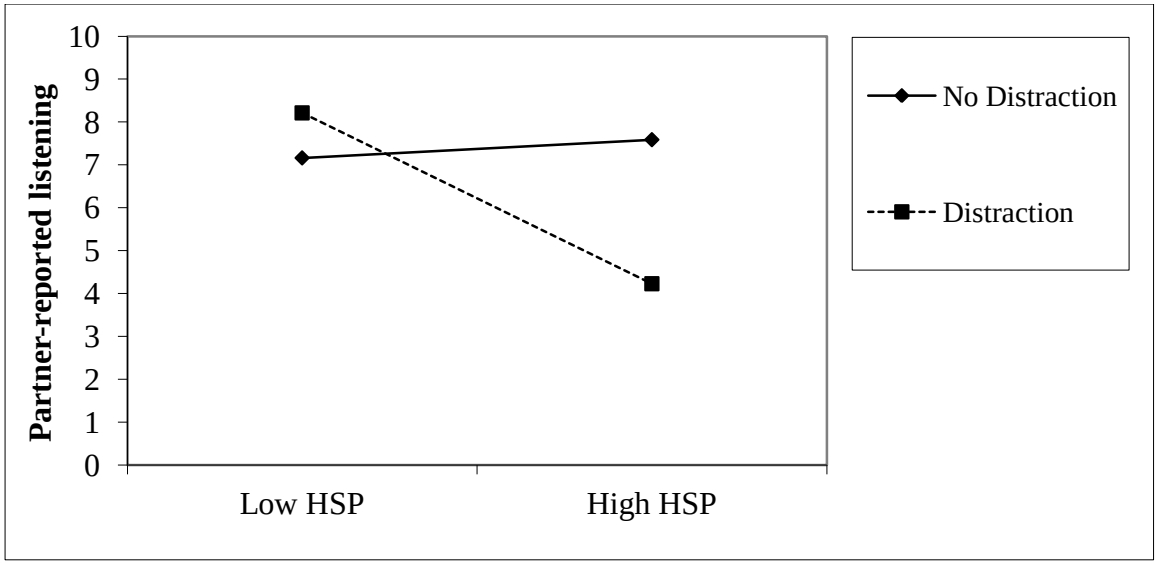


Figure 1. *Partner-reported listening by HSP (-2* SD *below and +2* SD *above the mean) and by condition (distraction vs. no-distratction).*

To test H2a-H2b, I first checked whether the ICC of social anxiety (as reported by the speaker) exceeded .50, and discovered it was .27. Therefore, I used OLS. To test H2a, I regressed speaker's reported social anxiety on distraction, HSP, and their interaction. As can be seen in Table 3, the data supports H2a. Specifically, the interaction term of HSP with the experimental condition affected social anxiety significantly. To interpret this interaction, I plotted in Figure 2, the predicted levels of social anxiety reported by the speaker as a function of the experimental condition, where low HSP is 2 *SD* below the mean and high HSP is 2 *SD* above the mean. Figure 2 indicates that people interacting with listeners high HSP experienced more social anxiety than people interacting with listeners with low HSP, especially in a physically stimulating (distracting) environment.

Table 3.

*Standardized Regression Coefficients Regressing Speaker's Social Anxiety on Condition, HSP, and their Interaction (H2a), and Controlling for Speaker Reporting Listening (H2b)*

| | β | | | |
|---|---|---|---|---|
| Predictor | H2a | | H2b | |
| Listening | | | .38 | ** |
| Experimental Condition (A) | -.31 | ** | -.13 | |
| HSP (B) | .26 | ** | .15 | |
| A*B | -.20 | * | -.05 | |

*Note.* Condition = 1 was the distracted experimental group, and Condition = 0 was the control group.

* $p < .05$; ** $p < .01$.

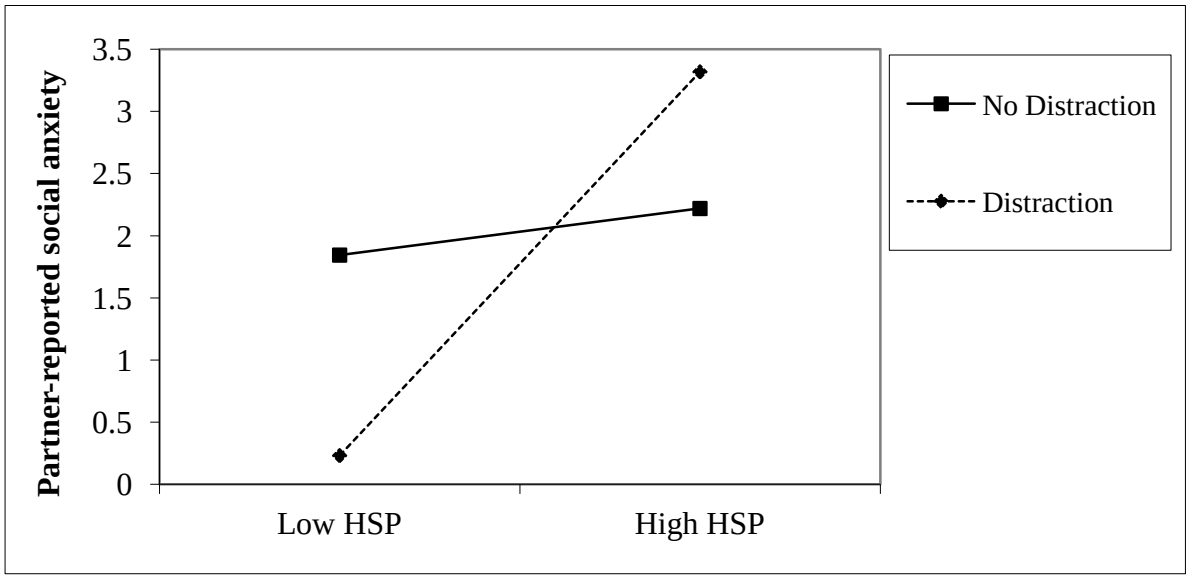


Figure 2. *Partner-reported social anxiety by listener's HSP (-2* SD *below and +2* SD *above the mean) and experimental condition.*

To test H2b, I reran the regression predicting social anxiety (Table 3), this time controlling for speaker's reporting listening. As can be seen in the last column

of Table 3, the interaction effect of HSP with the experimental condition disappeared once controlling for listening. Thus, H3 is supported. Specifically, it appears that under distraction, high HSP become poor listeners, which in turn make the speaker experience social anxiety.

## Discussion

Building on E.N. Aron's (1996) notion of HSP, I hypothesized that listener's HSP interacts with physical stimulation in affecting speaker's experience of listening, and consequently speaker's social anxiety. As hypothesized, physically stimulating environment degraded the listening ability only of listeners high in HSP. I found a similar effect on speaker's social anxiety.

This study contributes to understanding both of HSP and listening. First, this appears to be the first study to investigate the effect of physical-stimulation on HSP's social impact. Moreover, the current study is not only consistent with E.N. Aron's (1996) theory about the implications and limitations of the HSP trait, but it also expands the view of HSP. Specifically, people with high HSP are also limited in their ability to listen, due to physical stimulation, and consequently they influence negatively their interlocutors' (by increasing their social anxiety).

Second, listening researchers often manipulate listening with distraction (e.g., Bavelas et al., 2000; Pasupathi & Rich, 2005). Typically, listeners in the distracted condition are asked to count "*th*'s" uttered by speakers. My findings may suggest that the findings in this literature *underestimate* the effects of distraction for HSP listeners, but may *overestimate* this effect for people low in HSP.

### Implications

Good listening has many benefits (Bavelas et al., 2000; Castleberry et al., 1999; Castro & Kluger, 2011; Nils & Rimé, 2012; Pasupathi, 2001; Pasupathi et al.,

1998; Rogers & Farson, 1987; Rogers & Roethlisberger, 1952; Weeks & Pasupathi, 2011), and therefore it may be desirable to improve listening in organizational settings. Also, because HSP is relatively common (about 20% of the population, E. N. Aron, 1996), organizations may benefit from structuring environments that do not harm the performance of these people and nor their influence on their colleagues. By doing so, organizations may maximize the benefits and positive outcomes of unique to HSP, such as paying attention to details overlooked by people low in HSP.

Listening research largely focuses on the benefits for the speakers and rarely investigates the effect of poor listening and the obstacles to listening. Previous studies showed that listening may cause listener to be perceived as lacking in dominance, albeit to gain in prestige (Hurwitz, 2015, April), and listening may cause speakers high in avoidance-attachment style to lose psychological safety (Castro, Kluger, & Itzchakov, in press in press). The current study examined whether the presence of physical-stimulation affects listening in interacting with the HSP trait and revealed a strong interaction that even causes social anxiety to the speaker. Thus, listening may have some disturbing effects, and therefore it is important for organizations to find the point were listening harms the speaker. I propose that to improve the use of listening in organizations, it is necessary to enrich the organizations' knowledge obout listening. Particulary, I recommend teaching managers about listening and training them to listen. By doing so, I expect that organizations would learn how to use the benefits of listening while avoiding the disturbing effects it may have.

**Limitations**

The current study has two key limitations: lack of assessment of distraction, and lack of control measures. Specifically, I did not specify exactly what an optimal-

physical environment is for HSP. It is a possible that the laboratory in the non-distracted conditions was still not optimal for HSPs. If this were the case, then HSP may be better listeners than people low on HSP had I provided them with even quieter environment than the one afforded in my laboratory. Thus, the interaction results should be interpreted as directional (the more distraction the poorer the listening of HSP relative to people low in HSP), and conclusion regarding HSP listening in an environment ideal for their needs require waiting for future research that will provide them with an extremely non-distractive environment. Moreover, the problem with the manipulation check made it impossible to assess the exact impact it had on the participants.

Second, I did not consider confounding variables that may increase or decrease distraction related to the social, rather than the physical, environment. For example, mixed heterosexual-gender dyads may be able to recruit attention capacity to overcome distraction, due to attraction, even among HSP. Thus, in future research, attraction may be measured and controlled prior to the testing the hypotheses. Another source of distraction may be internal. Therefore, it may be desirable to control participants' perceptions of how bothered they were walking in to the experiment.

**Future Research**

Future research should investigate the influence of HSP and listening on other speaker's aspects, including creativity, safety, wellbeing, and motivation. Also, the above results may be augmented when the interaction of HSP and stimulation in the context of authority relationships, such as, manager-subordinate or leader-follower. For example, based on my hypothesis it could be that distracted HSPs reduces other aspects of their interlocutor's wellbeing, motivation, and creativity. Furthermore, to

understand better the HSP trait, it may be necessary to examine the HSPs' and their interlocutors' brain activities during listening under varying levels of in physical stimulation.

**Conclusion**

In this thesis I researched the HSP trait and its effect on the ability to listen in different physical situations, and its implication on social anxiety. I showed a condition in which the sensitivity of HSP can be not only a liability for those having this trait but also for their environment. Future research may investigate the conditions under which the sensitivity of HSP becomes a benefit not only for those having this trait but also for their interlocutors.

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## Appendix

The appendix contains the following parts (in Hebrew):

1. Consent form.
2. Laboratory instructions for speaker and for listener.
3. Questionnaires:
    3.1. Speaker's questionnaire:
        i. Speaker's reported listening (8 items).
        ii. Speaker's social anxiety (7 items).
    3.2. Listener's questionnaire:
        i. Listener's reported listening (8 items).
        ii. Manipulation check (1 item).
        iii. Listener's social Anxiety (7 items).
        iv. HSP (27 items).

**1. טופס הסכמה:**

משתתפים יקרים,

תרגיל זה הינו חלק ממחקר בנושא רגישות אישיותית, שנערך בבית הספר למנהל עסקים באוניברסיטה העברית ע"י יערה תורג'מן, וכולל מספר שאלות בנושא.

בשאלון אין תשובות "נכונות" או "לא נכונות" ואנחנו מתעניינים בתשובות המתאימות ביותר עבורכם אישית.

נודה לכם אם תשתתפו בתרגיל עד לסופו, אך אם תחושו אי נוחות, אתם רשאים להפסיק השתתפותכם.

המידע ממחקר זה ישמש לצרכי מחקר בלבד. המחקר מתוכנן להסתיים עד סוף דצמבר 2015 ולאיש מלבד צוות המחקר לא תהיה גישה אל הנתונים הגולמיים.

משך זמן התרגיל הינו כ-45 דקות והוא מיועד לבני 18 ומעלה. הוראות התרגיל מנוסחות בלשון זכר, אך מתייחסות לשני המינים כאחד.

עצם השתתפות בתרגיל מהווה הסכמה להשתתף במחקר. אתם רשאים להפסיק את השתתפותכם בכל שלב, זאת מבלי שיהיו לכך השלכות שליליות כלשהן.

בכל שאלה או בעיה ניתן לפנות ליערה תורג'מן בדוא"ל: yaara.tur@gmail.com

חשוב לקרוא את ההנחיות לשאלון ולהשיב בהתאם.

ארבע ספרות אחרונות של תעודת זהות (כולל ספרת ביקורת)

| | | | |
|---|---|---|---|
| | | | |

תאריך _____

חתימה _____

**2. הוראות מעבדה למקשיבים ולמדברים:**

**הוראות מעבדה עבור המקשיבים:**

תקשיב כמו שהיית מקשיב לחבר או חברה קרובים.

**הוראות מעבדה עבור הדוברים:**

דובר מס' 1:

האוניברסיטאות בישראל שוקלות להנהיג חובה של שירות התנדבותי במשך שנה (50 שעות סה"כ) במהלך לימודי התואר הראשון, כתנאי לקבלת התואר. השירות יכלול עבודה אשר תביא עימה תועלת לחברה. הסטודנט יוכל לבחור בין יצירת פרויקט משלו או הצטרפות לפרויקט קיים המועבר בחסות האוניברסיטה.

דובר מס' 2:

לאחרונה הוגשה הצעת חוק להגדיל את שעור המע"מ (מס ערך מוסף) על "ג'נק פוד" (Junk food) כגון צ'יפס, המבוגרים ופיצות. מטרת ההצעה היא לגרום לציבור לפתח הרגלי אכילה בריאים יותר ולשפר את מצבם הבריאותי של האזרחים.

**3. שאלונים:**

**3.1. שאלון עבור הדוברים:**

ההיגדים הבאים מתייחסים לשיחה שזה עתה קיימת. ענה על כל היגד לפי הרגשתך (0 - כלל לא מסכים, 10 - מסכים במידה רבה מאוד)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | שותפי לשיחה הקשיב לי | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2 | שותפי לשיחה ניסה להבין את הדברים שאמרתי | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3 | שותפי לשיחה הראה עניין בדברים שאמרתי | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 4 | לשותפי לשיחה היו כוונות טובות כלפי | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5 | שותפי לשיחה הקדיש לי את תשומת הלב המלאה | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 6 | שותפי לשיחה היה שיפוטי כלפי | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 7 | שותפי לשיחה התעלם ממני | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 8 | שותפי לשיחה שאל שאלות המעידות על כך שהיה קשוב לדברים שאמרתי | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

ההיגדים הבאים מתייחסים לשיחה שזה עתה קיימת. ענה על כל היגד לפי הרגשתך (1 - כלל לא מסכים, 9- מסכים במידה רבה מאוד)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | בזמן שדיברתי, דאגתי ממה ששותפי לשיחה יחשוב עלי | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2 | חששתי ששותפי לשיחה יבחין בנקודת החולשה שלי | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3 | חששתי ששותפי לשיחה לא התרשם ממני לטובה | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4 | בזמן השיחה חששתי שאומר את הדברים הלא נכונים | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 5 | בזמן שדיברתי, חשתי חוסר נוחות ומבוכה | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6 | התקשתי לתקשר עם המקשיב | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7 | חשתי דאגה לגבי דעתו של המקשיב עלי | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

מין ז / נ

מהו גילך _____

מהו מספר הזוג שלך (אנא ציין גם את הספרה וגם את האות שניתנו לך על- ידי הנסיין)

_____

בשיחה הייתי המקשיב ה – ראשון / שני

חוג לימוד_____

ארץ לידה _____

מס' שנים בארץ _____

שפת אם _____

### 3.2. שאלון עבור מקשיבים:

ההיגדים הבאים מתייחסים לתוכן הדברים שזה עתה שמעת. ענה על כל היגד לפי הרגשתך (0- כלל לא מסכים, 10 – מסכים במידה רבה מאוד)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | הקשבתי למדבר | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2 | ניסיתי להבין את הדברים שאמר המדבר | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3 | הראתי עניין בדברים שהמדבר אמר | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 4 | היו לי כוונות טובות כלפי המדבר | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5 | הקדשתי למדבר תשומת לב מלאה | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 6 | הייתי שיפוטי כלפי המדבר | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 7 | התעלמתי מהמדבר | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 8 | שאלתי את המדבר שאלות הראו שהייתי קשוב לדבריו | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 9 | תנאי החדר אפשרו לי להקשיב בצורה טובה, ללא הפרעות | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

ההיגדים הבאים מתייחסים לשיחה שזה עתה קיימת. ענה על כל היגד לפי הרגשתך (1 - כלל לא מסכים, 9- מסכים במידה רבה מאוד)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | דאגתי ממה ששותפי לשיחה יחשוב עלי | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2 | חששתי ששותפי לשיחה יבחין בנקודת החולשה שלי | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3 | חששתי ששותפי לשיחה לא התרשם ממני לטובה | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4 | בזמן השיחה חששתי שאומר את הדברים הלא נכונים | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 5 | חשתי חוסר נוחות ומבוכה | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6 | התקשתי לתקשר עם המדבר | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7 | חשתי דאגה לגבי דעתו של המדבר עלי | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

אנא ענה על השאלות הבאות כפי שאתה מרגיש באופן אישי, תוך שימוש בסולם של 0 עד 10 כמפורט להלן:

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| נכון בצורה קיצונית 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | לא נכון בכלל 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | האם אתה מוצף בקלות ע"י גירויים חיצוניים חזקים? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 2 | האם אתה מבחין בדקויות בסביבתך? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 3 | האם מצבי רוח של אחרים משפיעים עליך? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | האם אתה רגיש מאוד לכאב פיזי? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 5 | האם לאחר יום עמוס אתה מרגיש צורך לפרוש הצידה, למיטה או לחדר חשוך או למקום אחר בו תמצא מעט פרטיות והקלה מגירויים חיצוניים כלשהם? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 6 | האם אתה רגיש במיוחד להשפעה של קופאין? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 7 | האם אתה מוצף בקלות ע"י דברים כמו אורות חזקים, ריחות חזקים, בגדים מבדים מחוספסים או קולות חזקים? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 8 | האם יש לך חיים פנימיים עשירים ומורכבים? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 9 | האם רעש חזק גורם לך לאי נוחות? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 10 | האם אומנות ומוסיקה גורמות לך להתרגשות רבה? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 11 | האם לפעמים אתה מרגיש שמערכת העצבים שלך כל כך מותשת שאתה פשוט צריך להיות לבד? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 12 | האם אתה מאוד מצפוני? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 13 | האם אתה נבהל בקלות? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 14 | האם אתה נכנס ללחץ כשאתה צריך לעשות הרבה בתוך זמן קצר? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 15 | כשאנשים חשים שלא בנוח בסביבה שבה הם נמצאים, האם אתה יודע מה צריך לעשות כדי לעזור להם (לדוגמא, שינוי התאורה או מקום הישיבה)? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 16 | האם אתה מרגיש מוטרד כשאנשים דוחקים בך לעשות יותר מידי דברים בבת אחת? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 17 | האם אתה מנסה בכל הכוח שלא לשכוח דברים ולהימנע משגיאות? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 18 | האם אתה מקפיד להימנע מתוכניות טלוויזיה ומסרטים אלימים? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 19 | האם אתה חש עוררות-יתר לא נעימה כשדברים רבים מתרחשים סביבך? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 20 | האם תחושת רעב עזה גורמת לך לתגובה חזקה ופוגעת בריכוז או במצב הרוח שלך? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 21 | האם שינויים בחייך מזעזעים אותך? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 22 | האם אתה מבחין בריחות, טעמים, קולות ועבודות אומנות עדינים או מעודנים ונהנה מהם? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 23 | האם אתה חש אי נעימות כאשר מתרחשים הרבה דברים בו זמנית? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | האם הצורך לארגן את חייך, כך שתוכל להימנע ממצבים שיגרמו לך לדאגה או הצפה, הוא בעדיפות גבוהה בשבילך? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 25 | האם אתה מוטרד מגירויים אינטנסיביים, כמו רעשים חזקים או מצבים כאוטים (מצבים של תוהו ובוהו)? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 26 | כשאתה מוכרח להשתתף בתחרות או לבצע משימה לעיני אחרים, האם אתה רועד או נעשה עצבני כל כך, שרמת הביצועים שלך הופכת לנמוכה בהרבה מאשר במצב הרגיל? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| 27 | האם בילדותך, ההורים או המורים שלך ראו בך רגיש או ביישן? | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

מין ז / נ

מהו גילך _____

מהו מספר הזוג שלך (אנא ציין גם את הספרה וגם את האות שניתנו לך על- ידי הנסיין)

בשיחה הייתי המקשיב ה – ראשון / שני

חוג לימוד_____

ארץ לידה _____

מס׳ שנים בארץ _____

שפת אם _____