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**L'influenza del sistema immunitario
comportamentale sulle percezioni
situazionali**

**How the behavioural immune system may influence
situational perceptions**

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**How the behavioural immune system might shape people's situational
perceptions**

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Abstract

In this study, we tested 330 participants for relationships between three domains of disgust sensitivity (i.e., pathogen, sexual and moral disgust) as well as the two Perceived Vulnerability to Disease subscales (i.e., Germ Aversion and Perceived Infectability) and the eight dimensions of the DIAMONDS situational perceptions model (i.e., Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Deception and Sociality). We also tested for relationships between the aforementioned measures and the six dimensions of the HEXACO (i.e., Honesty-humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness to experience) personality model. Having translated the original English versions of the Perceived Vulnerability to Disease and the Situational Eight DIAMONDS questionnaire ourselves through a series of forward-and-back translations, we tested these translated measures for consistency and performed confirmatory factor analysis to assess Goodness of fit. We also tested and discussed their convergent and discriminant validity. Our results showed that our Italian-translated items of the the Situational Eight DIAMONDS constitute a valid measure of situational affordances; Conversely, the Italian-translated Perceived Vulnerability to Disease did not show the same level of validity. Our results also showed some relationships between disgust measures and situational affordances.

Keywords: Disgust, Situational Perceptions, Sex Differences, Personality, Pleiotropy

How the behavioural immune system might shape people's situational perceptions

Introduction

The avoidance of death or disability through avoidance of infection has always been a major evolutionary driving force; for example, until times that are relatively recent in evolutionary terms, almost 50% of children failed to survive to reproductive age (Volk & Atkinson, 2013), with the majority of deaths being because of infectious diseases. Some hypothesise that this extreme force of natural selection has given humans a cognitive structure that's called behavioural immune system. The behavioral immune system comprises adaptive psychological response mechanisms that are sensitive to cues that might predict presence of infectious pathogens and which respond with appropriate cognitive processing and affective reactions. Such a system is likely to be oversensitive as the cost of a false positive (i.e., avoiding non existing infections) is small relative to the possible cost of catching avoidable infections (Kurzban & Leary, 2001).

Disgust is considered to be one of the basic human emotions, defined by a strong revulsion and desire to withdraw from an eliciting stimulus or event (Rozin et al., 2000). Evolutionary models of disgust propose that this emotion evolved to help us avoid contaminated or harmful foods (Rozin & Fallan, 1987) or other potential sources of disease such as sexual contact (Oaten et al., 2009). In addition to its role in directly helping to expel harmful foods from the body, disgust also forms an important component of the behavioral immune system, the suite of psychological mechanisms that aid in the detection and avoidance of potential contaminants before they can make contact with you (Schaller et al., 2007). The kind of stimuli that elicit disgust and the degree of magnitude of the disgust response varies from person to person and is measurable (Duncan et al., 2009; Tybur et al., 2009). Hypothetically, because of the oversensitivity of the behavioural immune system, although disgust may have its origins in the protection against physical contamination, several studies have implicated disgust responses and self reported disgust

in moral decision-making (Eskine et al., 2011; Schnall et al., 2011; Wheatley & Haidt, 2005); as well as political attitudes (Inbar et al., 2011; Smith et al., 2011).

The situations we encounter in everyday life have, in addition to objective qualities (e.g., the time of the day or the weather) also qualities that are perceived subjectively. The same objective situation may induce different states of mind in different people and, consequently, different behavioural responses. The way we perceive situations is one of the many components of our personality. Researchers suggested that people perceive psychological characteristics of situations on eight major dimensions (Rauthmann et al., 2014). The way situations are perceived varies individually in relation to personality traits, personality pathologies, sex and age (Brown & Rauthmann, 2016; Jonason & Sherman, 2020; Rauthmann et al., 2014).

Because of the lack of previous use of the Perceived Vulnerability to Disease Scale and The Situational Eight DIAMONDS questionnaire in an Italian population, we had to translate and validate them. We chose to engage in a factorial validation and a convergent and discriminant validation. To test the latter, We used the HEXACO-60 and we considered three studies that had computed the correlations between the non translated version of our measures and The Big Five Traits (see Measures section). By focusing on the relationships found in both Rauthmann et al. (2014) and Jonason and Sherman (2020), if the Situational Eight DIAMONDS has been translated well, we should expect the following findings: Extraversion should correlate positively with Intellect, pOsitivity and Sociality; this makes sense because extroverts people find in others an important resource and tend to be lower in Neuroticism and consequently in negative emotion. Emotionality should correlate positively with Adversity and Negativity; because people with high Emotionality/Neuroticism are found to be more prone to depression and have a very sensitive alarm system and are therefore subject to more negative emotion and anxiety. Finally, Agreeableness should correlate positively with Intellect. By considering the correlations with $r > .15$ found in Duncan et al. (2009), if the Perceived Vulnerability to

Disease questionnaire has been translated well, we should expect the following:

Neuroticism should correlate positively with both Germ Aversion and Perceived Infectability; this makes sense, if people are highly worried about their health they'll tend to be more wary of potential harm and will therefore experience more psychological distress. Also, Agreeableness and Extraversion should correlate negatively with Germ Aversion. This also is to be expected because people with lower scores in Extraversion tend to see others more like a treat than a resource.

It is possible that the behavioural immune system has evolved a mechanism to alter one's perceptions of situations so as to decrease the probability of getting into a potentially infectious one, assuming that the evolutionary cost of the development of such mechanism isn't too high. One piece of evidence that would support the claim that such a mechanism exists would be that people's Situational Eight scores correlate with measures of disgust sensitivity, assuming that high scores in disgust sensitivity measures are a good descriptor of the intensity of the activity of the behavioural immune system of that person. In particular, we predict that people that score high in disgust measures are going to score high in the Duty dimension because both disgust measures (above all, the Germ Aversion subscale of the Perceived Vulnerability to Disease questionnaire) and the Duty dimension are linked to Conscientiousness (Oosterhoff et al., 2018; Rauthmann et al., 2016). We expect people that score high in disgust measures to feel more vulnerable to disease and perceive situations being more dangerous and threatening, hence scoring high in the Adversity dimension. Also we expect people that score high in the Mating dimension to score less in disgust measures, especially in the Sexual domain of disgust. This is because a person that is worried about sexually transmissible diseases is likely be paying less attention to sexual stimuli and mating opportunities. Feelings of tension and stress perceived in a seemingly pleasant situation could be caused by thoughts regarding the possibility of catching an illness, so people that score high in disgust measures should score high in the Negativity dimension and, conversely, low in the pOsitivity dimension. Out-group

avoidance is a behaviour linked to the behavioural immune system activity (Navarrete & Fessler, 2006), so we expect people that score high in Disgust measures to also score low on the Sociality dimension. In this study we will investigate whether such correlations exist.

Methods

Participants and procedures

The original sample was made up of 552 online participants, 166 of which did not fully complete the questionnaire. Of the remaining 386, 25 people did not consent to the treatment of their data; that put us at 361 participants. After filtering out participants that responded "Other" when asked about their sex (of which there were too little to infer any statistical analysis) we noticed there were many participants that had completed the questionnaire in too little time. To filter these, we used the following criteria: if people answered a full matrix of questions choosing always the same answer they were discarded from the sample. We filtered 31 people this way, leaving us with our final sample. The sample was composed of 330 (51 % male, 49 % female) participants from Italy aged between 18 and 78 ($M = 30.77$, $SD = 12.25$). Fifty-one percent of the sample was composed by volunteers contacted via Whatsapp; the remaining 49 % was composed by Mechanical Turk workers who were paid US\$0.75 (collected in 2021). Participants were given a brief explanation about the nature of the study and provided consent via tick box before the start. The participants completed a series of self-report measures. After completion they were fully informed about the nature of the study and were asked again to provide consent via tick box, they were then thanked and debriefed. All procedures performed in studies were in accordance with the ethical standards of the institutional research committee (Comitato etico della ricerca psicologica of the University of Padua; unique code 8688DgA3FB978C3889C0496AC3619BD9A).

MEASURES

To measure individual differences in the perceptions of situations (i.e. situational affordances), we replicated the method and materials used in Jonason and Sherman (2020).

Participants were presented with a picture of a bar, a classroom, and an office (the images are displayed in the appendix of this paper); which were deemed common and weak situations (Snyder & Ickes, 1985), randomized for order with men and women present and a list of 24 items, also randomized for order. They were instructed to “Take a look at this picture and imagine you were there now. Use the scale below to evaluate it. The question is: how much do you agree (1 = *strongly disagree*; 5 = *strongly agree*) that the statements provided describe how you feel about the location.” The 24 items (three items per dimension) were meant to describe the situations based on the measure of the situational eight DIAMONDS (i.e., Duty (e.g., A job needs to be done.), Intellect (e.g., The situation contains intellectual stimuli.), Adversity (e.g., I am being threatened by someone or something.), Mating (e.g., Potential sexual or romantic partners are present.), pOSitivity (e.g., The situation is pleasant.), Negativity (e.g., The situation could elicit stress.), Deception (e.g., It is possible to deceive someone.) and Sociality (e.g., Communication with other people is important or desired.) see Rauthmann et al. 2014). Items for each dimension were averaged within each situation and further aggregated across the three situations to quantify general perceptions. Within each situation, internal consistency (Cronbach’s α) ranged from .66 to .89 while at the aggregated (cross-situation) level they ranged from .61 to .87.

The Italian translation of the Situational Eight DIAMONDS questionnaire was carried out through a mixed forward-and-back translation procedure (Behling & Law, 2000). We translated the English version of the Situational Eight DIAMONDS into Italian. Then, one bilingual Italian–English speaker, blind to the original English version, translated the Italian version back into English. Discrepancies emerging from this back translation were discussed by the author and the bilingual Italian-English speaker until a consensus was reached on the final formulation of the items. In addition, before being used in this study, the newly developed Italian version of the Situational Eight DIAMONDS questionnaire was administered to four naïve participants in order to check the

understandability of the items and the flow of the whole questionnaire.

We also conducted a confirmatory factor analysis for the Italian translation. The fit indexes considered were: normed χ^2 , which for samples > 200 is a better way to assess fit than chi-square (an acceptable value would be less than 3); CFI (Comparative Fit Index, acceptable value $\geq .95$); TLI (Tucker Lewis Index, acceptable value $\geq .95$), RMSEA (Root Mean Square Error of Approximation, acceptable value $\leq .08$) and SRMR (Standardized Root Mean Square Residual, acceptable value $\leq .05$). Table 1 shows the Goodness-of-Fit Indexes in the model assessed and in a comparative bad model in which all items load into a single factor; the indexes were calculated using situation specific (bar, class and office) as well as cross-situational scores (computed by averaging the three situation specific scores). Our results support the existence of eight factors in the Italian translation of the Situational Eight DIAMONDS questionnaire, as well as further validating the translation of the items; these facts are supported by the more adequate confirmatory factor analysis indices for the eight factor model in comparison with a single factor model. These results were consistent when considering situation specific and cross-situational scores. Statistical analyses were performed with SPSS 21 and RStudio (lavaan version 0.6-9).

To further validate the Italian translation of the Situational Eight DIAMONDS questionnaire, we tested its convergent and discriminant validity. To test the convergent and discriminant validity of the Situational Eight DIAMONDS questionnaire we measured participant's general profiles of personality with the Italian version (Di Fabio & Saklofske, [in press](#)) of the HEXACO-60 questionnaire (Ashton & Lee, [2009](#)). this is a 60 item questionnaire that assesses the 6 dimensions of personality: Honesty-humility (e.g., I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed), Emotionality (e.g., I would feel afraid if I had to travel in bad weather conditions), Extraversion (e.g., In social situations, I'm usually the one who makes the first move), Agreeableness (e.g., I rarely hold a grudge, even against people who have badly wronged me), Conscientiousness (e.g., I plan ahead and organize things, to avoid scrambling

at the last minute) and Openness to Experience (e.g., If I had the opportunity, I would like to attend a classical music concert). Participants were asked to rate how much they agreed or disagreed with each item on a scale of one to five (1 = *strongly disagree*; 5 = *strongly agree*). We averaged the items to compute six indexes of the different personality dimensions. The Italian translation was obtained on the original authors website (<https://hexaco.org>).

In Table 3 we report the correlations between HEXACO Traits and the situational eight DIAMONDS, we also report measures of consistency (Cronbach's Alpha) as well as means and standard deviations for each measure: of the ten relationships we found, nine were present in at least one of the studies we considered for our convergent and discriminant validity analysis (the only exception was the Neuroticism-Sociality one) and four were present in all two of the studies (Extraversion-Intellect, Extraversion-positivity, Neuroticism/Emotionality-Adversity and Neuroticism/Emotionality-Negativity). The scale showed good internal consistency with the exception of the Duty subscale. The DIAMONDS questionnaire showed good convergent and discriminant validity overall; the only exception being that while we found that Emotionality was correlated positively with Sociality, in Rauthmann et al. (2014) it was found that Neuroticism was negatively correlated with Sociality.

To measure disgust sensitivity and propensity we used the Three Domains of Disgust Scale (Tybur et al., 2009) and the Perceived Vulnerability to Disease questionnaire (Duncan et al., 2009). The Three-Domains of Disgust Scale is a 21-item self-report measure of disgust responding in three domains: moral disgust (e.g., deceiving a friend), sexual disgust (e.g., hearing two strangers having sex) and pathogen disgust (e.g., stepping on dog poop). Each of the domains is measured by seven items. Participants reported their level of disgust (1 = *not at all disgusting*; 5 = *extremely disgusting*) with each item. We averaged the items to compute three indexes of the different domains of disgust. The Italian version of the scale (Poli et al., 2018) was obtained from the institute of cognitive

and behavioural psychology and psychotherapy of Florence.

The Perceived Vulnerability to Disease is a 15-item questionnaire designed to measure individual differences in chronic concerns about the transmission of infectious diseases. The questionnaire is composed of two subscales: one subscale assesses beliefs about one's own susceptibility to infectious diseases (i.e., Perceived Infectability; e.g., If an illness is 'going around', I will get it.); the other assesses emotional discomfort in contexts that connote an especially high potential for pathogen transmission (i.e., Germ Aversion; e.g., It really bothers me when people sneeze without covering their mouths.). Participants were asked to rate how much they agreed or disagreed with each item on a scale of one to five (1 = *strongly disagree*; 5 = *strongly agree*).

Like we did for the Italian version of the Situational Eight DIAMONDS questionnaire, the Italian translation of the Perceived Vulnerability to Disease questionnaire was carried out through a mixed forward-and-back translation procedure. Following the advice of the original author of the scale, we edited item 15, which was outdated: "I avoid using public telephones because of the risk that I may catch something from the previous user" became "I avoid using vending machines because of the risk that I may catch something from the previous user". In addition, before being used in this study, the newly developed Italian version of the Situational Eight DIAMONDS questionnaire was administered to four naïve participants in order to check the understandability of the items. We conducted confirmatory factor analysis to test the model fit of the Italian translation. Unlike what we did for the Situational Eight DIAMONDS questionnaire, we did not consider the original two factor model; instead, we tested two independent single factor models (one to which Germ Aversion items loaded and the other to which Perceived Infectability items loaded) proposed in Díaz et al. (2016) and a single factor model to which all items of the Perceived Vulnerability to Disease questionnaire loaded.

Table 2 shows the Goodness-of-Fit Indexes in the models assessed. While the Germ Aversion model has close to acceptable fit indexes, the same cannot be said for the

Perceived Infectability model; the weak values, even if better than the comparative model, do not support the validity of the Italian translation of the Perceived Vulnerability to Disease questionnaire. We weren't able to replicate the sex differences found by the original authors and while testing the converging and discriminant validity, we found a positive correlation between Germ Aversion and Conscientiousness, while the original authors had found a negative relationship between the same two measures. Moreover, the updated item 15 did not turn out to be a good item, Goodness of fit indexes as well as internal consistency (Cronbach's Alpha) had slightly better values if the item was removed and the item-subscale correlation was the lowest of the items of the scale. Our results are not enough to suggest that the elimination of item 15 is the way to obtain a more valid instrument of measurement but future research should be conducted having what was previously detailed in mind.

Similar to what we did to validate the Situational Eight DIAMONDS questionnaire translation, we also tested relationships between HEXACO and the two Perceived Vulnerability to Disease questionnaire subscales. We found as we predicted that Emotionality was correlated with both Germ Aversion ($r = .18$) and Perceived Infectability ($r = .27$). The only other correlation we found was a positive correlation between Conscientiousness and Germ Aversion ($r = .19$), but this was not present in Duncan et al. (2009).

Results

In Table 4 we report the correlations between the eight situational perceptions dimensions, the two perceived vulnerability to disease subscales (Germ Aversion, Perceived Infectability) and the three domains of disgust (Moral, Sexual, Pathogen); we also report measures of consistency (Cronbach's Alpha) as well as means and standard deviations for each measure.

We found that Germ Aversion was positively correlated with the Duty dimension and was negatively correlated with the Mating and the Deception dimensions. We also

found that Adversity was positively correlated with Perceived Infectability and that Mating was negatively correlated with the sexual domain of disgust. We examined whether the effects were moderated by participant's sex and sample type (Whatsapp volunteers or Mturk workers). We found the aforementioned correlations to be stable across sexes ($M = 0.34$, $SD = 0.45$, $range = 0.91$) and across sample types ($M = -0.53$, $SD = 0.52$, $range = 1.23$). We did not find any sex difference in the Situational Eight DIAMONDS dimensions nor in the two Perceived Vulnerability to Disease subscales. We found that women reported a higher level of sexual disgust ($t = 8.86$, $p < .01$, Cohen's $d = .95$); this was consistent with previous findings (Olatunji et al., 2012). We did not find sex differences between the two remaining domains of disgust.

Discussion

The avoidance of death by contamination or infectious diseases is a characteristic that Darwinian evolution has always selected for in humans, given the great cost and benefits associated with it. A biological immune system has evolved to help protect our ancestors from death when they had already come into contact with a pathogen or disease. Many researchers say that there is good reason to believe that natural selection has produced another system to limit the exposure our ancestors had to pathogens by influencing their behaviour; This system is called the behavioural immune system. The primary tool of the behavioural immune system is disgust. Although disgust may have its origins in the protection against physical contamination, a number of studies have implicated disgust responses in moral decision-making and political attitudes. The influence disgust has in fields seemingly unrelated to avoidance of disease is probably caused by the oversensitivity of the system. No study had been conducted on the influence the behavioural immune system might have on a person's situational perceptions. Assuming that a good indicator of high activity of this system is high scores in the two disgust measures we considered; We composed the first study to investigate this topic. In this Study we explored relationships between disgust measures and how people perceive

situations; we found the following:

people who reported perceiving more mating opportunities reported being less disgusted by sexual stimuli and less distressed by potentially infectious situations. Throughout the history of evolution and still today, sexual contact is a major source of potential contamination and disease; it makes sense that a highly sensitive behavioural immune system would influence perception as to make it less sensitive to mating opportunities, especially in non-intimate environments. This could be possible if the evolutionary cost of the development of this modification of the perception (i.e., the cost of missing a mating opportunity) is lower than the cost of seeing too many mating opportunities (i.e., cost of catching a sexually/orally-transmitted disease). People that reported seeing the situations we presented to them as more dangerous and threatening also reported being less resistant to disease: although the Perceived Infectability construct showed bad fit indices in the confirmatory factor analysis and the correlation is not strong, one could still hypothesise that people that score high on item three of the Adversity subscale "I am being threatened by someone/something" are probably often thinking about being threatened by infectious diseases. The less resistant to disease one rates himself the higher the feeling of being threatened by it must be. The fact that the data has been collected during the summer of 2021, not long after the outbreak of Covid-19 in Italy, and the fact that in all three situations people are indoors and are not wearing masks probably help magnify this effect. We found that people that reported higher discomfort in potentially infectious situations were more predisposed to feeling that they had to complete tasks. The participants that had a stronger discomfort in being in contexts that connote an especially high potential for pathogen transmission are the same that felt they had to do something about it. This is probably because of the fact that the in situations presented people are indoors and maskless. While once neutral, after Covid-19 the situations we used might be seen more as potentially infectious. The most interesting and the strongest correlation we found is the one between Germ Aversion and Deception; the two constructs

are negatively correlated. Some have hypothesised that the behavioural immune system, because of its oversensitvity, may also help to maintain the abstract integrity of the social order; in particular, the social immune system would help to maintain order by suppressing any actions that deviate from a group accepted social traditions and by assigning harsher moral judgements to actions that violate the social order. The participants who scored high in Germ Aversion might therefore be more reticent to engage in antisocial and deceptive activities and therefore be less prone to perceiving opportunities to engage in deceptive actions. It would be interesting to study whether people's trust in others and behaviours in games like the prisoner's dilemma could be uniquely predicted by disgust sensitivity and propensity measures.

Limitations

In this section we would like to emphasize the shortcomings we see in how this study was conducted: As mentioned in the measures section, we used the HEXACO-60 for conducting convergent and discriminant validations for the translated scales but the lack of data regarding correlations between those measures and the HEXACO made it so that we had to consider studies that considered correlations between the measures we translated and the Big Five Traits. It's important to take into account the fact that while The traits Extraversion, Openness and Conscientiousness are equivalent traits in both the Big Five and the HEXACO scales (avg $r = .80$, range = $.75 - .83$); the same cannot be said about Agreeableness and Neuroticism/Emotionality: Big Five Trait Agreeableness correlates $.50$ with HEXACO dimension Agreeableness and Big Five Trait Neuroticism correlates $.62$ with HEXACO dimension Emotionality (Martin, [in press](#)). If we had measured people's personality with the Big Five instead of the HEXACO we would have better assessed if the relationships between the Eight DIAMONDS and the HEXACO dimensions Agreeableness and Emotionality we found on our study mirrored the ones between the Eight DIAMONDS and the Big Five Traits Agreeableness and Neuroticism found in previous studies. This limitation didn't cause much more than minimal damage to the validation process and, on

the up side, we were the first to test the relationships Germ Aversion and Perceived Infectability had with the HEXACO dimensions of personality.

To measure the way people perceived situations we used cross situational scores, the idea being that those scores would capture people's dispositions in perceiving situations regarding of how they perceived a particular one. However, as mentioned in the discussion section, all of this situations have in common the fact that the people depicted are indoors and maskless. These and other common characteristics of the situations make our cross situational scores a less valid measure of people's dispositional situational perceptions. The images we used are not perfect, but still show plenty of score differences between the three, which is a sign that even though some of the characteristics are common to all three of them a lot of characteristics are unique to only each one of them. In future research, one might want to substitute the images used in this study or to test new additional ones. Of course, each additional image translates into 24 more questions participants have to answer; so, if one wishes to keep the measure of the Eight DIAMONDS brief and test different images, substituting the images and retesting the scale's validity is probably the best option.

Conclusions

While the influence that disgust reactions and disgust sensitivity have on political attitudes, behaviours, and moral judgements has been well studied; how the same disgust reactions and disgust sensitivity may influence people's perceptions, and more specifically, perceptions of situations is a topic that is yet to be fully explored. On this paper, we investigated this possibility and found that some of the ways in which people perceive situations are linked to those people's disgust sensitivity. In particular, the most interesting of the relationships we found was a positive relationship between Deception and Germ Aversion. We hypothesised that this was because of the fact that people more afraid of situations that show high risk of infectability have a highly active behavioural immune system. This same system might make people more blind to opportunities of deception

and/or more naïve regarding other people's potential deceptive behaviours.

Lots of work is still needed to confidently use the Italian translation of this instrument. Conversely, we are happy to give Italian researchers a new valid tool in the form of the Italian translation of the Situational Eight DIAMONDS (the translations are in the appendix of this paper) and hope that this is useful for future research. We also would suggest that during times of Covid-19 an improvement to the questionnaire could be achieved by adding masks to people in indoor situations.

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Table 1

*Situational Eight DIAMONDS questionnaire confirmatory factor analysis output:
Goodness-of-fit measures for the eight factor model and single factor model*

	Eight factor model				Single factor model			
	Bar	Class	Office	Overall	Bar	Class	Office	Overall
Normed χ^2	1.62	1.74	1.88	2.06	10.02	8.75	11.95	12.14
CFI	.95	.95	.95	.94	.30	.38	.25	.32
TLI	.95	.93	.93	.93	.24	.32	.18	.26
RMSEA	.043	.048	.052	.057	.165	.153	.183	.184
SRMR	.057	.055	.054	.052	.180	.148	.190	.159

Table 2

*Perceived Vulnerability to Disease questionnaire confirmatory factor analysis output:
Goodness-of-fit measures for the two single factor model and the single factor Perceived
Vulnerability to Disease model*

	Germ Aversion model	Perceived Infectability model	Single factor model
Normed χ^2	2.59	8.85	6.47
CFI	.92	.82	.56
TLI	.89	.74	.49
RMSEA	.070	.155	.130
SRMR	.051	.088	.122

Table 3

Descriptive statistics and correlations between situational perceptions and HEXACO dimensions

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Honesty-Humility	–													
2. Emotionality	-.08	–												
3. Extraversion	.01	-.16*	–											
4. Agreeableness	.20**	-.20**	-.05	–										
5. Conscientiousness	.21**	-.03	.14	.03	–									
6. Openness to Experience	.07	.04	.13	-.03	.01	–								
7. S8: Duty	-.10	.17*	.03	.00	.14	.03	–							
8. S8: Intellect	-.04	.05	.18**	.01	.22**	.13	.46**	–						
9. S8: Adversity	-.11	.18**	.01	-.18**	-.16*	-.07	.06	.00	–					
10. S8: Mating	-.10	.03	.06	-.09	-.08	.03	.09	.14	.41**	–				
11. S8: pOsitivity	-.02	.00	.18**	-.05	.00	-.11	.17*	.18**	.20**	.46**	–			
12. S8: Negativity	-.02	.25**	-.20**	-.04	.00	.12	.10	.11	.28**	.23**	-.01	–		
13. S8: Deception	-.06	.11	.02	-.05	-.76	.01	.09	.09	.35**	.48**	-.16*	.41**	–	
14. S8: Sociality	.09	.22**	.11	.09	.11	.07	.21**	.36**	.08	.29**	.34**	.21**	.22**	–
Cronbach's alpha	.73	.69	.77	.68	.78	.66	.61	.71	.87	.85	.73	.80	.81	.69
Mean	3.40	3.25	3.05	3.08	3.49	3.59	3.65	3.82	1.89	2.60	2.64	3.65	3.30	3.52
SD	0.62	0.57	0.61	0.55	0.63	0.56	0.42	0.46	0.68	0.73	0.51	0.58	0.65	0.52

* $p < .05$, ** $p < .01$

Table 4

Bivariate correlations and descriptive statistics for disgust propensity-sensitivity measures and situational perceptions

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. PVD: Germ Aversion	–												
2. PVD: Perceived Infectability	.27**	–											
3. TDDS: Moral	.15*	.04	–										
4. TDDS: Sexual	.24**	.17*	.25**	–									
5. TDDS: Pathogen	.48**	-.02	.15	.23**	–								
6. S8: Duty	.21**	.03	.11	.01	.11	–							
7. S8: Intellect	.06	-.01	.10	-.07	.07	.46**	–						
8. S8: Adversity	-.02	.15*	-.10	.09	-.14	.06	.00	–					
9. S8: Mating	-.16*	.05	-.09	-.16*	-.12	.09	.14	.41**	–				
10. S8: pOsitivity	-.04	.08	.01	.01	-.12	.17*	.18**	.20**	.46**	–			
11. S8: Negativity	-.08	.05	.09	-.10	-.09	.10	.11	.28**	.23**	-.01	–		
12. S8: Deception	-.26**	.03	-.05	-.04	-.13	.09	.09	.35**	.48**	-.16*	.41**	–	
13. S8: Sociality	-.08	-.02	.06	-.05	-.04	.21**	.36**	.08	.29**	.34**	.21**	.22**	–
Cronbach's alpha	.74	.80	.80	.77	.75	.61	.71	.87	.85	.73	.80	.81	.69
Mean	3.06	2.63	3.69	2.41	3.46	3.65	3.82	1.89	2.60	2.64	3.65	3.30	3.52
<i>SD</i>	0.68	0.67	0.78	0.81	0.75	0.42	0.46	0.68	0.73	0.51	0.58	0.65	0.52

* $p < .05$, ** $p < .01$

Appendix
Italian translations

□
Table A1

24 item Situational Eight DIAMONDS

Guarda questa figura e immagina di essere in questa situazione. Valuta questa situazione con le frasi che trovi qui sotto. La domanda è: Quanto ti trovi d'accordo con il fatto che il contenuto delle frasi combacia con cosa provi in questa situazione.

Dovere

C'è bisogno di fare un lavoro

Devo adempiere ai miei doveri

È necessario un modo di pensare che abbia come fine il compimento di una mansione

Intelletto

La situazione contiene stimoli intellettuali

C'è l'opportunità di esibire le proprie capacità intellettuali

Occorre elaborare profondamente l'informazione

Avversità

Sto venendo incolpato per qualcosa

Sto venendo criticato

Sto venendo minacciato da qualcuno o qualcosa

Accoppiamento

C'è una carica sessuale nella situazione

Sono presenti potenziali partner sessuali o romantici

L'attrazione fisica è pertinente alla situazione

Positività

La situazione è gioiosa ed esuberante

La situazione è piacevole

La situazione è giocosa

Negatività

La situazione potrebbe comportare frustrazione

La situazione potrebbe indurre stress

La situazione potrebbe indurre sentimenti di tensione

Inganno

È possibile ingannare qualcuno

Qualcuno in questa situazione potrebbe essere ingannevole

È possibile non interagire con le altre persone in maniera onesta

Socialità

Comunicare con le altre persone è importante o desiderato

Gli altri esibiscono molti segnali comunicativi

Relazioni personali strette sono importanti o possono svilupparsi

□
Table A2

15 item Perceived Vulnerability to Disease scale

-
- 1 Mi dà davvero fastidio quando le persone starnutiscono senza coprirsi la bocca
 - 2 Se "sta girando" una malattia, io la prenderò.
 - 3 Non mi da problemi bere dalla stessa bottiglia di un mio amico
 - 4 Non mi piace scrivere con una matita che è stata palesemente masticata da qualcun'altro
 - 5 Le mie esperienze passate mi fanno credere che improbabilmente mi ammalerò anche quando i miei amici sono ammalati
 - 6 Ho un passato di vulnerabilità alle malattie infettive
 - 7 preferisco lavarmi le mani abbastanza presto dopo aver stretto la mano a qualcuno
 - 8 Generalmente, sono molto predisposto a raffreddori, influenze, e altre malattie infettive.
 - 9 Non mi piace indossare indumenti usati perchè non sai mai com'era la precedente persona che li indossava.
 - 10 Ho maggior probabilità a prendermi una malattia infettiva rispetto alle persone che mi stanno attorno
 - 11 Non mi sento le mani sporche dopo aver toccato soldi.
 - 12 Ho poche probabilità di prendermi un raffreddore, influenza o altre malattie, anche se queste "stanno girando".
 - 13 Non mi rende ansioso stare attorno a persone ammalate
 - 14 Il mio sistema immunitario mi protegge dalla maggior parte delle malattie che gli altri si prendono
 - 15 Evito l'uso di telefoni pubblici a causa del rischio che potrei prendermi qualcosa dal precedente utilizzatore.
-

Essendo l'uso dei telefoni pubblici un po' datato in questo studio l'item 15 è stato modificato in:

Evito l'uso di distributori automatici a causa del rischio che potrei prendermi qualcosa dal precedente utilizzatore.



Figure A1

Situations depicted in our version of the S8 DIAMONDS questionnaire