

TABLE A1. ANALYSIS RESULTS FOR DETERMINING THE NUMBER OF COMPONENTS IN STUDY 1

| Component | Study 1 | PA 1^a | Component(s) Partialed Out | MAP 1^b |
|------------------|----------------|-------------------------|---------------------------------------|--------------------------|
| 1 | 4.613 | 1.438* | 0 | .281 |
| 2 | 1.149* | 1.270 | 1 | .092* |
| 3 | .724 | 1.166 | 2 | .102 |
| 4 | .558 | 1.081 | 3 | .132 |
| 5 | .425 | 1.004 | 4 | .224 |
| 6 | .245 | .932 | 5 | .307 |
| 7 | .200 | .864 | 6 | .462 |
| 8 | .087 | .782 | 7 | 1.000 |

^a Parallel analysis results with n=183 and 1,000 permutations.

^b Average squared correlations from the MAP test.

* Indicates the optimum number of components.

TABLE A2. MEASUREMENT MODEL EVALUATION RESULTS

| Constructs and indicators ^a | Standardized loading | | |
|---|----------------------|------------------------|-------------------------|
| | Study | | |
| | 1 ^b | Group Emb ^c | Group Cont ^d |
| <i>Empathy (CR: .784,.858/.825)</i> | | | |
| I often have tender, concerned feelings for people less fortunate than me. | .637 | / | / |
| Sometimes I don't feel very sorry for other people when they are having problems. (R) | .471 | .889 | .983 |
| When I see someone being taken advantage of, I feel kind of protective towards them. | .626 | / | / |
| Other people's misfortunes do not usually disturb me a great deal. (R) | .635 | .844 | .673 |
| When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (R) | .413 | / | / |
| I am often quite touched by things that I see happen. | .727 | / | / |
| I would describe myself as a pretty soft-hearted person. | .559 | / | / |
| <i>Negative Evaluation (CR: .916,.788/.822)</i> | | | |
| I worry about what other people will think of me even when I know it doesn't make any difference. | .816 | / | / |
| I am unconcerned even if I know people are forming an unfavourable impression of me (R) | .462 | / | / |
| I am frequently afraid of other people noticing my shortcomings. | .522 | / | / |
| I rarely worry about what kind of impression I am making on someone. (R) | .567 | / | / |
| I am afraid that others will not approve of me. | .712 | / | / |
| I am afraid that people will find fault with me. | .739 | / | / |
| Other people's opinions of me do not bother me. (R) | .660 | .585 | .802 |
| When I am talking to someone, I worry about what they may be thinking about me. | .723 | / | / |
| I am usually worried about what kind of impression I make. | .827 | / | / |
| If I know someone is judging me, it has little effect on me. (R) | .696 | .752 | .676 |

| | | | |
|--|------|------|------|
| Sometimes I think I am too concerned with what other people think of me. | .816 | .879 | .853 |
| I often worry that I will say or do the wrong things. | .700 | / | / |

Perspective taking (CR: .446,.770/.869)

| | | | |
|---|-------|------|------|
| I sometimes find it difficult to see things from the “other guy’s” point of view. (R) | .345 | / | / |
| I try to look at everybody’s side of a disagreement before I make a decision. | .243 | .540 | .908 |
| I sometimes try to understand my friends better by imagining how things look from their perspective. | .223 | .999 | .844 |
| If I’m sure I’m right about something, I don’t waste much time listening to other people’s arguments. (R) | -.197 | / | / |
| I believe that there are two sides to every question and try to look at them both. | .153 | / | / |
| When I’m upset at someone, I usually try to “put myself in his shoes” for a while. | .537 | / | / |
| Before criticizing somebody, I try to imagine how I would feel if I were in their place. | .841 | / | / |

Self-esteem (CR: .868,.890/.848)

| | | | |
|---|------|------|------|
| On the whole, I am satisfied with myself. | .728 | / | / |
| At times I think I am no good at all. (R) | .666 | .810 | .563 |
| I feel that I have a number of good qualities. | .769 | / | / |
| I am able to do things as well as most other people. | .346 | / | / |
| I feel I do not have much to be proud of. (R) | .539 | .697 | .771 |
| I certainly feel useless at times. (R) | .676 | .896 | .808 |
| I feel that I’m a person of worth. | .779 | / | / |
| I wish I could have more respect for myself. (R) | .338 | / | / |
| All in all, I am inclined to think that I am a failure. (R) | .609 | .861 | .889 |
| I take a positive attitude toward myself. | .774 | / | / |

Susceptibility to embarrassment (CR: .948,.942/.930)

| | | | |
|--------------------------|------|------|------|
| I feel unsure of myself. | .694 | .744 | .740 |
|--------------------------|------|------|------|

| | | | |
|---|------|------|------|
| I don't feel comfortable in public unless my clothing, hair, etc. are just right. | .555 | / | / |
| I feel uncomfortable in a group of people. | .672 | .784 | .674 |
| I don't mind being the center of attention. (R) | .462 | / | / |
| I probably care too much about how I come across to others. | .636 | / | / |
| I feel inadequate when I am talking to someone I just met. | .684 | .742 | .894 |
| I feel clumsy in social situations. | .710 | .736 | .835 |
| I feel uncomfortable leaving the house when I don't look my best. | .529 | / | / |
| Sometimes I just feel exposed. | .467 | / | / |
| I feel humiliated if I make a mistake in front of a group. | .719 | / | / |
| I get flustered when speaking in front of a group. | .792 | .775 | .693 |
| I often feel emotionally exposed in public and with groups of people. | .736 | / | / |
| It is unsettling to be the center of attention. | .614 | / | / |
| I get tense just thinking about making a presentation by myself. | .749 | / | / |
| I have felt mortified or humiliated over a minor embarrassment. | .619 | / | / |
| I am very much afraid of making mistakes in public. | .786 | .763 | .695 |
| I don't like being in crowds. | .366 | / | / |
| I do not blush easily. (R) | .396 | / | / |
| I often worry about looking stupid. | .734 | .718 | .789 |
| I feel so vulnerable. | .700 | .696 | .699 |
| I am concerned about what others think of me. | .719 | .739 | .696 |
| I'm afraid that things I say will sound stupid. | .801 | .822 | .683 |
| I worry about making a fool out of myself. | .823 | .827 | .738 |
| What other people think of me is very important. | .609 | .734 | .545 |
| I am not easily embarrassed. (R) | .485 | / | / |

Vicarious Embarrassment – higher-order formative component

Dimension 1 (lower-order reflective component, CR: .897/.887/.933)

| | | | |
|--|------|------|------|
| I get embarrassed by others' public humiliation. | .697 | .699 | .808 |
| I get embarrassed by people becoming an object of ridicule. | .858 | .839 | .907 |
| I'm afraid of someone saying stupid things and being mortified in public. | .913 | .894 | .914 |
| I worry about others making a fool out of themselves. | .833 | .816 | .895 |
| <i>Dimension 2 (lower-order reflective component, CR: .896,.911/.859)</i> | | | |
| I feel embarrassed if someone makes a mistake in front of a crowd. | .819 | .838 | .832 |
| I feel embarrassed when I see someone disgracing himself/herself. | .912 | .909 | .829 |
| It makes me feel uncomfortable when I see someone disgrace himself/herself in public. | .897 | .921 | .808 |
| When fictional characters (e.g. novel, film, theater) embarrass themselves, I feel embarrassed, too. | .659 | .715 | .626 |

^a The items were used in a French translation. (R) indicates a reversed item; CR = Composite reliability (Study 1, Study 2 group embarrassment/Study 2 group control).

^b n=188.

^c Embarrassment group, n=52.

^d Control group, n=48.

APPENDIX 3. THE THEORETICAL UNDERPINNINGS OF VICARIOUS EMBARRASSMENT ARE UNCLEAR

Vicarious embarrassment (VE) “appears as a complex emotional response involving fear of negative evaluation, empathy, perspective taking, and embarrassment,” say Uysal et al. (2014, p. 48). While they start discussing some of the underlying dimensions of VE, their discussion lacks a convincing theoretical underpinning for their identification of these important emotions that should equal VE (see e.g., Hawk, Fischer, & van Kleef, 2011; Krach et al., 2011; Miller, 1987; Müller-Pinzler, Paulus, Stemmler, & Krach, 2012; Paulus, Müller-Pinzler, Westermann, & Krach, 2013; Thompson, 2014). In contrast with Uysal et al.’s approach, we present a richer literature review and enhance the background of VE in the following section.

Unlike VE, PE is the feeling of awkwardness or mortification (“losing face”) that follows a *self*-presentational failure in a social setting (Goffman, 1967). By contrast, VE is an uncomfortable, sympathetic feeling elicited from someone who observes another (an actor) committing a social faux pas. Focusing on the differences between PE and VE, Miller (1987) identifies VE’s situational and personal determinants. In line with Ekman (1992), VE and PE need to differ from each other, because every emotion relates to distinct and universal antecedents, appraisals, and experiences. Recent literature thus proposes various definitions and measurement techniques of VE, but these still fail to provide a comprehensive understanding of the vicarious emotion of embarrassment. Hence, previous research mainly examined the relation between VE and empathy (Miller, 1987), while it also underlined the importance of perspective taking in the VE context (Hawk et al., 2011). Experiencing VE firstly depends on an individual’s empathy level and secondly on his or her ability to take the perspective of another. Individuals’ perception of VE and its intensity seems to be a combination of these two constructs.

Furthermore, as empathy and perspective taking have different meanings, they are not interchangeable or substitutable.

1.1 Empathy

Empathy is “a vicarious affective response that more strongly matches another person’s emotional state or situation than one’s own circumstances” (Hawk et al., 2011, p. 502). Empathy is the ability to deal with reactions to experiences observed in others (Davis, 1983), which in turn activates automatic and somatic responses (Preston & de Waal, 2002) , i.e. a response to the actors perceived, or imagined affective state (Singer & Lamm, 2009). It is thus an ability that helps to understand the feelings of others by activating a subject’s corresponding representations (Miller, 1987). This ability is of significant importance in social settings as it is the basis for various vicarious responses toward others (Preston & de Waal, 2002; Singer & Lamm, 2009). Different scholars, including Uysal et al. (2014), underline empathy’s importance even in situations where the social target is not aware of his or her current transgression but the observer still shows a vicarious response (Hawk et al., 2011; Miller, 1987). This phenomenon could be explained by environmental cues that trigger empathy in the observer, most of all in observers with a higher capability for emotional empathy. Nevertheless, obvious signs of embarrassment by the actor reinforce the experience of VE in the observer (Hawk et al., 2011; Miller, 1987). Thus, “the maintenance of proper conduct in social interaction seems to be such a central concern and such a precarious undertaking that envisioning ourselves in the place of embarrassed others—even if we are innocent bystanders—may cause us to suffer empathic embarrassment” (Miller, 1987, p. 1068).

1.2 Perspective taking

As theories of empathy often rely on obvious emotional displays that elicit affective responses, situations where the actor is not aware of his current transgression tend to be disregarded (Hawk et al., 2011). Therefore, focusing only on the (emotional) process of empathy is not enough to understand VE in all its facets. There must be other processes that allow observers to mentally step into the shoes of another. Perspective taking as a cognitive process, which enables someone to see things from a point of view other than one's own, provides sufficient support for this notion. Krach et al. (2011) emphasize that observer's experience VE according to their cognitive appraisals of the events, even when the actor shows no obvious PE. In an experiment, Gilin, Maddux, Carpenter, and Galinsky (2013) tested whether perspective taking and empathy would be effective in different ways with regard to social perception. They found that individuals who empathize show a higher responsiveness to cognitive cues (perspective taking) than affective cues (empathy). Thus, the contextual cues that are available to the observer seem to be sufficient to elicit VE by triggering perspective taking. Accordingly, every witnessed situation that could potentially cause personal humiliation is qualified for evoking VE (Hawk et al., 2011; Hoffman, 2010; Marcus, 1999). By partially simulating the affective state of another, overlapping patterns of neural activities and underlying processes are necessary, which allows observers to understand and assimilate the emotions of others (Paulus et al., 2013). In order to understand perspective taking's role in the context of VE, it is important to have a look at the cognitive perspective by analyzing the simulation processes involved. A thorough explanation of these simulation processes comes from Keysers and Gazzola (2007) and Paulus et al. (2013). They argue that mentally taking the perspective of another is the result of two interactive simulation processes called mentalizing and mirroring.

Mentalizing is a process that triggers internal representations by projecting oneself into another's position and understanding and interpreting human behavior. Prior knowledge or similar past experiences make it possible to feel what the other feels. This imagination of the actor's mental state is made possible by using semantic information in particular (Keysers & Gazzola, 2007; Paulus et al., 2013).

The term "mirroring" refers to an automatic link between perception and action (Paulus et al., 2013). It allows an observer to mimic the actions of others, and to share their emotions in an embodied manner (Barsalou, Niedenthal, Barbey, & Ruppert, 2003; Preston & de Waal, 2002). Hawk et al. (2011) also refer to this process as nonverbal mimicry, which implies that all nonverbal gestures are mirrored. These gestures could be imitations, sounds, and postures. As Shearn, Spellman, Meirick, and Stryker (1999) underline, witnessing PE could lead to physiological reactions in friends and strangers. In cases where an actor shows PE accompanied by strong facial or postural reactions, his behavior might in turn stimulate stronger reactions in the observer (Flack, 2006; Flack, Laird, & Cavallaro, 1999; Hawk et al., 2011).

Thus, both of the interaction processes are important in the experience of VE. The ability to understand the mental state of another (mentalizing), combined with mirrored gestures (mirroring), increases VE in the observer (Stocks, Lishner, Waits, & Downum, 2011).

1.3 Fear of negative evaluation

Individuals who are sensitive to others are often overly concerned with their public image and afraid that others might judge them negatively. Prior research on social comparison and susceptibility to embarrassment confirms a positive correlation between fear of negative evaluations and an increased tendency to PE (e.g., Maltby & Day, 2000).

Thompson (2014), who examined the importance of a fear of negative evaluations on personal and vicarious embarrassment, confirms that it is a significant predictor of both PE and VE. These findings are supported by the study of Uysal et al. (2014), which underlines that VE is related to fear of negative evaluations. “Given that those high in fear of negative evaluation are more likely to have experienced acute discomfort during their own self-presentational failures they would seem to be more likely to project this state onto others, increasing the likelihood of an empathic response” (Thompson, 2014, p. 27).

In sum, Uysal et al. (2014) provide a brief explanation as to why the aforementioned factors are important in experiencing VE. What their study lacks, however, is a comprehensive understanding of how PE and VE differ from each other. Uysal et al. (2014) do not detail the development of their theoretical VE model, thus their explanation and theoretical conceptualization of VE are weak. In addition, Uysal et al. (2014) suppress the underlying meanings of VE’s theoretical determinants. By drawing on recent literature (e.g., Hawk et al., 2011; Krach et al., 2011; Miller, 1987; Müller-Pinzler et al., 2012; Paulus et al., 2013; Thompson, 2014), a potentially richer understanding of VE would have helped to explain why empathy and perspective taking in particular are so important in experiencing VE.