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Envy:

A Psychometric Refinement of the Construct

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A mio padre.

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CHAPTER 1

An Overview of Envy

Envy refers to a painful, social comparison-based emotion that typically stems from the desire of having a material or spiritual good that is enjoyed by someone else (Miceli & Castelfranchi, 2007; Smith & Kim, 2007). Within the psychoanalytic perspective, which was the first to develop a psychological theory of envy, in addition to an angry feeling of frustrated longing, envy is characterized by the impulse to take the desired object away or to spoil it (Klein, 1957). This natural, human emotion is commonly experienced (Foster, 1972), although cross-cultural differences exist in the way envy is associated to nouns and felt in the body (Adrianson & Ramdhani, 2014; Hupka, Otto, Tarabrina, & Reidl, 1993; Hupka, Zaleski, Otto, Reidl, & Tarabrina, 1996; Kim & Hupka, 2002).

The last decade has witnessed an increased interest of researchers in the psychological study of envy, and multiple definitions have been proposed that refer to cognitions, motives, and emotional reactions of the individual experiencing envy, together with the conditions that trigger the envious response. Parallel to the proliferation of definitions and operationalizations of envy across various research fields, different approaches have characterized the study of envy, which constitutes a barrier to the understanding of the envious feeling, in terms of both its configuration and potential consequences on individuals' wellbeing and social interactions.

The present chapter offers an overview of research on envy. First, the different approaches to the study and measurement of envy will be briefly presented. Second, the types of envy and the defining components proposed as inherent parts of envy will be described, in the attempt to clarify the configuration of the envious emotion that emerges from the

literature. Third, the contextual components of envy, that is, those circumstances under which envy is supposed to take place, will be presented. Finally, we will discuss the correlates of envy, as those stable individual tendencies that have been found to be associated the envious disposition, as well as the potential negative impact of envy on individuals' physical and mental wellbeing.

1.1. Approaches to the Psychological Study of Envy

Recent research on envy has been characterized by different approaches that do not seem to be well integrated and thus comparable. Indeed, some researchers (Carrasco, González, & Del Barrio, 2004; Gold, 1996; Smith, Parrott, Diener, Hoyle, & Kim, 1999) have investigated dispositional envy as a chronic, generalized sense of inferiority to others and dissatisfaction with one's own position relative to unspecified others, as well as the tendency to feel ill will towards advantaged others. Other researchers (Duffy, Scott, Shaw, Tepper, & Aquino, 2012; Duffy & Shaw, 2000; Vecchio, 1995, 1999, 2000, 2005) have instead focused on situational envy as a general envious feeling toward others in an environment where multiple unfavorable comparisons may occur. Finally, other scholars (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007) have examined episodic envy as a temporary envious feeling that is situation-specific, circumscribed to a specific social comparison and targeted at a specific person.

Research on envy is highly skewed towards studying momentary, event-generated experiences of envy more than the individuals' inclination to feel envy with heightened intensity and frequency. In the present dissertation, we will talk about dispositional and episodic envy only. Indeed, we believe that the situational approach might be incorporated in the dispositional one, since situational envy could be conceptualized as the stable tendency to feel envious of generic others within a specific environment.

With respect to the appropriateness of a dispositional conceptualization of the envious emotion, earlier emotion theories proposed to distinguish between trait and state manifestations of feelings such as anxiety, fear, and anger (e.g., Zucherman & Spielberger, 1976). Within a similar approach to the study of emotions, repeated state-emotions can be a driving force for trait emotions. Thus, the trait facet is conceptualized as the result of accumulated, repeated past emotional states, which become established and ordinary internal experiences that may even be anticipated by the individual, in ways that are independent of the environmental conditions. From this perspective, dispositional envy can be defined as a summary of past envious experiences, or as the average level of episodic envious states in specific envy-eliciting situations over time. As a result of repeated past envious experiences, envy thus becomes a relatively stable disposition, with dispositionally envious individuals being more likely to experience envy in front of unfavorable social comparisons, across multiple situations, and with heightened intensity. An example of a trait approach to envy is the inclusion of envy among the diagnostic criteria for the narcissistic personality disorder within the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). In support of a dispositional-episodic approach to envy, scholars have remarked that episodic envy can be experienced by any individual across the life span, regardless of having a stable personal inclination to frequently react with intense envy in front of unfavorable social comparisons (e.g., Cohen-Charash, 2009).

1.2. The Envy Configuration

Due to affinities with a number of other emotions (Miceli & Castelfranchi, 2007; Smith & Kim, 2007), the envy configuration is not well defined yet. Indeed, as a complex, social emotion, envy is characterized either by feelings shared with other emotions or by separate emotional states.

First of all, envy has been consistently associated to jealousy. This seems to be due to a sematic confusion for which the word "jealousy", in English, is often used to refer to envy, and to the frequent co-occurrence of envy and jealousy (Haslam & Bornstein, 1996; Parrott & Smith, 1993; Smith, Kim, & Parrott, 1988). In a study by Parrott and Smith (1993), participants were asked to recall and write a personal experience of either strong envy or strong romantic jealousy. While jealousy was present in a small part of the envy accounts, most jealousy accounts included envy, suggesting that a romantic rival might elicit envy for having enviable attributes or simply for enjoying the attention of one's partner (Smith & Kim, 2007). Nevertheless, a differentiation between these related yet distinct emotions was finally establish by scholars. Indeed, envy involves two people and concerns feelings arising from the desire for what another is enjoying, whereas jealousy involves three people and refers to feelings related to the fear of losing a relationship to another person (Parrott & Smith, 1993), with these qualitative differences between envy and jealousy being also supported by taxometric analyses (Haslam and Bornstein, 1996). Moreover, jealousy is typically more intense than envy. In a study conducted by Salovey and Rodin (1986), participants were presented with vignettes describing neutral, romantic (jealous) and social comparison (envious) situations in which three characters were involved (i.e., the protagonist, his/her lover and a rival), and asked to identify themselves with the protagonist. It was found that the overall negative affect reported by participants was significantly higher in the romantic condition, compared with the social comparison condition. Similarly, in the study by Parrott and Smith (1993), the retrospective personal episodes of jealousy were consistently attributed more intense affect, what might obscure the qualitative differences between the experiences of envy and jealousy.

A potential emotional consequence of envy that has been consistently associated to envy is *schadenfreude*, that is the pleasure at another's misfortune, proposed as an expression

of the hostile nature of envy (Smith & Kim, 2007). In an experiment conducted by Smith et al. (1996), subjects were presented an interview of a superior or average student who was preparing to get into medical school. An epilogue then informed subjects of a subsequent misfortune occurred to the student. Envy towards the target was found to mediate the effect of the experimental manipulation of envy on *schadenfreude*, whereas dispositional envy predicted *schadenfreude*. Similar findings were obtained by a replication study (Brigham, Kelso, Jackson, & Smith, 1997) in which envy ratings were positively associated to *schadenfreude* regardless of the deservingness of the target's misfortune. Further support of the importance of envy in explaining *schadenfreude* was provided by van Dijk, Ouwerkerk, Goslinga, Nieweg, and Gallucci (2006), who found that envy was a positive predictor of *schadenfreude* only under conditions of perceived similarity with the comparison target, and by Krizan and Johar (2012), who reported a mediating effect of envy in the relation between vulnerable narcissism and *schadenfreude*. Nevertheless, in a number of other studies envy did not influence *schadenfreude*, which was instead predicted by resentment and a general hostility towards the advantaged target who subsequently suffered a misfortune (Feather & Nairn, 2005; Feather & Sherman, 2002; Hareli & Weiner, 2002) and by resentment and perceived deservingness of the target's failure (Feather, Wenzel & McKee, 2013). In the attempt to clarify these inconsistent findings on the relationship between envy and *schadenfreude*, three independent studies have been recently conducted, which showed that only malicious envy, and not benign envy, was related to *schadenfreude*, even when controlling for dislike and anger towards the advantaged target and perceived deservingness of the other's better position (van de Ven et al., 2014). Previous lack of associations between envy and *schadenfreude* in some studies was then attributed to the different operationalizations of envy used, with statements referring to general or benign envy, which did not tap the hostile aspect of envy (van de Ven et al., 2014).

Indeed, in contrast to a dominant approach that interpreted envy as a maladaptive and hostile emotion, some scholars have highlighted the importance of distinguishing between malicious and benign envy (van de Ven, Zeelenberg, & Pieters, 2009). Different experiential and motivational patterns in personal descriptions of benign and malicious envy supported a distinction between these two types of envy. Benign envy is characterized by a moving-up motivation that can encourage individuals to improve themselves by gaining the desired object for themselves as well, whereas motivations in malicious envy are aimed at bringing the other down, with a wish for the other to lose the coveted object. Nevertheless, both types of envy are highly frustrating and entail strong feelings of inferiority, and are both aimed at reducing the gap with the advantaged party (van de Ven et al., 2009). Similarly, more recently Feather et al. (2013) described benign envy as a blend of envy and admiration, and hostile envy as a blend of envy and resentment. This distinction between benign and malicious envy was criticized by Tai, Narayanan and Mcallister (2012), who re-conceptualized the nature of envy, claiming that the envious emotion had been confounded with its consequences, since both the hostile and self-motivating facets of envy had been derived from its behavioral outcomes. They proposed, as an alternative, the centrality of envy as pain, which was also supported by recent findings in neuroscience indicating that the brain regions activated during pain were also activated during the envious experience (Takahashi et al., 2009), and claimed that, much like other complex emotions, envy is not aligned with any singular action tendency. Accordingly, the pain of envy may motivate people to address their relative disadvantage via different actions including a reduction of the advantage of the envied and/or the rising of the self, but in their model the positive or negative behavioral consequences of envy would depend on factors such as the cognitions about the advantaged person and dispositional and situational variables (Tai et al., 2012).

Going back to "envy proper" (Smith & Kim, 2007), defined as either the desire for something that someone else has or the wish that the other lacked the desired object (Parrott & Smith, 1993), which has characterized most research on envy, its association with other social emotions such as hostility and resentment is still complex and seems to be attributable to some shared components.

Hostility has been proposed as a signature feature of envy (Smith & Kim, 2007), with some scholars referring to the envious emotions as "hostile envy" (e.g., Feather et al., 2013). In support to this view, almost all participants in a study by Silver and Sabini (1978) interpreted the undeserved derogatory and hostile remarks made by a disadvantaged character towards a successful other as envy. Coherently, a hostile component that has been consistently proposed as salient in envy is ill will (Gold, 1996; Miceli & Castelfranchi, 2007; Parrott & Smith, 1993; Smith & Kim, 2007; Smith et al., 1999). According to Miceli and Castelfranchi (2007), ill will, that is the wish that the superior other suffers some failure, is a necessary ingredient of envy, having its ultimate goal in restoring equality and protecting one's self worth. In contrast, others scholars, like Hareli and Weiner (2002), stated that hostility is not an inherent characteristic but rather a consequence of envy, and thus focused on the coveting aspect of envy.

The hostile reaction to another person's advantage has been largely included in envy operationalizations, nevertheless a confusion between hostility and resentment has frequently been made in research on envy. For example, dispositional envy and hostility were found to be separate constructs in the study by Sundie, Ward, Beal, Chin, and Geiger-Oneto (2009), where, however, hostility was operationalized as injustice, resentment and anger, thus resembling resentment rather than hostility. Moreover, the envy operationalization made by Feather et al. (2013), who conceived hostile envy as a blend of envy with resentment and anger, omitted the hostile aspect of envy and just included the terms "envy" and "jealousy".

This hostile envy was moderately associated with resentment, which, in turn, was highly related to inferiority. In a similar way, Smith, Parrott, Ozer, and Moniz (1994) attributed the hostile aspect of envy to objective injustice concerns, otherwise, in absence of objective unfairness, the resulting feeling would be non-hostile and merely depressive, as focused on inferiority. Indeed, in a study in which participants provided accounts of strong envious experiences and made explicit their beliefs about the deservingness of the other's advantage, the sense of inferiority related to one's lacking position, and the depressive and hostile feelings related to the situation, it was found that: inferiority, but not hostility, predicted depressive feelings; objective unfairness, but not inferiority, predicted hostile feelings; and subjective injustice predicted both kinds of feelings (Smith et al., 1994). Thus, it was proposed that the inferiority component of envy cannot explain the full range of feelings related to envy, whereas subjective unfairness would be an inherent part of envy, being linked to both feelings of inferiority and hostility. Feelings of injustice are a core component of resentment, which has been proposed by some scholars as a defining feature of envy (Smith & Kim, 2007). Differently, Miceli and Castelfranchi (2007) excluded subjective unfairness from the envious experience, stating that perceived injustice would lead to resentment rather than to envy, whose ill will facet is different from resentment. Coherently, the elicitation of anger in envy would not belong to the anger- resentment-sense of injustice pattern, as advanced by some authors (e.g., Smith et al., 1994), but would rather be the mere, not resentful, anger related to external attributions for one's inferiority, an outer focus that would motivate to the hostile ill will component of envy (Miceli & Castelfranchi, 2007).

A distinction between envy and resentment was supported by the two emotions resulting separate constructs (Cohen-Charash, 2009; Feather & Nairn, 2005; Feather et al., 2013; Sundie et al., 2009). Although the resentful feeling has been proposed as one of the

prevalent features of envy, it has been highlighted that it is hardly distinguishable from resentment proper (Miceli & Castelfranchi, 2007; Smith & Kim, 2007).

The sense of inferiority that characterizes envy as an emotion resulting from an unfavorable social comparison is included in almost all envy conceptual and operational definitions (e.g., Hill, Del Priore, & Vaughan, 2011; Miceli & Castelfranchi, 2007; Schaubroek & Lam, 2004; Smith & Kim, 2007; van de Ven et al., 2009; Vecchio, 1995, 1999), although some authors (Miceli & Castelfranchi, 2007; Smith et al., 1994) consider inferiority as necessary but not sufficient for the envious experience to take place. Indeed, under potentially envy-eliciting conditions in which an unfavorable comparison is present, sense of inferiority, greed, and admiration may raise, what would not be envy yet (Miceli and Castelfranchi, 2007). Moreover, feelings of inferiority were found to be involved in both benign and malicious envy (van de Ven et al., 2009), however, inferiority was found to be more strongly associated with malicious than with benign envy (Feather et al., 2013; van de Ven et al., 2014). Indeed, the ill will component of envy would be closely related to the helplessness that goes along with sense of inferiority in envy (Miceli & Castelfranchi, 2007), since hostile, anger-related emotions may be evoked as a defensive strategy against one's inferiority (Smith & Kim, 2007).

1.3. Eliciting Components of Envy

With regard to the eliciting components of envy, greater agreement exists among scholars in that envy arises from an unfavorable social comparison in which the advantaged person is perceived as similar and the comparison domain is self-relevant (Baumel & Berant, 2015; Salovey & Rodin, 1984; Schaubroeck & Lam, 2004; Silver & Sabini, 1978; Smith & Kim, 2007; Tesser & Collins, 1998). With respect to perceived similarity with the comparison target, Schaubroeck and Lam (2004) investigated promotion envy in the

workplace setting among candidates that had been rejected for promotion. Rejectees who had perceived the promotee as more similar to themselves reported the strongest promotion envy. As to the self-relevance of the comparison domain, in an experiment by Salovey and Rodin (1984), participants received either positive or negative feedback on a career aptitude test, and were then shown the feedback received by another person on either the same or a different career domain. Envy was reported only in the negative feedback condition, when participants compared themselves with the successful performance of the other on a career domain that was self-definitionally relevant to them.

Some authors have also proposed the deservingness of the other's advantage and perceived control over the situation as distinguishing contextual components of the envious feeling (van de Ven, Zeelenberg, & Pieters, 2012). While individual appraisals of deservingness and control did not affect the intensity of envy, they shaped the kind of resulting envy. In particular, malicious envy arouse when the other's advantage was perceived as undeserved, whereas benign envy resulted from situations appraised as both deserved and potentially changeable.

The perception of deservingness is related to resentment, as the envied person's advantage is perceived as undeserved and thus unfair. Nevertheless, some scholars exclude perceived unfairness as a contextual component of envy, since the ill will implied by envy would arise from the helplessness implied in being inferior to the advantaged person, rather than from a resentful feeling (Miceli & Castelfranchi, 2007).

1.4. Correlates of Envy

The emphasis on the negative aspects of envy that has been dominant in envy research led to a focus on negative outcomes. Indeed, envy has been almost uniquely associated to negative consequences at the individual and interpersonal level (Smith & Kim, 2007).

At the individual level, dispositional envy was associated with lower self-esteem, life satisfaction, happiness and gratitude, and linked to higher negative affect, neuroticism, materialism, and psychopathology (e.g., Belk, 1984; Carrasco et al., 2004; Cohen-Charash, 2009; Froh, Emmons, Card, Bono, & Wilson, 2011; Gold, 1996; McCullough, Emmons, & Tsang, 2002; McCullough, Tsang, & Emmons, 2004; Milfont & Gouveia, 2009; Smith et al., 1999; Vecchio, 2000, 2005). At the interpersonal level, an envious inclination was associated with lower relatedness, social integration, and cooperation, and higher indirect aggression and counterproductive work behaviors (e.g., Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Froh et al., 2011; Hofer & Busch, 2011; Parks, Rumble & Posey, 2002). Within the situational approach, the inclination to feel envy towards colleagues and team members was related to adverse individual, group, and organizational variables, such as lower job autonomy and satisfaction, and higher competitiveness and social loafing (e.g., Duffy & Shaw, 2000; Kim, O'Neill, & Cho, 2010; Vecchio, 1995, 2000, 2005). The episodic-specific manifestation of envy was also found to be associated with negative emotional and behavioral correlates, such as anxiety, depression and hostility, and blameworthy work behaviors (Cohen-Charash, 2009). The associations with both emotional reactions and reprehensible behaviors towards the advantaged comparison target at work were generally stronger for episodic envy compared with dispositional envy (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007).

Typical harmful behaviors that would be elicited by envy are related to derogation of the envied person's superiority, such as spreading malicious gossip about the rival (Wert & Salovey, 2004). Recently, attachment styles have been proposed as effective predictors of the individuals' tendency to derogate other people who are succeeding in a domain that is relevant to self-worth (Baumel & Berant, 2015). Other indirect aggressive behaviors towards the superior target include sabotage (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007), or even self-damaging choices, with envious individuals being willing to compromise

their own outcomes in order to degrade the other and his/her advantage (Zizzo & Osvald, 2001). Nevertheless, next to such harmful action tendencies, also positive correlates have been found for envy. Interestingly, not only benign envy, but also dispositional and episodic malicious envy were found to be associated with the motivation to improve one's position (Cohen-Charash, 2009; Schaubroek & Lam, 2004; van de Ven et al., 2011).

1.5. Objective of the Dissertation

The application of different approaches to the study of envy and the differences in the theoretical and working definitions of envy across studies have produced a fragmentary representation and understanding of the envious emotion. Indeed, for example, previous inconsistency across studies on the association between envy and *schadenfreude* is attributable to differences in how envy had been operationalized (van de Ven et al., 2014). Similarly, benign and malicious envy have been found to be negatively (van de Ven et al. 2009, 2012, 2014) or positively correlated with each other (Feather et al., 2013; van de Ven et al., 2014) depending on the measure used.

A shared definition of envy is needed in order to compare and accumulate findings from different studies and thereby reach a deeper understanding of this complex emotion and its impact on individuals' wellbeing and interactions. Although enough evidence exists to claim for the powerful role on envy on individuals' wellbeing, ultimately identifying the core features of envy might help establishing which components of envy better predict subsequent maladjustment and blameworthy behaviors, and which others motivate individuals to self-enhancement.

Responding to a recent call for more research on envy, in order to clarify what envy is and what envy does (van de Ven et al., 2014), the present dissertation aims to clarify the inherent nature of the construct of envy through the integration of findings from three

independent studies. To achieve this goal, we identified two questions that address important issues. The first two studies are meant to clarify *what are the core features of envy*, whereas the third study is planned to explore *the mechanism through which envy affects individuals' social adjustment and psychological wellbeing*. We focused on proper or malicious envy, and investigated it from both a dispositional and an episodic perspective.

Study 1 (Chapter 2) aimed at identifying what are the core features of dispositional envy, whereas Study 2 (Chapter 3) investigated whether the dimensionality of dispositional envy can be also applied to episodic envy, as elicited by a scenario-based experiment. Finally, in Study 3 (Chapter 4) a conceptual model on the relationship between envy and two subjective indicators of wellbeing was tested using structural equation modeling (SEM).

CHAPTER 2

Study 1: What are the Core Features of Dispositional Envy?

2.1. Introduction

A variety of conceptual and working definitions of envy have been proposed by scholars. In most theoretical definitions, malicious envy includes feelings of both inferiority and hostile ill will (Gold, 1996; Miceli & Castelfranchi, 2009; Smith & Kim, 2007; Smith et al., 1999; van de Ven et al., 2009). Other conceptions either add resentment as an inherent part of envy (Smith & Kim, 2007), or conceive envious hostility as resentment and propose it as the defining feature of hostile envy (Feather et al., 2013). Finally, other scholars focus on envy as covetousness (Hareli & Weiner, 2002). Nevertheless, almost all definitions emphasize the painful feeling that typically arises from an unfavorable social comparison, with some authors proposing to conceive envy simply as pain (Tai et al., 2011). In a similar way, van de Ven et al. (2014) stated that envy is basically the pain at the good fortune of others, with a closer inspection revealing two kinds of envy, namely malicious and benign envy, which both share the painful inferiority component of general envy.

Although a shared concept of envy as pain emerges from the literature, the envy configuration is not well defined yet. Different conceptions focused on different inherent and contextual components of envy, what led to the lack of an unambiguous theoretical definition of the envy construct. Most of all, a multiplicity of operative definitions of envy has been applied in studies, producing a fragmentary representation of the envious emotion across measures. Next to this multifaceted picture of envy, the recent increased interest in the study of envy has not been accompanied by a parallel concern for the accuracy of self-reported envy measurement, with multiple instruments that often do not reflect the theoretical definition

adopted by authors (e.g. Feather et al., 2013; Smith et al., 1999). The broad application of measures that do not refer to the same emotion, but rather reflect a wide range of emotional experiences, cognitions, motives, and behaviors variously attributed to the envious feeling, inevitably hinders a deep understanding of the envious emotion, since a meaningful comparison of findings across studies is prevented.

van de Ven et al. (2014) proposed to distinguish between three types of operationalizations in envy measurement, namely general envy, envy plus coveting, and envy plus ill will. Indeed, a number of studies used single-item measures of general envy by asking participants to rate their amount of episodic envy or social comparison jealousy (e.g., Crusius & Mussweiler, 2012; Feather et al., 2013; Lieblich, 1971; Salovey & Rodin, 1988; Schurtz et al., 2009; Sundie et al., 2009; van de Ven et al., 2014). Other authors assessed envy with measures referring to general envy or jealousy and longing for what another has (e.g., Feather & Nairn, 2005; Feather & Sherman, 2002; Hareli & Weiner, 2002; Moran &Schweitzer, 2008). An envy plus ill will category seems, however, to be reductive. Indeed, some operationalizations embrace a mixture of pain and frustration for one's inferior position, longing, and anger and hostility (e.g., Belk, 1984; Gold, 1996; van Dijk et al., 2006), with some authors also including resentment (e.g., Cohen-Charash, 2009; Hill et al., 2011; Parrott & Smith, 1993; Piskorz & Piskorz, 2009), and others substituting the angry, hostile facet with resentment and unfairness (e.g., Dvash, Gilam, Ben-Ze'ev, Hendler, & Shamay-Tsoory, 2010; Haslam & Bornstein, 1996; Shamay-Tsoory et al., 2009). These operationalizations seem to be acceptably comprehensive, assuming that most working definitions do not tap the full range of feelings that characterize the envious emotion.

Several other partial operationalizations of envy have been used that do not fit any of the proposed categories. For example, some authors operationalized envy as frustration and inferiority (Vecchio, 1995, 1999), or referred only to frustration, inferiority, and resentment

(Schaubroek & Lam, 2004), and other scholars did not include sense of inferiority in their operationalization of envy (e.g., Carrasco et al., 2004; Feather & Nairn, 2005; Feather & Sherman, 2002; Feather et al., 2013).

Due to a scarce integration between approaches and between studies, multiple self-report tools have been developed for measuring envy as either a dispositional, situational, or episodic emotion, most of which have been used in single studies. The major multi-item envy measures that are, at least to our knowledge, available in the literature are described in detail below, and organized according to the approach used in the study of envy.

2.1.1. Self-Report Measures of Envy as a Stable Dispositional Tendency.

Dispositional envy has been exclusively assessed through retrospective self-reports that ask respondents to estimate their envy and related feelings towards unspecified others in everyday life, across multiple situations.

Dispositional Envy Scale. The Dispositional Envy Scale (DES; Smith et al., 1999) is the most used measure for the assessment of dispositional envy. This retrospective self-report tool asks respondents to recall and rate the degree of envy usually felt in their life. The scale is composed by eight items rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Four items assess the frequency and intensity of envious feelings (e.g., "I feel envy everyday"; "Feelings of envy constantly torment me"), whereas the remaining four items describe the affective components of inferiority (e.g., "The bitter truth is that I generally feel inferior to others"), frustration (i.e., "It is so frustrating to see some people succeed so easily"), and subjective injustice and resentment (e.g., "It somehow doesn't seem fair that some people seem to have all the talent"). A bi-factor solution showed the best fit in confirmatory factor analysis, indicating that the majority of variance was explained by a general factor, consistently with the hypothesis of unidimensionality of the envy construct.

Nevertheless, error covariances among three items (i.e., “It is so frustrating to see some people succeed so easily”, “It somehow doesn’t seem fair that some people seem to have all the talent”, and “Frankly, the success of my neighbors makes me resent them”) was better captured by a secondary factor that seems to reflect a resentment component untapped by the remaining five items. A one-factor structure also emerged in the Brazilian validation study (Milfont & Gouveia, 2009). Yet, also in this study the co-variation among some items (i.e., “The bitter truth is that I generally feel inferior to others” and “I am troubled by feelings of inadequacy”; “It somehow doesn’t seem fair that some people seem to have all the talent” and “Frankly, the success of my neighbors makes me resent them”) would be better captured by secondary factors. In the original validation study, Cronbach’s alpha coefficients ranged between .83 and .86, and test-retest reliability coefficient over a 2-week period was .80. Similarly, in other studies (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Froh et al., 2011; Hofer & Busch, 2011; James, Kavanagh, Jonason, Chonody, & Scrutton, 2014; Krizan & Johar, 2012; McCullough et al., 2002, 2004; Milfont & Gouveia, 2009; Sundie et al., 2009), Cronbach’s alpha ranged from .79 to .93. The criterion-related construct validity of the DES was supported by various empirical studies, in which dispositional envy was found to be negatively associated to self-esteem, life satisfaction, happiness, gratitude, relatedness, social integration, and cooperation (Froh et al., 2011; Hofer & Busch, 2011; McCullough et al., 2002, 2004; Milfont & Gouveia, 2009; Parks et al., 2002; Smith et al., 1999), and positively related to negative affect, neuroticism, materialism, harmful behavioral intentions, motivation to improve one’s position, workplace negative atmosphere, episodic envy, perceived unfairness, and comparison orientation (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Froh et al., 2011; Smith et al., 1999; Zeelenberg & Pieters, 2007). Most items, as well as the full scale, were found to be affected by social desirability, as

indicated by moderate correlations with social desirability measures (Cohen-Charash & Mueller, 2007; Smith et al., 1999).

York Enviousness Scale. Gold (1996) developed and validated the York Enviousness Scale (YES) to measure envy as a stable personality trait. It consists of twenty items, rated on a 7–point scale from 1 (*disagree strongly*) to 7 (*agree strongly*), describing a set of cognitions characterized by pain (e.g., "It pains me to think of the success of my friends"), discontent with one's relative position (e.g., "I wouldn't want to trade places with anyone" - reversed item), longing (e.g., "I think a lot about what others have that I would like"), anger (e.g., "I feel angry when others succeed"), hostility (e.g., "I dislike seeing others enjoying themselves"), and ill will (e.g., "It makes me feel good to "rain on someone's parade"). With the intent of mitigating socially desirable responses, Gold included familiar idioms and selected the items with the lowest correlations with social desirability. Cronbach's alpha ranged between .89 and .91and test-retest correlation over a 2-month period was .75. Gold describes the YES as an essentially unidimensional measure since principal component analyses conducted on two independent samples yielded a first component explaining between 34 and 37% of the total variance, while the remaining three components accounted for no more than 9% of the total variance. Evidence of construct validity was provided by findings of positive correlations between the YES and measures of trait anger, hostility, inferiority, materialism, jealousy, and psychopathology. No or low negative correlations were found between the YES and social desirability, indicating that the scale is minimally affected by a socially desirable response bias.

Belk's materialism scale. Belk (1984) developed a self-report questionnaire to measure materialism that includes a subscale for the assessment of envy, described as a materialistic trait associated to undesirable as well as positive outcomes. This factor-analytically derived scale includes eight items (rated on a 5-point agreement scale) describing

concern (e.g., “I am bothered when I see people who buy anything they want”), discontent with one’s relative position (e.g., “There are certain people I would like to trade places with”), longing (e.g., “I don’t know anyone whose spouse or steady date I would like to have as my own” - reversed item), hostility (e.g., “People who are very wealthy often feel that they are too good to talk to average people”), and *schadenfreude* (e.g., “When Hollywood stars or prominent politicians have things stolen from them I really feel sorry for them”). Cronbach’s alpha ranged between .64 and .80 (Belk, 1984; Gold, 1996), and test-retest reliability coefficient over a 2-week interval was .70. Some evidence of convergent and discriminant validity was provided by a multitrait-multimethod matrix indicating associations between self-reported envy and alternative methods of behavioral (i.e., the number of magazines about famous people read fairly regularly) and photographic (i.e., the proportion of photographs provided by subjects involving opposite sex unrelated adults and someone else’s expensive possessions) indexes. Further evidence of criterion-related validity could be inferred from negative correlations between the envy subscale and two single item measures of happiness in life (Belk, 1984), and from participants’ responses to sentence completion stems dealing with purchase and consumption experiences that were considered consistent with scores on envy (Belk, 1985). In a modified version of Belk’s materialism scale (Ger & Belk, 1990), the envy subscale comprises five items, with Cronbach’s alphas between .42 and .52. As partial evidence of criterion-related validity, the new envy scale was positively correlated with the number of items seen as necessities (Ger & Belk, 1990), and negatively with dispositional gratitude ratings (McCullough et al., 2002).

Children Envy Questionnaire. Carrasco et al. (2004) validated a questionnaire for the assessment of envy in children (aged 10-16 years), which consists of twenty-one items rated on a 5-point scale from 1 (*completely agree*) to 5 (*completely disagree*). Exploratory and confirmatory factor analyses supported a two-factor structure, with five items in common

between factors. The envious reaction scale comprises nineteen items describing painful feelings at others' success (e.g., "I feel sad when I realize that other have things that I would like to have"), anger (e.g., "I get angry when someone beats me in a game"), hostile degradation of others (e.g., "I speak ill of people who have things I would like to have"), and feelings of subjective injustice (e.g., "When someone wins a game I tend to think it is unfair"); the wish for others' belonging scale includes seven items describing the desire for other children's qualities or belongings (e.g., "I would like to receive the gifts that some of my friends receive"). Cronbach's alphas ranged between .77 and .96 for the envious reaction scale and between .73 and .85 for the wish for others' belonging scale (Carrasco et al., 2004; González, Carrasco, & Del Barrio, 2011), and test-retest reliability was in the .71-.74 range (Carrasco et al., 2004). As evidence of criterion validity, both subscales were weakly to moderately correlated with measures of aggression, anxiety, and anger, and the envious reaction scale was also associated with depression (Carrasco et al., 2004). Nevertheless, in a subsequent study, both subscales were positively, weakly associated with anger only, whereas the wish for others' belonging scale was also positively and modestly correlated with trait anxiety in boys and pre-adolescents (González et al., 2011). As further evidence of validity, in a principal component analysis (with Varimax rotation) performed using negative emotions (i.e., depression, dysphoria, anxiety, anger, and negative self-esteem) and envy scale scores as variables, envy loaded on a separate component, thus emerging as an independent emotion, clearly distinct from the remaining negative emotions (González et al., 2011).

2.1.2. Self-Report Measures of Envy as a Stable Tendency in Specific Contexts

Situational envy measures ask respondents to indicate their feelings of envy towards general others in a specific, immediate environment (e.g., work context or team).

Vecchio's workplace envy scale. Vecchio (1995; 1999) developed and validated a 5-item self-report measure to assess situational envy in the work setting. Different response

formats have been used, with items being rated either on a 7- or a 5-point agreement-disagreement scale. The scale taps the cognitive and affective component of envy: sense of inferiority (e.g., "Most of my coworkers have it better than I do"), helplessness (e.g., "I don't imagine I'll ever have a job as good as some that I've seen") and discontent with one's own position relative to unspecified others (i.e., "It is somewhat annoying to see others have all the luck in getting the best assignments). Two principal axis factor analyses were conducted including the workplace envy items jointly with six items on workplace jealousy. In both cases, a two-factor solution supported the unidimensionality of the scale (Vecchio, 2000), and a confirmatory factor analysis showed that the five envy items describe a single latent construct (Vecchio, 2005). Cronbach's alphas ranged from .71 (Vecchio, 2005) to .75 (Vecchio, 2000). In other studies (Cohen-Charash, 2009; Duffy et al., 2012; Kim et al., 2010), internal consistency reliabilities ranged from .69 to .89. The validity of the workplace envy scale was supported by the expected pattern of associations with individual, organizational and outcome variables (e.g., global self-esteem, job autonomy and satisfaction, and competitiveness) (Kim et al., 2010; Vecchio, 1995, 2000, 2005). An adaptation of Vecchio's items was used by Duffy and Shaw (2000) to assess feelings of envy towards in-group members (e.g., "Most of my team members have it better than I do"). Cronbach's alpha was .75, and evidence of criterion-related validity was provided by correlations with a number of group (i.e., lower group cohesiveness and potency, and higher social loafing) and individual variables (i.e., lower academic achievement and self-efficacy, and having an external locus of control).

Schaubroeck's and Lam's envy scale. Schaubroeck and Lam (2004) adapted some items from Smith et al. (1999) for assessing promotion envy in the workplace setting. The scale is composed by four items, rated on a 5-point agreement scale, expressing the frequency of experiencing envy (i.e., "Feelings of envy constantly torment me") and intensity of envy

towards promotees, described as inferiority (i.e., "I generally feel inferior to his/her success") and resentment (e.g., "Frankly, his/her success makes me resent him/her"). Respondents were candidates who had been rejected for promotion. A confirmatory factor analysis supported a single-factor structure, with a Cronbach's alpha of .88. As evidence of discriminant validity, rejectees who had reported high promotion expectations and had perceived the promotee as more similar to themselves reported the strongest promotion envy. Moreover, higher envy ratings predicted a lower post-rejection likeability of the promotee, and higher perceived reward injustice and supervisor ratings of post-rejection job performance. Fischer, Kasternmüller, Frey, and Peus (2009) used three items (rated on a 11-point scale with anchors of *don't agree* and *strongly agree*) from Schaubroeck and Lam (2004), obtaining a Cronbach's alpha of .81. They found that upward social comparisons with colleagues were associated to stronger envy than downward social comparisons, supporting the discriminant validity of this scale.

2.1.3. Self-Reports Measures of Envy as an Episodic Emotion

Episodic envy measures assess the envious feelings experienced towards a particular person within a specific social-comparison situation. Within this category, a distinction can be made based on how envy is elicited in order to be measurable. Episodic primes, scenarios, and experimental conditions have been designed in a number of studies (e.g., Moran and Schweitzer, 2008; van de Ven et al., 2012; Gino & Pierce, 2009). The description below is not intended to be exhaustive of all the tools available for measuring episodic envy, but refers to those multi-item measures that have been used with more frequency. In fact, a number of reviewed episodic envy measures either were used in only one study, or contained a narrow representation of the maliciously envious emotion that was limited to general envy or envy plus covetousness (e.g., Feather & Nairn, 2005; Feather & Sherman, 2002; Feather et al., 2013; Hareli & Weiner, 2002; Moran & Schweitzer, 2008; Smith et al., 1996).

Cohen-Charash's episodic envy scale. Cohen-Charash (2009) validated a scale for the assessment of episodic envy. To elicit episodic envy, the respondent is asked to recall and describe a past workplace envy experience, and specific instructions are provided which include a definition of envy. Referring to the described incident, respondents rate (on a 9-point scale with anchors of *not characteristic at all* and *extremely characteristic*) nine items composing two factor-analytically derived scales: a 6-item feeling component describing anger-related feelings (e.g., "hatred", "rancor", and "gall"), and a 4-item social comparison component expressing inferiority (e.g., "Feeling lacking some of the things X has") and longing (e.g., "A desire to have what X has"). Interestingly, the item "envious" loaded on both component, thus suggesting that the comparison component also taps the emotional content of envy. Cronbach's alphas ranged from .87 to .89 for the feeling component, and from .72 to .83 for the comparison component. Cronbach's alpha for the total scale was .81 in a U.S. sample (Cohen-Charash & Mueller, 2007), and ranged between .73 and .81 in Pakistani samples (Khan, Peretti, & Qurantulain, 2009; Khan, Qurantulain, Sultana, & Peretti, 2009). Moreover, principal components analyses conducted on the Pakistani adaptation revealed that five of the seven Pakistani items loaded on a single component (Khan et al., 2009; Khan, Qurantulain, et al., 2009). As evidence of discriminant validity, alternative confirmatory factor models were tested that supported the differentiation of episodic envy from both objective and subjective unfairness, competition, and admiration, and of the feeling component of envy from anxiety, depression, negative mood, and hostility towards the advantaged (Cohen-Charash, 2009). Predictive validity was supported by episodic envy scores explaining emotional and behavioral correlates of envy above and beyond dispositional envy (Cohen-Charash, 2009). The episodic envy scale was found to be affected by social desirability (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007).

Parrott's and Smith's envy scale. Parrott and Smith (1993) manipulated envy by creating two vignettes in which the protagonist (i.e., low-envy condition) or a rival (i.e., high-envy condition) succeeded on domains that were potentially self-relevant and evocative of envy among college-aged subjects. Following each vignette, subjects responded thirty-four items describing features of envy and jealousy. Envy-related items expressed anger (e.g., "Would feel enraged"), pain (e.g., "Would feel depressed"), discontent for one's relative position (e.g., "Would be dissatisfied with myself"), longing (e.g., "Would be longing for what the other has"), inferiority (e.g., "Would feel inferior"), and unfairness (e.g., "Would feel unfairly treated by life"). Items were rated on a 9-point scale with anchors of *not at all* and *extremely*. Factorial validity was supported by principal components analysis, which produced three interpretable components, namely jealousy, envy, and social disapproval. As evidence of discriminant validity, scores on the envy component were found to be significantly higher in the high-envy than in the low-envy condition. As evidence of criterion-related validity, ratings of the item containing the word "envy" significantly correlated with all the three component scores. In a taxometric analysis of emotion episodes, aimed at establishing the discreteness of the emotions of envy and jealousy, Haslam and Bornstein (1996) used eighteen of the items developed by Parrott and Smith (1993). Nine items were selected for each emotion, and three new items describing self-rated envy, jealousy and emotional intensity were added. Participants were asked to recall a personal episode in which they had felt hostile, resentful, or angry towards a rival, and then rated items on a 9-point scale from 1 (*not at all characteristic/intense*) to 9 (*very characteristic/extremely intense*). A principal component analysis supported the scale validity, since two components emerged, that almost perfectly reflected the hypothesized distinction between envy and jealousy. The envy component reflects sense of inferiority and discontent for one's relative position, longing, motivation to improve oneself, feelings of shame and guilt and concern for

social disapproval. Other authors have also integrated some of the items developed by Parrott and Smith into their ad hoc developed tools (e.g., Hill et al., 2011; Piskorz & Piskorz, 2009).

Hareli's and Weiner's envy scale. In their study on *schadenfreude*, Hareli and Weiner (2002) asked participants to recall and describe an episode in which they felt pleasure at another's misfortune, and then responded a series of questions. Envy was assessed with four items rated on a 7-point scale from 1 (*not at all*) to 7 (*very much*). The items referred to envy, jealousy, longing, and wish to be like the other. Cronbach's alpha was .85. As evidence of validity, envy ratings were positively correlated with feelings of competition, attribution of a bad character to the other, and perception of the described misfortune as an important one, and were significantly higher under envy than under no-envy conditions, in a subsequent, scenario-based experiment.

van de Ven et al.'s benign and malicious envy scale. Van de Ven et al. (2009) validated a short scale for assessing benign and malicious envy. In two different studies, American and Spanish subjects were asked to describe their experiences of envy, and then answered questions about the experiential content of each described episode. Items described the distinctive features of benign and malicious envy, and were rated on a 9– or a 3-point scale. The benign envy scale includes four items describing pleasure, inspiration, motivation to improve and complimenting behavior toward the superior other, while the malicious envy scale describes frustration and ill willed feelings (e.g., "I hoped that the person whom I envied would fail something") and behaviors (e.g., "I complained to someone else about the person whom I envied"). The scale factorial validity was supported by results of latent class analyses, which provided a two-class solution in both cultures. Further evidence of validity was provided by Polman and Ruttan (2012), who used five items by van de Ven et al. (2009) to investigate the influence of envy on moral hypocrisy (i.e., the discrepancy between one's moral behavior and moral behavior expected by others). Cronbach's alphas for this 5-item

scale were .63 and above .75 in two different studies. The authors activated the affective, cognitive and behavioral states associated with envy using an episodic prime, and then presented participants with moral dilemmas. Consistent with initial hypotheses, participants in the envy condition increased the standards of moral behavior for themselves and diminished those for others when responding to moral dilemmas, and, when asked how much money they would give to charity, they donated more than they expected others to donate, thus supporting the scale predictive validity. More recently, Crusius and Lange (2014) developed a 16-item scale based on van de Ven et al. (2009) to assess benign and malicious envy. The benign envy scale describes admiration (e.g., "I admired the person"), inspiration (e.g., "I felt inspired to also attain the object"), and longing (e.g., "I desired the object"), with a Cronbach's alpha coefficient of .60. The malicious envy scale described ill will (e.g., "I wished that the other person would no longer have the object"), and showed a Cronbach's alpha of .87. Items were rated on a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*does apply very much*).

Beside the detected differences in envy representation across the reviewed measures, a common concept of malicious envy can be easily identified. Indeed, items referring to longing, which is a necessary condition for envy to occur (Smith & Kim, 2007), are included in several dispositional (Belk, 1984; Carrasco et al., 2004; Gold, 1996) and episodic (Cohen-Charash, 2009; Dvash et al., 2010; Feather & Sherman, 2002; Feather & Nairn, 2005; Haslam & Bornstein, 1996; Hill et al., 2011; Moran & Schweitzer, 2008; Parrott & Smith, 1993; Piskorz & Piskorz 2009; Shamay-Tsoory et al., 2009; van Dijk et al., 2006) envy scales. Likewise, sense of inferiority and discontent for one's relative position is described in most dispositional (Belk, 1984; Gold, 1996; Smith et al., 1999), situational (Schaubroeck & Lam, 2004; Vecchio, 1995, 1999) and episodic envy measures (Cohen-Charash, 2009; Haslam & Bornstein, 1996; Hill et al., 2011; Parrott & Smith, 1993; Piskorz & Piskorz 2009; van Dijk et

al., 2006). Anger, hostility, and ill will are mentioned in most dispositional (Belk, 1984; Carrasco et al., 2004; Gold, 1996) and episodic envy tools (Cohen-Charash, 2009; Hill et al., 2011; Parrott & Smith, 1993; Piskorz & Piskorz, 2009; van de Ven et al., 2009; van Dijk et al., 2006). Finally, resentment and sense of unfairness also are often considered as part of dispositional (Carrasco et al., 2004; Smith et al., 1999), situational (Schaubroeck & Lam, 2004), and episodic envy (Cohen-Charash, 2009; Dvash et al., 2010; Hill et al., 2011; Parrott & Smith, 1993; Piskorz & Piskorz, 2009; Shamay-Tsoory, 2009).

Arguably, longing for what others have, sense of inferiority, frustration and discontent for one's relative position, anger and hostile ill will, and resentment are the core features of envy, being described in most envy measures, regardless of the perspective adopted by authors. Thus, two class of negative feelings are essentially detectable in envy, attributable to either an inner-directed or an outer-directed reaction to a painful unfavorable social comparison.

Sense of inferiority and the related frustration for one's condition is the defining feature of envy that is to a greater extent focused on the individual himself. The painful nature of envy seems to lie in that envy implies an admission of inferiority which causes a loss of self-esteem (Miceli & Castelfranchi, 2007), with the longing facet of envy being intrinsic to sense of inferiority, as the frustrated desire for being in a different position. Next to this painful self-confession, we believe that another core ingredient of envy is represented by the painful feelings of helplessness against this inferior condition, as proposed by Miceli and Castelfranchi (2007). However, one's painful admission of inferiority is per se not sufficient to raise envy (Miceli & Catselfranchi, 2007; Smith & Kim, 2007). In disagreement with some authors (e.g., Hareli & Weiner, 2002), but in agreement with others (e.g., Miceli & Castelfranchi, 2007; Smith et al., 1999) we propose ill will as a core feature of envy, as the envious person's ultimate wish is that the envied suffers some failure. Ill will feelings in envy

would not be immediately attributable to a stable hostile disposition but rather are closely related to the helplessness involved in envy, as a defensive strategy against one's inferiority aimed at restore equality and protecting one's self-esteem (Miceli & Castelfranchi, 2007; Smith & Kim, 2007). Thus, we share Smith and Kim's (2007) conception that recognition of one's inferiority is possibly the painful feeling inherent to envy, while hostility would act as a drive for action.

Admitting inferiority and ill will as the core feature of envy, we nonetheless propose to omit resentment, and its related subjective injustice, as an inherent part of envy. Indeed, we believe that the sense of unfairness that has been consistently associated to envy is related to the subjective injustice of one's inferiority rather than to the cognitive appraisal of the deservingness of the other's advantage. Thus, as other scholars also state (Miceli & Castelfranchi, 2007), perceived injustice of the other's superiority is not sufficient to motivate ill will against the superior other and is likely to lead to resentment rather than to envy. In support to the proposed distinction between envy and resentment, in some studies (Feather & Nairn, 2005; Feather et al., 2013) envy and resentment loaded on separate components.

Altogether, we agree with recent views that envy is essentially pain (Tai et al., 2012; van de Ven et al., 2014), but we believe that the pain implied by envy can be disentangled into inner-directed and outer-directed negative feelings. As remarked by Miceli and Castelfranchi (2007), in the search for a causal attribution of one's disadvantaged relative position, the focus on one's lacking condition as the cause of one's inferiority would promote a depressive reaction. On the other hand, when the responsibility for one's inferior position is attributed to the other's advantage, feelings of ill will are the most likely response. Similar to this distinction between an inner-directed and an outer-directed focus in envy, in their study on the envy-*schadenfreude* link, van de Ven et al. (2014) assessed benign and malicious envy by asking participants the extent to which they had experienced "the envy that focuses most

on yourself and that you miss out on something that you would like to have" and "the envy that focuses most on the other person and his or her advantage", respectively (Van de Ven et al., 2014, p. 12). Consistent with these operationalizations of malicious and benign envy, a series of experiments on early cognitive processing (Crusius & Lange, 2014) showed that the attentional focus of malicious envy is on the envied person, while in benign envy attention is biased towards means to improve one's relative position. Nonetheless, the inner-directed component that we propose as core feature of envy is distinct from benign envy because of its inherent helplessness, as other authors suggest (Miceli & Castelfranchi, 2007). Indeed, the helplessness against one's inferior relative position implies a threat to self-esteem rather than a challenge, as would be the case in benign envy (Miceli & Castelfranchi, 2007).

We propose to use a factor analytic approach to identify the core features of malicious envy and finally clarify the envy configuration. Indeed, the feelings, motivations, and behavioral manifestations that are inherent to the envious experience would be elucidated by factor analyses performed on all the items that have been developed and used to measure envy until now. Although scholars agree in that envy is a composite emotion, its dimensionality has not been fully understood yet. In most cases, the internal dimensionality of the applied measure was not tested (e.g., Hareli & Weiner, 2002; Hill et al., 2011; Piskorz & Piskorz, 2009; van Dijk et al., 2006), or some researchers tested the factorial validity of measures without putting a strong emphasis on the methodological issues (e.g., Gold, 1996). As a result, several authors (i.e., Gold, 1996; Milfont & Gouveia, 2009; Schaubroeck & Lam, 2004; Smith et al., 1999; Vecchio, 2000, 2005) concluded that dispositional envy is a unidimensional construct, although results from factor analyses (e.g., Milfont & Gouveia, 2009) or low internal consistency coefficients (e.g., Ger & Belk, 1990) did not always support a single-factor model. Similarly, episodic envy has been found to be alternatively a two- (Cohen-Charash, 2009) or a one-factor construct (e.g., Gino & Pierce, 2009; Smith et al.,

1996). Measurement may thus represent a starting point to better understand the construct of envy, as a greater accuracy in envy measurement will inevitably enhance the amount of understanding of this complex, multidimensional emotion.

An issue that cannot be ignored when adopting a measurement approach to the study of envy is its reprehensible nature. Indeed, parallel to the lack of an unambiguous definition of envy, the socially undesirable nature of envy makes its measurement a problem of recurring interest, since individuals are reluctant to publicly admit their envious feelings (Miceli & Castelfranchi, 2007; Smith & Kim, 2007). This might lead to underreporting bias and possible underestimation of the strength of the associations between envy and outcome variables. However, the socially undesirable and concealed nature of envy makes self-report measures the most used for envy assessment, since anonymous questionnaires are expected to provide more veridical responses, when the topic is a socially sensitive one. The explicit expression of envy is discouraged by social norms, and, at the same time, the effortful strategies that individuals adopt to cope with their envious feelings make envy protean and may even transform them into more acceptable emotions (e.g., sense of injustice; Smith & Kim, 2007). This makes other assessment methodologies, such as interviews and behavioral observations, hardly to implement to measure envy.

Emotional awareness is another potential challenge to the assessment of envy that has been identified by some authors, as individuals often do not recognize their own envy (Smith & Kim, 2007). Since envy is highly threatening to self-worth (Salovey & Rodin, 1991), people may deny feeling it, and possibly mask or confound it with unfairness (Cohen-Charash, 2009; Miceli & Castelfranchi, 2009), what might explain the traditional association between envy and resentment in the literature (e.g., Smith et al., 1994).

2.2. Objective and Hypotheses

Aims of this study were twofold; first, to identify the core features that characterize the envious emotion, conceptualized as a stable individual characteristic; and, second, to validate a brief self-report measure of dispositional envy that reflects the identified features. To achieve these goals, we collected data on envy in everyday life, across multiple situations, by simultaneously applying all the dispositional and situational envy items that have been developed and used until now, jointly with measures traditionally associated with envy (i.e., resentment, cynical distrust, negative affect, and inferiority). Items describing the core features of envy were used to compose the new Core Envy Questionnaire-Dispositional (CEQ-D).

The following hypotheses were formulated based on the foregoing literature review.

Hypothesis 1: Based on the similarities in envy representation across current tools, the following core features of envy were expected to emerge from factor analyses and used to compose the CEQ-D: longing, sense of inferiority and frustration and discontent for one's relative position, anger and hostile ill will. On the other hand, we hypothesized that resentment would not be an inherent feature of envy, in agreement with other scholars (Miceli & Castelfranchi, 2007) (*Hypothesis 1a*). As described from empirical studies in the literature, envy seems to vary as to the direction. Indeed, operative definitions of envy seem to allow for a distinction between an inner- (e.g., pain, longing, sense of inferiority, discontent for one's relative position, helplessness, and resentful sense of injustice) and an outer-directed reaction in envy (e.g., ill will, hostility, anger, bitterness, and *schadenfraude*). Therefore, we hypothesized that envy results from an integration, in a variety of proportion, of inner-directed and outer-directed painful feelings. As a consequence, items describing the core features of envy were expected to load on two factors representing, respectively, a inner-directed dimension referred to inferiority/helplessness and an outer-directed dimension

describing ill willed feelings and cognitions (*Hypothesis 1b*). We expected that these two factors would explain a considerable amount (> 40%) of shared variance (*Hypothesis 1c*).

Hypothesis 2: Based on previous studies investigating the correlates of dispositional and episodic envy (e.g., Cohen-Charash, 2009; Smith et al., 1999), we expected, as evidence of criterion validity, that a higher-order factor structure would group together the CEQ-D factors and measures of constructs traditionally associated to, although distinct from the envious emotion (i.e., cynical hostility, resentment, sense of inferiority, negative emotionality).

Hypothesis 3: We expected an acceptable fit of a two-factor model of envy to empirical data, when testing the appropriateness of the exploratory factor model via confirmatory factor analysis on an independent sample.

Hypothesis 4: The newly developed CEQ-D was expected to be invariant across gender (*Hypothesis 4a*) and mode of administration (online *vs*. paper-and-pencil) (*Hypothesis 4b*).

Hypothesis 5: Considering the common concept of envy that emerged across studies (i.e., longing for what others have, sense of inferiority and frustration and discontent for one's relative position, anger and hostile ill will, and resentment), the well-established differentiation between envy and jealousy (Parrott & Smith, 1993), and the negative emotional correlates of envy (e.g., Cohen-Charash, 2009; Gold, 1996; Smith et al., 1999), dispositional envy was expected to have significantly stronger associations with cynical hostility, resentment, sense of inferiority, and negative affect, than with jealousy (*Hypothesis 5a*). Moreover, based on the strength of these associations in previous studies (Cohen-Charash, 2009; Gold, 1996; Smith et al., 1999) and on the proposed distinction between envy and resentment, we expect the effect size of the correlations with dispositional envy being large (≥ .50) for cynical hostility, medium to large (.40-.50) for negative affect, and medium

(.30-.40) for resentment and jealousy, following Cohen's (1988) criteria (*Hypothesis 5b*). Although results from previous studies would suggest a moderate association between inferiority and envy, we expected a somewhat stronger correlation (at least .40-.50), as inferiority is theoretically considered as a core feature on envy (*Hypothesis 5c*).

Hypothesis 6: The association between dispositional envy and emotional unawareness scores was expected to be negligible, as we hypothesized, in line with other authors (e.g., Schurtz et al., 2012), that envy is an aware emotion.

Hypothesis 7: Because of the sensitive nature of questions about envy, and in line with previous research (e.g., Cohen-Charash, 2009; Smith et al., 1999), we expected dispositional envy scores being significantly and negatively correlated with social desirability.

2.3. Method

2.3.1. Participants and Procedure

Participants were adults from the general population. Four independent samples were involved in the present study.

Sample 1 and Sample 2 were recruited through a chain-sampling method (Patton, 2002). Two online surveys were developed and the same method was used to reach the two samples. An e-mail invitation with a link to the online survey, available via a secure server, was sent to fifty contacts from the author's personal and professional colleagues (50% females), and each contact was asked to spread the investigation and forward the invitation to other ten people (50% females; 50% aged 18-45 and 50% aged over-45) who might be interested in taking part in the survey. Inclusion criteria for sending the invitation were being older than 18 years and of Italian nationality. The estimated completion time of the survey was specified in the e-mail invitation. Respondents were allowed to continue filling out

questionnaires only after pressing the "OK" button asking for consent to participate in the survey.

Sample 3 consisted of a subgroup of participants of Studies 2 and 3 whose data were already available at the time of the present study (see Chapter 3 and 4 for a detailed description of procedures).

Sample 4 was a convenience sample recruited among the general population in order to control for the potential bias of web surveys (Skitka, & Sargis, 2006). This sample completed a paper-and-pencil questionnaire.

2.3.2. Measures

In designing the online surveys, we used the "forced answer" option in order to oblige the respondent to complete each item before moving on to the next. This strategy has proven effective against item non-response rates, which are a significant factor affecting the quality of questionnaire data (Denscombe, 2009).

All surveys included an informed consent page, a socio-demographic form, and a series of self-report measures of the variables described below.

Dispositional envy (Sample 1). A 41-item questionnaire was designed to assess dispositional envy. Twenty-nine items were taken from the available self-report questionnaires for the assessment of dispositional and situational envy in adults (Belk, 1984; Gold, 1996; Schaubroeck & Lam, 2004; Smith et al., 1999; Vecchio, 1995). Redundant items were removed to avoid overloading the subject, and situational envy items were reformulated in a dispositional form. Reverse items were reworded, so that all items were positively worded in order to avoid confounding subjects and minimize respondents' inattention (van Sonderen, Sanderman, & Coyne, 2013). Thirteen dispositional envy items were newly developed. Of these, eight were inspired by episodic envy scales used in previous research

(Cohen-Charash, 2009; Hareli & Weiner, 2000; Parrott & Smith, 1993; Smith et al., 1996; van de Ven et al., 2009), and two were based on the dispositional envy scale for children (Carrasco et al., 2004). The typical envy features of longing, inferiority, discomfort for one's relative position, hostility and ill will, anger and bitterness, resentment, and frequency and intensity of the envious emotion were almost equally represented in the 41-item questionnaire. The complete questionnaire and the sources of the items are given in Appendix A.

Items were translated from English/Spanish into Italian and then independently back-translated by two bilingual psychologists according to scientific standard procedures (van de Vijver & Hambleton, 1996). Any discrepancies between the two versions were resolved by joint agreement between the translators. Items were rated on a 7-point scale from 1 (*completely disagree*) to 7 (*completely agree*). A 7-point scale was preferred to a 5-point scale, which has been most often used in the assessment of envy, since it was expected to provide increased variation in the responses and was found to be more reliable, valid, and discriminating (Preston & Colman, 2000). The agreement response format used in the existing envy items was maintained, which is primarily recommended for the assessment of feelings (Fowler 1995). Samples 2, 3, and 4 completed the dispositional envy questionnaire that was obtained after completion of the analyses of data from Sample 1.

Negative affect (Sample 2). The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1988) is a widely used 20-item measure of positive (e.g., "Interested") and negative (e.g. "Irritable") feelings. It consists of two relatively independent subscales, each containing ten mood-related adjectives rated on a 5-point scale from 1 (*very slightly or not at all*) to 5 (*extremely*). When used referring to a general time frame, both the positive affect (PA) and the negative affect (NA) scales showed good internal consistency, with Cronbach's alphas of .88 and .87, respectively, and adequate temporal stability over an

8-week period, with test-retest correlations of .68 and .71, respectively. Convergent and discriminant validity were supported by PA and NA being negatively and positively correlated with measures of general distress, depression, and anxiety, respectively (Watson et al., 1988). The Italian version of the PANAS used in the present research proved good validity and reliability (Terracciano, McCrae, & Costa, 2003). The Negative Affect scale was used in the current study, asking respondents to rate how much they generally experienced each feeling. Cronbach's alpha was .89.

Hostility (Sample 2). Hostility was measured through the Cynical Distrust Scale (CynDis; Julkunen, Salonen, Kaplan, Chesney, & Salonen, 1994), which was factor-analytically derived from the Cook-Medley Hostility scale (Cook & Medley, 1954). It describes the cognitive component of hostility through eight items (e.g., "I think most people would lie to get ahead") rated on a 4-point scale from 1 (*completely agree*) to 4 (*completely agree*). In the present study, to maintain consistency across scales, anchors were reversed (i.e., using a 4-point scale from 1 = *completely disagree* to 4 = *completely agree*) so that higher scores indicated greater cynical distrust. The scale demonstrated high internal consistency, with a Cronbach's alpha of .81, and good temporal stability, with a correlation coefficient of .82 over a 2-year period (Julkunen et al., 1994). As evidence of validity, stronger associations were found with other measures of distrust and cynicism than with anger-out or irritability (Greenglass & Julkunen, 1989, 1991). The CynDis also demonstrated adequate validity and reliability in its Italian version used in the present study (Emiliani, Casu, & Gremigni, 2011). Cronbach's alpha in this study was .80.

Resentment (Sample 2). To assess resentment, the Resentment subscale of the Buss-Durkee Hostility Inventory (BDHI-R; Buss & Durkee, 1957) was employed. The BDHI is a 75-item true-false inventory measuring different dimensions of hostility (e.g., verbal hostility, negativism, suspicion). The BDHI-R is composed by eight items (e.g., "I don't seem to get

what's coming to me") describing feelings of anger over real or imagined mistreatment. Factor analyses revealed that the resentment scale loaded on an attitudinal/experiential component of hostility, also named "covert hostility", jointly with the suspicion subscale (Bendig, 1961; Bushman, Cooper, & Lemke, 1991; Buss & Durkee, 1957; Felsten & Leitten, 1993). As evidence of validity, the BDHI-R was significantly correlated with the remaining hostility dimensions and with anger and depression, and highly associated with total BDHI scores (Biaggio, 1990; Moreno, Fuhrman, & Selby, 1993). Similarly, the attitudinal/experiential/covert component of hostility was found to be highly correlated with overt hostility (Felsten & Leitten, 1993). The Italian version (Castrogiovanni, Andreani, Maremmani, & Nannini-Innocenti, 1982) used in this study demonstrated adequate validity and reliability. The Kuder-Richardson consistency coefficient for this study was .60.

Inferiority (Sample 2). The Inferiority Questionnaire (IQ; Yao et al., 1997a, 1997b) was applied to measure sense of inferiority. The scale consists of thirty-four items rated on a 5-point scale ranging from 1 (*does not correspond at all*) to 5 (*corresponds exactly*). Statements describe negative self-image (e.g., "Even if I have many qualities, I always feel as if I had none") and concern with negative judgments from others (e.g., "If I am criticized, this means that others judge me harshly"). A principal component analysis yielded five components, yet all items except one loaded higher on the first component, thus a global inferiority score was computed and used by authors. As evidence of validity, inferiority scores were positively related to obsession, social phobia, and depression in both social phobics and obsessive compulsives. Reliability was indicated by a Cronbach's alphas internal consistency coefficient of .95, and a 5-month test-retest correlation coefficient of .84. The IQ was translated from English into Italian and then back-translated by two bilingual experts according to standard procedures (van de Vijver & Hambleton, 1996). In line with the

original study, a global inferiority score was used in the present study. Cronbach's alpha was .98.

Jealousy (Sample 2). To measure jealousy, the Short-Form Multidimensional Jealousy Scale (SF-MJS; Elphinston, Feeney, & Noller, 2011), which was factor-analytically derived from the most used 24-item MJS (Pfeiffer & Wong, 1989), was used. The scale describes the cognitive, emotional, and behavioral aspects of romantic jealousy, whit a 3-factor structure that was found to be stable across independent studies and languages (Elphinston et al., 2011; Pfeiffer & Wong, 1989). Cognitive (e.g., "I suspect that my partner may be attracted by someone else") and behavioral (e.g., "I question my partner about his or her telephone calls") jealousy items are rated on a 7-point frequency scale with anchors ranging from *never* to *all the time*, whereas emotional jealousy items (e.g., "My partner shows a great deal of interest or excitement in talking to someone of the opposite sex"), are responded on a scale from 1 = *very pleased* to 7 = *very upset.* Construct validity was supported by negative correlations with measures of happiness and liking, and positive associations with neuroticism, attachment anxiety, and other measures of jealousy (Buunk, 1997; Elphinston et al., 2011; Pfeiffer & Wong, 1989). Reliability of the SF-MJS was good, with Cronbach's alphas internal consistency coefficients above .70 (Elphinston et al., 2011). The SF-MJS was translated from English into Italian and then back-translated by two bilingual experts according to standard procedures (van de Vijver & Hambleton, 1996). In the present study, an overall jealousy score was computed, with a Cronbach's alpha of .88.

Alexithymia (Sample 2). The emotional awareness of participants was assessed using the 20-item Toronto Alexithymia Scale (TAS-20, Bagby, Parker, & Taylor, 1994), which is a widely used self-report for measuring alexithymia. Respondents rate each item on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). This multi-dimensional instrument consists of three subscales describing difficulty in identifying feelings and distinguishing

them from bodily sensations (e.g., “I am often confused about what emotion I am feeling”), difficulty in describing emotions to others (e.g., “it is difficult for me to reveal my innermost feelings, even to close friends”), and externally oriented thinking (e.g., “Looking for hidden meanings in movies or plays distracts from their enjoyment”). This three-factor structure has been shown to be stable across studies and languages and cultures (e.g., Bagby et al., 1994; Parker, Taylor, & Bagby, 2003; Taylor, Bagby, & Parker, 2003), while a series of studies has reported evidence of possible overlap between the TAS-20 and measures of negative affect (e.g., Honkalampi, Hintikka, Tanskanen, Lehtonen, & Viinamäki, 2000). Good internal consistency and test-retest reliability have been reported (e.g., Bagby et al., 1994; Parker et al., 2003; Taylor et al., 2003). Evidence of construct validity was supported by TAS-20 scales correlating in the expected direction with measures of personality traits, mindedness, and need for cognition, and with an observer-rated measure of alexithymia (Bagby, Taylor, & Parker, 1994). The Italian version used in this study (Bressi et al., 1996) proved satisfactory factorial validity and fair to good reliability in both normal and clinical samples, with Cronbach’s alphas ranging from .52 and .82, and test-retest correlations between .79 and .83 over a 2-week interval. In the current study, an overall alexithymia score was computed. Cronbach’s alphas for the total TAS-20 was .85.

Social desirability (Samples 1, 2, 3 and 4). The Italian 9-item version (MCSDS-9; Manganelli Rattazzi, Canova, & Marcorin, 2000) of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) is a unidimensional scale that was derived from confirmatory factor analyses performed on fourteen different short forms of the MCSDS. The internal consistency coefficient was acceptable, supporting the reliability of the MCSDS-9. Samples 1, 2, and 4 responded the MCSDS-9 by rating each item on a 5-point scale ranging from 1 (*absolutely false*) to 5 (*absolutely true*), whereas in Studies 2 and 3 (Sample 3) a

dichotomous version of the MCSDS-9 was used. In the present study, internal consistency reliability coefficients ranged between .61 (Sample 4) and .65 (Samples 1, 2, and 3).

2.3.3. Statistical Analyses

In order to identify the core features of envy, first- and second-order Exploratory Factor Analyses (EFAs) were performed on data from Sample 1 and 2, respectively. A first EFA with Principal Axis Factoring (PAF) and Promax rotation was performed on envy items that showed an approximately normal distribution. Data were considered within the limits of a normal distribution if skewness and kurtosis did not exceed ± 1 (Peat & Barton, 2005). A Parallel Analysis (Horn, 1965) was conducted to determine the number of factors to be retained, and factor loadings greater than .50 on a given factor and lower than .30 on the other factors were considered (Hair, Anderson, Tatham, & Black, 1998). In order to provide a brief measure of dispositional envy and made by an equal number of items in each subscale, only the five items with the highest factor loadings for each factor were selected for retention in the final questionnaire. A subsequent second-order EFA with PAF and Promax rotation was conducted using the scale scores from the first-order envy factors and the criterion measures of traditional envious features. This analysis was run to quantify the common variance shared between the envy factors and other constructs that have been associated to envy as criterion variables.

A Confirmatory Factor Analysis (CFA) was then performed on data from Sample 3, in order to test the factor model that was hypothesized based on EFA results. Model parameters were estimated using the robust maximum likelihood method, which corrects for non-normal data, since the test for multivariate symmetry and kurtosis detected deviation from multivariate normality. The closeness of the hypothesized model to the empirical data was evaluated through multiple goodness-of-fit indexes: Satorra-Bentler scaled χ^2 statistic (S-B

χ^2; Satorra & Bentler, 1988); Root Mean Square Error of Approximation (RMSEA, cut-off < .08; Browne & Cudeck, 1993); Standardized Root Mean Square Residual (SRMR, cut-off < .08) and Non-Normative Fit Index and Comparative Fit Index (NNFI and CFI, respectively, cut-off ≥ .95) (Hu & Bentler, 1999). An alternative one-factor model was also tested, and the goodness of fit of the hypothesized and alternative models compared. Modification indices of the selected model were inspected in order to evaluate whether model fit would significantly improve by adding new paths to the model. Modification indices greater than 4 were considered large enough to model re-specification (Brown, 2006) only in case of both statistical and theoretical importance for the CEQ-D model (Kaplan, 1990).

Two multi group CFAs (MG-CFAs) were performed to test for measurement invariance. A MG-CFA across gender was conducted on data from Sample 3, whereas invariance across mode of administration was tested using paper-and-pencil subjects from Sample 4 and an equally sized, randomly selected subsample of online subjects from Sample 3. Increasingly restrictive models representing configural, metric, scalar, and strict factorial invariance (Gregorich, 2006) were tested, with parameters constrained to be equivalent across groups as follows: factor structure (configural), factor loadings (metric), factor loadings and intercepts (scalar), and factor loadings, intercepts, and error variances (strict) (Brown, 2006). Differences in fit between nested models were evaluated using a S-B χ^2 difference test with the correction needed when the S-B scaled χ^2 is used (ΔS-B χ^2; Satorra & Bentler, 2001), and the CFI difference test (ΔCFI), with a ΔCFI ≤ .01 as indicative of no significant reduction in fit across models (Cheung & Rensvold, 2002). In case of significant differences in fit between nested models, partial invariance models were tested after removing invariance constraints based on modification indices (Steenkamp & Baumgartner, 1998). Partial invariance, which is sufficient for conducting meaningful cross-group comparisons, is achieved when at least two indicators per latent construct have invariant parameters (i.e.,

factor loadings for metric invariance, and factor loadings and intercepts for scalar invariance) (Steenkamp & Baumgartner, 1998). Sample size of MG-CFA samples for testing measurement invariance across mode of administration was established a priori using the Satorra-Saris method (Satorra & Saris, 1985), as to detect the factor covariance of Inferiority and Ill will provided by the CFA performed on the CEQ-D as significantly different from zero with a statistical power of at least .80. A null model was compared to an alternative model with parameters obtained from the CEQ-D CFA.

To collect evidence of criterion-related validity for the CEQ-D and obtain further contributes to the understanding of envy, we compared the relationship that envy has with theoretically similar constructs (i.e., inferiority, cynical distrust, resentment, jealousy, and negative affect). Using the Steiger's test (1980) for differences among the elements of the correlation matrix, we tested the hypothesized associations between envy and related construct. Correlations between dispositional envy and social desirability and emotional awareness scores were also calculated.

Internal consistency was assessed by calculating Cronbach's alpha (cut-off ≥ .70; Nunnally, 1978), Cronbach's alpha if item deleted, and corrected item-total correlations (≥ .30; Streiner & Norman, 2008). As to temporal stability, test-retest reliability over an 8-week period was assessed by calculating the Intra-Class Correlation coefficient (ICC) with a two-way random effects (absolute agreement) model (cut-off ≥ 0.70; Streiner & Norman, 2008) in a subsample of 54 experimental subjects from Study 2. A sample size larger than 50 was derived using Doros's and Lew's (2010) method for sample size calculation for ICCs, which is based on confidence intervals.

Interpretation of results was based on both statistical significance (significance level set at $p < .05$) and measures of effect size, with Pearson's r of .10 considered small, .30 medium, and .50 large (Cohen, 1988). CFAs and MG-CFAs were performed using LISREL

8.80 (Scientific Software International, Lincolnwood, IL); all other analyses were performed with IBM SPSS 20 (SPSS Inc., Chicago, IL).

2.4. Results

2.4.1. Participants' Characteristics

The total sample of the first study consisted of 1,984 participants. Sample 1 comprised 703 participants (56.3% females); Sample 2 consisted of 393 subjects (53.9% females). Sample 3 was composed by 107 subjects from Study 2 and 624 participants from Study 3, for a total of 731 subjects (57.2% females). Finally, Sample 4 consisted of 157 participants (53.5% females). Gender distribution was similar across the four samples [$\chi^2(3) = 1.51$, $p = 0.68$], whereas Sample 4 was significantly older [$F(3,1953) = 27.63$, $p < .001$, $d = 1.62$] and less educated [$\chi^2(6) = 119.83$, $p < .001$] than each of the other three samples, and comprised less single and more married individuals [$\chi^2(6) = 52.13$, $p < .001$]. These differences between Sample 4 and the other samples is not likely to lead to any erroneous conclusion or inaccurate estimates in testing the invariance of the developed questionnaire across mode of administration. Participants' characteristics are shown in Table 1.

Table 1. Characteristics of Study 1 participants

	Sample 1 (*n* = 703)	**Sample 2 (*n* = 393)**	**Sample 3 (*n* = 731)**	**Sample 3 (*n* = 157)**	**Total (N = 1984)**
	n (%)	*n (%)*	*n (%)*	*n (%)*	*n (%)*
Female	396 (56.3)	212 (53.9)	418 (57.2)	84 (53.5)	1110 (55.9)
Age[a]	30.9 (11.2; 19-82)	31.3 (11.2; 18-83)	30.2 (11.3; 18-70)	39.1 (12.4; 20-73)	31.2 (11.5; 18-83)
Level of education					
lower secondary	34 (4.8)	27 (6.9)	15 (2.1)	5 (3.2)	81 (4.1)
higher secondary	271 (38.5)	160 (40.7)	188 (25.7)	101 (64.3)	720 (36.3)
tertiary	398 (56.6)	206 (52.4)	528 (72.2)	51 (32.5)	1183 (59.6)
Family status					
single	551 (78.4)	302 (76.8)	551 (75.4)	81 (51.6)	1485 (74.8)
married	125 (17.8)	80 (20.4)	151 (20.7)	65 (41.4)	421 (21.2)
divorced/widowed	27 (3.8)	11 (2.8)	29 (4)	11 (7)	78 (3.9)

[a] *M* (*SD*; range); $^{*}p < 0.05$; $^{**}p < 0.001$; $^{ns}p > 0.05$

2.4.2. The Core Features of Dispositional Envy

Descriptive statistics of the initial 41 dispositional envy items are shown in Appendix B. Twenty-five items with an approximately normal distribution were subjected to an EFA, which yielded three factors explaining 56% of common variance. This solution is presented in Appendix C. However, parallel analysis reported in Table 2 indicated the retention of two factors; thus, a new EFA with a forced two-factor solution was performed. In agreement with *Hypothesis 1c*, the two extracted factors explained 53.38% of common variance, with the first factor explaining 48.13%. Factor loadings are reported in Table 3.

Table 2. Parallel analysis

Variable	**Real eigenvalue**	**Mean of random eigenvalues**	**95 Percentile of random eigenvalues**
1	12.47	1.36	1.41
2	1.78	1.30	1.35
3	1.04	1.26	1.29

Twelve items loaded on the first factor, with factor loadings ranging from .53 to .89, whereas eight items loaded on the second factor, with factor loadings between .51 and .88. The remaining five items did not meet our established criteria for factor loadings.

The first factor expressed feelings of inferiority towards others, longing for being in a different position, and helplessness, and was thus labelled "Inferiority". The second factor described feelings and thoughts of ill will, and anger at another's success, and was therefore named "Ill will". Thus, inferiority and ill will were found to be the core features of dispositional envy. In accordance with *Hypothesis 1b*, the construct of envy is bidimensional rather than unidimensional, with the two dimensions representing, respectively, an inner-directed and an outer-directed aspect of envy. In agreement with *Hypothesis 1a*, the hypothesized core features of longing, inferiority, and frustration and discontent are included in the inner-directed dimension, whereas the supposed core features of anger and hostile ill will are tapped by the outer-directed dimension. In partial disagreement with *Hypothesis 1a*, two items were included that described the resentful aspect of the envious emotion consistently enclosed in most operationalizations of envy. One (item 36) loaded on the expected inner-directed, inferiority factor, while the other (item 1) loaded on the outer-directed dimension, probably due to its higher focus on others' responsibility for one's inferior position.

For each factor, the five items with the highest factor loadings were selected and retained for inclusion in the final dispositional envy questionnaire, which was named Core Envy Questionnaire-Dispositional (CEQ-D). The two resentment items were not incorporated into the final questionnaire, having among the lowest loadings on their respective scale. The intercorrelation between the two CEQ-D factors was $r = .56$ ($p < .001$), indicating that the CEQ-D measures two non-overlapping, although highly related, dimensions. At the same

time, the high correlation between the two core features of envy supports the appropriateness of calculating an overall envy score.

Table 3. Factor loadings of the dispositional envy items (*n* = 703)

Item	English translation	F 1	F 2
1. Se qualcuno mi supera tendo a pensare che non sia giusto.	If someone outperforms me, I tend to think it is unfair.	-.01	.53
2. Di solito, tanto meglio sta qualcun altro, tanto peggio mi sento io.	The better off someone else is, the worse I feel.	.11	.59
3. Mi dà fastidio quando vedo persone che comprano tutto quello che vogliono.	It bothers when I see people who buy anything they want.	.15	.51
4. **A volte mi piace fare il guastafeste.**	**Sometimes it makes me feel good to "rain on someone's parade".**	-.21	**.64**
5. Sento che il mio impegno è apprezzato meno di quello di altri.	I feel that my efforts are valued less than the efforts of others.	.45	.16
6. **A volte desidero che gli altri falliscano.**	**Sometimes I wish others would fail in something.**	-.10	**.88**
7. **Tendo a provare rabbia quando gli altri hanno successo.**	**I tend to feel angry when others succeed.**	.04	**.80**
8. **Alla maggior parte delle persone le cose vanno meglio che a me.**	**Most people have it better than I do.**	**.79**	-.06
9. Di solito penso molto a cosa hanno gli altri che io vorrei.	Usually, I think a lot about what other have that I would like.	.65	.10
11. Sogno spesso di ottenere quello che hanno gli altri.	I often fantasize about getting what others possess.	.56	.19
14. Vedere che gli altri si affermano quando io non ci riesco mi amareggia.	It makes me feel bitter to see the others succeed when I don't.	.41	.42
15. **Di solito ho la sensazione che a me manchino alcune qualità che gli altri hanno.**	**Usually, I feel that I lack some of the qualities that others have.**	**.84**	-.16
17. **Spesso vorrei cambiare la mia situazione con quella di qualcun altro più avvantaggiato di me.**	**I often would like to trade places with someone in a better position.**	**.86**	-.06
18. **Mi dà fastidio se qualcuno mi supera o fa qualcosa meglio di me.**	**It bothers me if someone outperforms me or does better than me.**	.15	**.65**
23. **A volte vorrei essere come qualcun altro.**	**Sometimes I would like to be like someone else.**	**.89**	-.15
29. Non mi sembra giusto che alcune persone abbiano tutto.	It doesn't seem fair that some people have it all.	.28	.34
30. **A volte mi sembra di essere l'unico a non ottenere mai quello che desidera.**	**Sometimes I seem to be the only one who never gets what he/she wants.**	**.83**	-.12
31. Spesso il successo degli altri mi fa sentire un fallito	Frequently, the success of others makes me feel like a failure.	.70	.13

Table 1 continued

Item	English translation	F 1	F 2
32. È davvero frustrante vedere che alcune persone hanno successo così facilmente.	It is so frustrating to see some people succeed so easily.	.55	.25
33. **A volte spero che gli altri commettano un errore.**	**Sometimes I hope others would make a mistake.**	-.10	**.86**
35. Di solito mi rende infelice vedermi intorno persone più avvantaggiate di me	Usually, it makes me unhappy to see around people who are more fortunate than me.	.40	.46
36. In qualche modo non sembra giusto che alcune persone abbiano tutte le capacità.	It somehow doesn't seem fair that some people seem to have all the talent.	.53	.27
37. C'è sempre qualche persona verso la quale mi sento inferiore	There is always someone I feel inferior to.	.79	-.06
39. Tendo a sentirmi un mediocre quando gli altri fanno strada	I tend to feel mediocre when others work their way.	.72	.08
40. È frustrante vedere che gli altri hanno la fortuna di ottenere posizioni migliori delle mie	It is somewhat annoying to see others have all the luck in getting better positions.	.51	.35

Note. Items were written in Italian to be administered to Italian samples, and were then translated into English yet not reviewed for linguistic appropriateness**.**
Items in bold were included in the final CEQ-D

The second-order EFA subsequently performed, using both CEQ-D scales and the criterion measures scores as variables, yielded a one-factor solution, explaining 50.76% of common variance (Table 4). Thus, in agreement with *Hypothesis 2*, a single higher-order factor emerged, including the two core features of envy and other constructs such as resentment, negative emotionality, and hostility, which were found to be associated with envy although not coinciding with it. In line with results from the first-order EFA, inferiority was the highest loading variable, followed by resentment towards others and negative affect, which had equivalent factor loadings, and by ill will. Hostility, measured as cynical distrust, showed the lowest factor loading on the higher-order factor. This pattern of relations corroborates the idea that the envy dimension measured by the CEQ-D Inferiority is predominantly inner-directed and thus highly correlated with inferiority, resentment and negative emotions and less with outer-directed feelings such as ill will and cynical hostility.

Table 4. Second order EFA of envy features (*n* = 393)

Measure	Loading
CEQ-D Inferiority	.86
IS	.82
BDHI-R	.73
PANAS-NA	.71
CEQ-D Ill will	.62
CynDis	.47

Note. IS = Inferiority Scale; BDHI-R = Buss-Durkee Hostility Inventory-Resentment scale; PANAS-NA = Positive Negative Affect Schedule-Negative Affect scale; CynDis = Cynical Distrust scale.

To test the CEQ-D two-factor model, a CFA was conducted on data from an independent sample (Table 5). Indices for the one-factor model did not meet the pre-established criteria, indicating that a model with a single latent variable was not a good representation of the CEQ-D structure, whereas those for the two-factor model indicated an

excellent fit to the data, consistent with *Hypothesis 3*. Each CEQ-D item loaded significantly ($p < .001$) on its designated factor, with standardized factor loadings ranging from .70 to .80 for Inferiority and .46 to .87 for Ill will (Figure 1). Correlation between latent variables was .64 ($p < .001$). Modification indices for factor loadings were greater than 4 for all items except item 6. The highest modification indices were those suggesting cross-loadings for items 7 and 18, which, coherently with the proposed conceptualization of ill will in envy, both described angry reactions specifically related to one's inferior condition. A new model in which these two items were allowed to load on both the inferiority and the ill will dimensions showed a significantly better fit compared to the previous two-factor model [ΔS-B $\chi^2(2) = 13.95$, $p = .001$], although goodness of-fit indices were very similar across the two-factor models. No substantive rationale supported the addition of freely estimated error covariances suggested by the modification indices for covariances of error residuals.

Figure 1. Measurement model of the CEQ-D with standardized parameters.

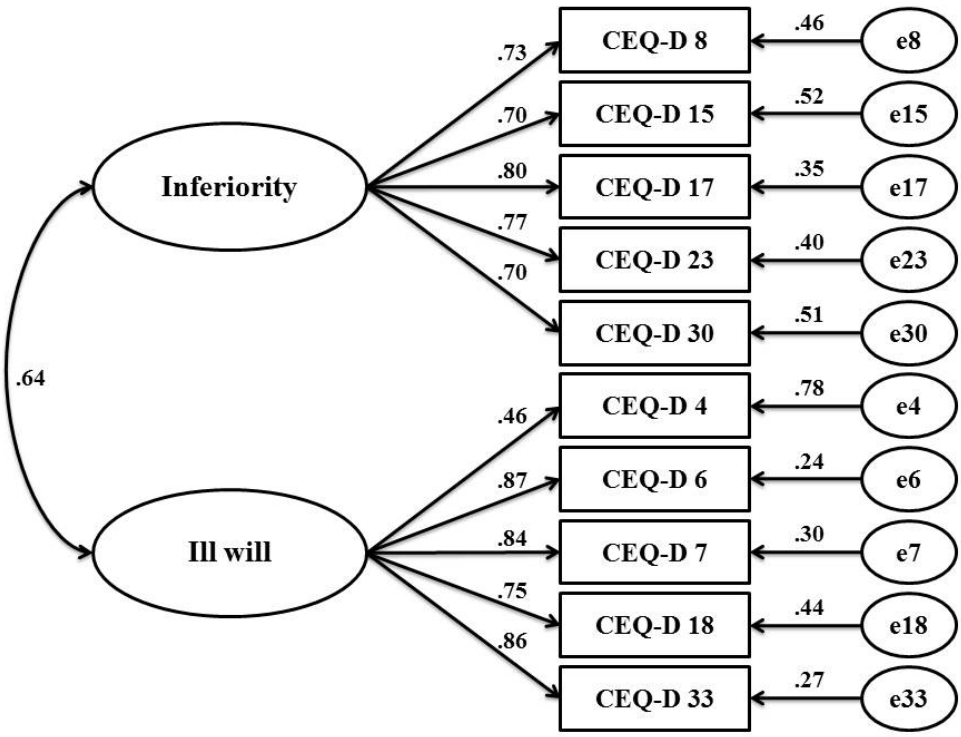


Table 5. Goodness of fit indices for one- and two-factor models

Fit indices	One-factor model[a]	Two-factor model[b]	Alternative two-factor model[c]
χ^2	884.60*	158.33*	136.20*
S-B χ^2	739.75*	92.04*	78.80*
RMSEA (CI 90%)	.16 (.16-.18; $p < .001$)	.05 (.04-.06; $p = .57$)	.04 (.03-.06; $p = .74$)
SRMR	.11	.04	.03
NNFI	.87	.99	.99
CFI	.90	.99	.99

[a] $df = 35$; [b] $df = 34$; [c] $df = 32$; * $p < .001$

To test for measurement invariance of the CEQ-D across gender and mode of administration, two MG-CFAs were performed (Table 6). In the MG-CFA across gender, configural invariance was supported, suggesting an invariant two-factor structure across gender. Metric invariance was not supported, with a significant ΔS-B χ^2 between nested models. Inspection of modification indices led to the removal of the equality constraints for the factor loadings of item 4 and item 8. The partial metric invariance model, in which the mentioned invariance constraints were relaxed, was supported. Scalar invariance was not achieved, yet, after removing the equality constraints for the intercepts of item 16 and item 18, partial scalar invariance was supported. Strict invariance was also achieved, indicating equal residual variances across gender. Thus, consistent with *Hypothesis 4a*, the CEQ-D was found to be invariant across gender, thus supporting valid comparisons of CEQ-D factor means across gender. The test of equal factor means across gender suggested to reject equality for male and female factor means. Indeed, both models in which latent means were constrained to be invariant across gender showed a significant decrease in model fit compared to the strict invariance model (Table 6). In particular, latent Inferiority means were 1.53 for women and 1.27 for men, whereas latent Ill will means were 0.85 and 1.19 for women and men, respectively. With respect to the observed means, women (M = 2.53, SD = 1.35)

reported significantly higher mean scores than men (M = 2.27, SD = 1.16) in Inferiority [F(1,729) = 7.49, p = .006, d = 0.20], whereas men (M = 2.18, SD = 1.28) showed significantly higher mean scores than women (M = 1.85, SD = 1.09) in Ill will [F(1,729) = 14.41, p < .001, d = 0.28], the effect sizes being small. When considering overall envy scores, there were no difference between men (M = 2.23, SD = 1.08) and women (M = 2.19, SD = 1.09) [F(1,729) = 0.21, p = .65, d = 0.04].

In the MG-CFA across mode of administration, full configural, metric, scalar, and strict invariance were supported by nonsignificant ΔS-B χ^2 between nested models (Table 6). Thus, the factor structure, factor loadings, intercepts, and error variances were found to be invariant between online and paper CEQ-D versions, supporting *Hypothesis 4b*. The test of equal latent means across mode of administration suggested to reject equality for online and paper-and-pencil Ill will factor means. In fact, the model in which Ill will factor means were constrained to be invariant across mode of administration showed a significant, although moderate, decrease in model fit compared to the strict invariance model (Table 6). Latent Ill will means were 1.04 for the online version and 0.75 for the paper-and-pencil CEQ-D. No significant decrease in model fit was observed when constraining Inferiority factor means to be equivalent across mode of administration.

With respect to the observed means, paper-and-pencil subjects (M = 2.39, SD = 1.28) reported similar Inferiority mean scores compared to online respondents (M = 2.56, SD = 1.41) [F(1,315) = 1.24, p = .27, d = 0.13], whereas Ill will scores were significantly, but slightly, higher among online (M = 2.03, SD = 1.19) compared to paper-and-pencil respondents (M = 1.77, SD = 0.94) in Ill will [F(1,315) = 4.88, p = .03, d = 0.24], the effect size being small. Paper-and-pencil (M = 2.08, SD = 0.95) and online subjects (M = 2.29, SD = 1.13) did not significantly differ as to overall envy scores [F(1,315) = 3.45, p < .001, d = 0.20].

Table 6. Goodness of fit indices for the MG-CFAs

	Invariance across gender							
	df	**χ^2**	**S-B χ^2**	**Δ df**	**ΔS-B χ^2**	**RMSEA (CI 90; *p*)**	**CFI**	**ΔCFI**
Configural	68	203.22***	119.37***	-	-	.05 (.03-.06; .70)	.99	-
Metric	76	232.32***	138.87***	8	20.45**	.05 (.03-.06; .61)	.99	.00
Partial metric (λ 4, 8)	75	217.80***	127.83***	7	8.48ns	.04 (.03-.06; 77)	.99	.00
Scalar	82	249.96***	152.03***	7	32.02***	.05 (.04-.06; .57)	.99	.00
Partial scalar (τ 4, 8, 16, 19)	80	234.64***	138.36***	5	10.68ns	.05 (.03-.06; .75)	.99	.00
Strict	86	250.80***	143.05***	6	6.42ns	.04 (.03-.05; .83)	.99	.00
Equal Inferiority factor means	87	265.75***	153.04***	1	50.64***	.05 (.03-.06; .72)	.99	.00
Equal Ill will factor means	87	258.41***	147.73***	1	5.43*	.04 (.03-.06; .80)	.99	.00
	Invariance across mode of administration							
	df	**χ^2**	**S-B χ^2**	**Δ df**	**ΔS-B χ^2**	**RMSEA (CI 90; *p*)**	**CFI**	**ΔCFI**
Configural	68	144.42***	93.10*	-	-	.05 (.02-.07; .52)	.99	-
Metric	76	162.88***	104.78*	8	11.67ns	.05 (.02-.07; .51)	.99	.00
Scalar	84	173.12***	115.83**	8	11.06ns	.05 (.02-.07; .51)	.99	.00
Strict	94	201.39***	126.25*	10	11.59ns	.05 (.02-.07; .58)	.99	.00
Equal Inferiority factor means	95	203.52***	127.61*	1	1.36ns	.05 (.02-.07; .58)	.99	.00
Equal Ill will factor means	95	207.42***	130.53**	1	5.89*	.05 (.02-.07; .52)	.99	.00

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; ns non-significant S-Bχ^2 difference test; b n = 731 (418 women, 313 men); b n = 317 (157 paper-and-pencil subjects; 160 online subjects).

2.4.3. Criterion Validity

Using the Steiger's test (1980), we compared the associations of the core features of envy with theoretically similar constructs, such as inferiority, jealousy, negative affect, resentment, and cynical hostility (Table 7). In agreement with *Hypothesis 5a*, both inferiority and ill will scores correlated significantly higher with sense of inferiority and resentment than with jealousy scores. Nevertheless, in partial agreement with *Hypothesis 5a*, only the inferiority component of envy showed a significantly stronger association with negative affect than with jealousy. In contrast with *Hypothesis 5a*, neither of the two core envy features was more strongly related to cynical hostility than to jealousy.

As to the effect size of the associations with criteria, as hypothesized, correlations with sense of inferiority were high for both envy core features. In partial agreement with *Hypothesis 5b*, the correlation with negative affect and resentment was high for the inferiority dimension and moderate for ill will, whereas both envy dimensions were weakly to moderately associated with jealousy. In contrast with *Hypothesis 5b*, for both envy dimensions the strength of the association with cynical hostility was weak to moderate.

Altogether, the fact that Inferiority but not Ill will was more strongly associated with negative affect than with jealousy, and that the correlation with negative affect was stronger for Inferiority compared to Ill will further supported the proposed characterization of Inferiority and Ill will as inner- and outer-directed manifestations, respectively. The associations with resentment, although higher than expected, similarly suggested a distinction between inner- and outer-directed envy components, with resentment showing a stronger association with Inferiority than with Ill will. Finally, hostility, as dislike and distrust of others, was found to be a construct quite well differentiated from both the inner- and outer-directed features of envy.

With respect to the association between envy and emotional awareness, correlations with alexithymia scores were positive and moderate, with $r = .39$ and $r = .36$ ($p < .001$) for Inferiority and Ill will, respectively. In disagreement with *Hypothesis 6*, the direction of the association was opposite to what was expected, with higher envy scores corresponding to higher levels of emotional unawareness. Nevertheless, when controlling for negative affect, being both envy and alexithymia characterized by a prevalence of negative affect, the association between envy and emotional unawareness became negligible, with a small effect size Thus, envy was only weakly associated with alexithymia when controlling for the variance shared with negative affectivity, consistent with *Hypothesis 6*, which posited the aware nature of the envious emotion.

Table 7. Pearson's correlations between CEQ-D and criterion measures

	IS	SF-MJS	PANAS-NA	BDHI-R	CynDis	TAS-20
CEQ-D Inferiority	.70	.34	.59	.65	.38[a]	.23[d]
CEQ-D Ill will	.51	.28	.38[b]	.42	.36[c]	.18[d]

Note. IS = Inferiority Scale; SF-MJS = Short Form Multidimensional Jealousy Scale; PANAS-NA = Positive Negative Affect Schedule-Negative Affect scale; BDHI-R = Buss-Durkee Hostility Inventory-Resentment scale; CynDis = Cynical Distrust scale; TAS-20 = 20-item Toronto Alexithymia Scale. All correlations were significant at the $p < .001$ level.
[a] Steiger's test: $z = .72$, $p = .47$; [b] Steiger's test: $z = 1.78$, $p = .08$; [c] Steiger's test: $z = 1.42$, $p = .16$; [d] Partial correlations controlling for PANAS-NA

Consistent with *Hypothesis 7*, both CEQ-D scales and the total CEQ-D score were significantly and negatively correlated with social desirability. This association was moderate for Inferiority and strong for Ill will. Thus, the dispositional envy scale was found to be affected by social desirability. Nevertheless, when a MCSDS-9 item that explicitly referred to envy (i.e., "There have been times when I was quite jealous of the good fortune of others", which contained the word "envious" in its Italian version) was dropped out, the strength of the association with social desirability became weak for Inferiority, weak to moderate for Ill will,

and moderate for overall envy (Table 8). Self-reports of ill will might thus be biased by social desirability.

Table 8. Associations between envy and social desirability across samples

	MCSDS-8[a]			
	Sample 1 (*n* = 703)	**Sample 2 (*n* = 393)**	**Sample 3 (*n* = 731)**	**Sample 4 (*n* = 157)**
CEQ-D Inferiority	-.21	-.19	-.28	-.34
CEQ-D Ill will	-.41	-.47	-.45	-.28
CEQ-D Total	-.34	-.36	-.41	-.35

Note. [a] MCSDS-8 = 9-item Marlowe Crowne Social Desirability Scale, after removing one item referring to envy. All correlations are significant at the $p < .001$ level.

2.4.4. Reliability

Internal consistency of the CEQ-D across samples was good, with Cronbach's alpha coefficients from .83 to .89, .78 to .87, and .86 to .90 for the Inferiority, Ill will, and Total scale, respectively. Corrected item-total correlations were higher than .35 in all samples, and all items contributed to the internal consistency of their respective scale, with item 4 presenting the weakest association with other items in the same scale. Finally, test-retest reliability over a 8-week period ($n = 54$) was acceptable for the Inferiority, Ill will, and Total CEQ-D scales. Reliability estimates across samples are shown in Table 9.

Table 9. Reliability estimates across samples

Item	Corrected item-total correlations				Cronbach's α if item deleted			
	Sample 1 (n = 703)	**Sample 2 (n = 393)**	**Sample 3 (n = 731)**	**Sample 4 (n = 157)**	**Sample 1 (n = 703)**	**Sample 2 (n = 393)**	**Sample 3 (n = 731)**	**Sample 4 (n = 157)**
9	.71	.71	.67	.61	.85	.87	.83	.80
16.	.64	.67	.65	.62	.87	.88	.84	.79
18	.77	.77	.71	.68	.84	.85	.82	.78
24.	.74	.74	.71	.64	.85	.86	.82	.79
32	.69	.74	.66	.58	.86	.86	.83	.81
Cronbach's α					.88	.89	.86	.83
ICC			.86					
(CI 95%)[a]			(.73-.92)					
4	.47	.48	.43	.36	.88	.89	.89	.82
7	.77	.76	.79	.61	.80	.82	.81	.72
8	.76	.76	.77	.64	.80	.83	.82	.71
19	.67	.69	.67	.53	.83	.84	.84	.75
35	.74	.79	.80	.72	.81	.82	.81	.70
Cronbach's α					.86	.87	.86	.78
ICC			.89					
(CI 95%)[a]			(.82-.94)					
Total CEQ-D Cronbach's α					.89	.90	.89	.86
ICC			.88					
(CI 95%)[a]			(.79-.93)					

[a] $n = 54$

2.5. Discussion

The main aim of the present study was to identify the core features of envy in order to clarify the envious configuration. This objective answered the recent call of scholars for more research on envy in order to elucidate what envy is (van de Ven et al., 2014). In fact, different viewpoints on envy have characterized the recent increased interest of scholars in the study of this complex emotion. Multiple conceptual and working definitions have been proposed, which alternatively interpreted and assessed envy as either general envy (e.g., Feather et al., 2013; van de Ven et al., 2014), envy plus coveting (e.g., Hareli & Weiner, 2002; Moran & Schweitzer, 2008), or envy plus ill will (e.g., Gold, 1996; van Dijk et al., 2006), although the majority of operative definitions include a blend of inferiority, coveting, ill will, and resentful unfairness (e.g., Hill et al., 2011; Parrott & Smith, 1993). Despite the number of scales available for assessing envy, none of them covers all aspects of the envious feeling. Moreover, the noticeable differences in envy representation across measures make it difficult to compare findings from studies, which may be mixed and inconsistent due to differences in how envy has been conceptualized and measured. For example, envy has been alternatively found to be associated (e.g., Smith et al., 1996; van Dijk et al., 2006) or unrelated (e.g., Feather & Nairn, 2005; Hareli & Weiner, 2002) to *schadenfreude*, while benign and malicious envy have been found to be either negatively (van de Ven et al., 2009, 2012, 2014) or positively correlated (Feather et al., 2013; van de Ven et al., 2014). Most of all, what emerged from the literature was that the assessment of envy sometimes disregarded important methodological issues (e.g., Gold, 1996), or used indicators either not in line with the proposed conceptualization or limited to a narrowed representation of the envy construct (e.g., Feather et al., 2013; Smith et al., 1999).

Moreover, different approaches (i.e., dispositional, situational, and episodic) have been adopted in the study of envy that seem not well integrated and thus comparable. As

proof of this, to our knowledge, no study has simultaneously addressed the dimensionality of both dispositional and episodic envy, which are the two major approaches to the study of envy. Dispositional envy has been proposed as a unidimensional construct, variously composed by longing, inferiority, ill will, anger, and resentment, depending on the measure used (e.g., Gold, 1996; Schaubroeck & Lam, 2004; Smith et al., 1999; Vecchio, 2000, 2005), while episodic envy was found to be a bidimensional construct, in which a feeling and a comparison dimensions can be distinguished (Cohen-Charash, 2009).

After reviewing the theoretical and operative definitions of envy in the literature, we proposed to consider envy as a multidimensional emotion in which an inner-directed and an outer-directed dimension can be distinguished. Inner-directed reactions to the painful feeling of envy include sense of inferiority and frustration and discontent for one's position relative to others, while the outer-directed focus in the envious feeling is characterized by anger and ill will towards the advantage person. Thus, we proposed inferiority and ill will as the core features of envy, as also proposed by other authors (Smith et al., 1999), who, nevertheless, did not found empirical support for such envious configuration. Differently from most definitions (e.g., Feather et al., 2013; Smith & Kim, 2007), we proposed to exclude resentment as an inherent part of the envious configuration since, in line with other authors (Miceli & Castelfranchi, 2007), we see the resentful sense of injustice for another's superiority as a not sufficient condition for the ill will component of envy to arise, thus proposing envy and resentment as two distinct, although related, constructs.

To overcome the lack of an unambiguous conceptualization of envy, and recompose the fragmentary and multifaceted picture of envy that emerges from the literature, we adopted a factor analytic approach, by simultaneously applying and then factor analyzing all the items that have been used until now to assess envy. We focused on malicious envy, which Parrott and Smith (1993) defined as the feeling that arises when someone desires something that

another has, wishing that the other lacked it. This type of envy, which has traditionally been a subject of philosophical speculations and a source of narrative inspiration, has characterized most empirical research on envy. In support to our focus on malicious rather than benign envy, the association with general envy has found to be higher for malicious than for benign envy (van de Ven et al., 2014), supporting the prevalent conception of malicious envy as proper envy. In the study of the maliciously envious emotion, we decided to start with dispositional envy, as a stable sensitivity to envy-eliciting situations, whereas episodic envy will be treated in Study 2 (see Chapter 3).

Results from an exploratory factor analysis performed on a pool of items tapping, in equal measure, all the typical features of envy represented across the existing envy measures (i.e., longing, inferiority, discomfort for one's relative position, hostility and ill will, anger and bitterness, resentment, and frequency and intensity of the envious emotion) yielded a two-factor solution. The two extracted factors expressed inferiority and ill will, respectively, coherently with a distinction between inner- and outer-directed negative feelings within the envious experience. Results from confirmatory factor analyses strongly supported the proposed envy configuration, and excluded the unidimensionality of the envious emotion previously advanced by some authors (e.g., Gold, 1996; Smith et al., 1999).

The inner-directed facet of the envious emotion entails sense of inferiority and longing as the desire to be in a different condition that is inherent to inferiority, jointly with the helplessness for one's condition. On the other hand, the outer-directed dimension is characterized by anger and feelings and thoughts of ill will against the superior others. This dimensionality of the envious experience is in line with the differentiation between depressive, helpless feelings and hostility in envy proposed by Smith et al. (1994). Similarly, the emerged configuration also fits the distinction proposed by Miceli and Castelfranchi (2007) between a focus on oneself and on the other when searching for the responsible agent

of one's inferior positon in social comparisons, which would differentially lead to helpless inferiority and ill will, respectively. Similarly, van de Ven et al. (2014) also distinguished between a kind of envy focused on one's defective condition and an outward-focused envy, which mainly considers the other's superior condition. Nevertheless, the former kind was conceptualized by van de Ven et al. (2014) as benign envy. Differently, our inner-directed, inferiority dimension is distinguishable from benign envy in that it entails a sort of helplessness, as also proposed by Miceli and Castelfranchi (2007), while benign envy motivates individuals to attain more for themselves (van de Ven et al. 2009, 2011).

The present study finally established inferiority as a defining component of envy, in contrast with previous conceptualizations that overlooked inferiority (e.g., Feather et al., 2013) and with findings from previous research, which reported only moderate associations between envy and inferiority (Gold, 1996; Smith et al., 1999). Indeed, we suggest that the moderate associations between envy and inferiority emerged in previous studies are due to the use of indirect or not appropriate inferiority measures. The inner-directed dimension was the most important component of dispositional envy, as it accounted for most of the common variance, thus supporting the painful nature of envy as essentially attributable to the declaration of inferiority inherent to the envious experience (Miceli & Castelfranchi, 2007). Moreover, the weight of inferiority in accounting for envy corroborates previous conceptualizations of inferiority as a necessary condition for envy to arise, with the ill will component arising as a defensive, self-assertive reaction to the self-threatening sense of inferiority involved in the experience of envy (Miceli & Castelfranchi, 2007; Smith & Kim, 2007). Nonetheless, our findings do not support previous conceptualizations of envy as merely longing (e.g., Hareli & Weiner, 2002), what, as also proposed by other authors, would not be envy yet (Miceli & Castelfranchi, 2007). Most of all, our findings support covetousness in envy as the mere desire not to be in an inferior position.

Findings from the present study also contributed to establish boundaries between envy and related feelings, as wished for by some authors (Miceli & Catelfranchi, 2007). Second-order factor analysis yielded a single factor solution in which the two core features of envy and other constructs traditionally attributed to the envious configuration were grouped together, yet validating a conceptualization of envy as a painful emotion that is primarily inner-directed and focused on inferiority and negative emotionality, but also entails an outer-directed hostile side that is primarily characterized by ill will. Indeed, as suggested by second-order EFA and correlations, hostility, measured as cynical hostility, was found to be a distinct construct, and as much differentiated from envy as is jealousy (Haslam & Bornstein, 1996; Parrott & Smith, 1993). Thus, results from the current study do not support the inclusion of hostility proper as a signature feature of envy, in contrast with previous conceptualizations (Silver & Sabini, 1978; Smith & Kim, 2007). While an envious disposition is characterized by sense of inferiority towards people who are in a better position, jointly with the tendency to feel anger and ill will against them as a consequence of the damaged self-worth that is inherent to one's helpless inferiority, hostile individuals dislike people as an expression of chronic hatred, and have distrust of others, who are seen as dishonest, unworthy, and mean (Cook & Medley, 1954). Some manifestations of general hostility, such as derogation, can surely be a consequence of envy, yet this would be as an expression of ill will towards people who perform better and make feel inferior, not towards people in general.

The associations between envy and resentment were higher than expected for a noninherent feature of envy, thus not allowing to draw definite conclusions about excluding resentment from the conceptualization of envy, as some authors (Miceli & Castelfranchi, 2007) and previous findings (Cohen-Charash, 2009; Feather & Nairn, 2005; Father et al., 2013; Sundie et al., 2009) would suggest. Nevertheless, the stronger association of resentment with the Inferiority than with the Ill will component of envy, which emerged from

both second-order EFA and correlations and had been also reported by previous studies (Feather et al., 2013), corroborated a distinction between inner- and outer-directed emotional reactions in envy. Indeed, the emerged pattern of relationships suggests that a private, resentful feeling of injustice is more strictly related to an inner-directed, inferiority feeling in envy, in line with previous interpretations (Miceli & Castelfranchi, 2007; Smith et al., 1994). It must be nonetheless remarked that we measured resentment using Buss and Durkee's (1957) scale, in which this kind of hostility is operationalized as a mixture of dispositional envy, subjective unfairness and anger at denied opportunities, what might explain the strong association with the inferiority, inner-directed component of envy.

Multi-group CFA highlighted that the meaning of envy and its dimensionality were conceptualized in the same way by men and women, in line with findings from a recent research on the words freely associated to the concept of envy, which was found to be a mix of unpleasant emotions related to malicious ill will, with no differences between Swedish men and women (Adrianson & Neila, 2014). Although genders did not differ in overall envy, women in the present study reported higher inferiority than men, while the opposite pattern was found for ill will. These findings are in line with previous studies reporting differences between genders, with men showing higher scores than women on the York Enviousness Scale, which primarily operationalizes dispositional envy as hostile ill will (Gold, 1996).

As a second objective of the current study, we validated a brief self-report measure of dispositional envy, the Core Envy Questionnaire-Dispositional (CEQ-D). Results from multiple exploratory and confirmatory factor analyses performed on independent samples supported its factorial validity, with two highly-related dimensions expressing inner-directed feelings of inferiority and helplessness, and outer-directed, hostile ill will, respectively. Test of measurement invariance showed that item parameters were invariant across gender and across mode of administration for most and all CEQ-D items, respectively. The established

measurement invariance of the CEQ-D allows to meaningfully compare men and women in inner- and outer-directed envious feelings, and supports the use of the CEQ-D in both its online and paper-and-pencil versions. Evidence of criterion validity for the CEQ-D was provided by associations with measures of feelings traditionally linked to the envious experience, such as negative affect, hostility and resentment. As to reliability, both subscales and overall CEQ-D proved to be internally consistent and temporally stable over a two-month period.

As expected, the CEQ-D was significantly correlated with a measure of social desirability, with a potential socially desirable responding bias being particularly evident for the Ill will dimension. Similar associations were found in previous studies (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Smith et al., 1999), and thus some authors proposed to consider them as an evidence of construct validity, due to the morally reprehensible and socially disapproved nature of envy (Smith et al., 1999; McCrae & Costa, 1983). Nonetheless, comparisons of scores between modes of administration seem to suggest to prefer the online CEQ-D version, as online subjects reported significantly higher ill will scores than paper-and pencil subjects. This might be due to the advantage of the social distance in online surveys, which have been shown to generate less socially desirable responses compared to face-to-face surveys, especially when collecting socially sensitive information (e.g., Duffy, Smith, Terhanian, & Bremer, 2005; Heerwegh, 2009).

An unexpected finding of the present study was the positive association between dispositional envy and alexithymia. Although probably attributable to the negative emotional salience of envy, as suggested by a decrease in the strength of the association when controlling for negative affect, this finding might support Smith & Kim's (2007) speculation of envy as a hardly recognized emotion. Individuals might underreport their envious feelings not only because ashamed of such a reprehensible emotion, but also because of the self-

threatening nature of envy, which would amplify the tendency to misreport envy through a mechanism of denial.

2.6. Limitations

The main limitation of the present study lies in the use of self-report instruments. By definition, such measures present problems of informativeness, since individuals' responses may reflect their cognitive and affective representation about themselves, rather than exactly reflecting what we wish to assess. Moreover, self-reports are inevitably affected by individuals' introspective ability and tendency to present themselves in an overly positive light. These problems may be of special concern for a tool designed to measure dispositional envy, which, by definition, is a socially undesirable emotion that, besides being hardly admitted, might also be hardly recognized. Indeed, the CEQ-D, and particularly its ill will dimension, was found to be potentially affected by a socially desirable response bias, although the scale does not explicitly refers to the envious emotion, since, differently from previous measures (e.g., Smith et al., 1999) it does not include the term *envy*, what should have made it less susceptible to social desirability problems. A way to partially elude socially desirable responses to the CEQ-D Ill will scale is the use of the validated online version of the CEQ-D. Nonetheless, findings from the present study highlight the importance of measuring and controlling for social desirability when studying dispositional envy.

Moreover, further studies should clarify the emotional awareness of envy, due to the unexpected association found between envy and alexithymia in the present study. Nevertheless, it must be noted that we used the Toronto Alexithymia Scale (Bagby et al., 1994) as an index of emotional unawareness, while the alexithymic trait is also strongly associated with negative affect (e.g., Honkalampi et al., 2000; Subic-Wrana, Bruder, Thomas, Lane, & Kohle, 2005). Arguably, the significance and particularly the direction of the

association between envy and alexithymia in the present study are to be attributed to the prevalence of negative emotions in alexithymia and its relationship with negative affectivity. Indeed, individuals with high levels of negative affect might rate themselves as unable to identify and describe their feelings due to an excessively critical self-view. The use of a different self-report measure of emotional awareness, or the application of indirect or implicit measures of envy in future research might be useful to clarify this aspect.

A second limitation was the exclusion of benign envy from the present study. We tested our hypotheses in the context of malicious envy due to its potentially harmful consequences on individuals and their wellbeing, with an increasing number of studies on malicious envy and its correlates in the past decade. Nevertheless, the lack of a shared conceptualization of envy represented an obstacle to its measurement, with multiple narrowed operative definitions of envy hindering a deep understanding of what envy is and what envy does. Now that the core features of dispositional envy have been established in the present study, further research should investigate how benign envy relates with the inner-directed, inferiority component of dispositional envy, also due to previous mixed findings on the relationship between benign and malicious envy (e.g., Feather et al., 2013; van de Ven et al., 2014).

A third limitation concerns the generalizability of findings, since participants in the present study were mostly highly-educated, single young adults. Future investigations should include older individuals in order to verify the CEQ-D measurement invariance across age groups and thus ascertain that dispositional envy as measured with the CEQ-D is interpreted consistently across different ages.

Finally, the cross-sectional nature of the present study precludes inferences about the direction of causality between dispositional envy and its associated variables. Future research using prospective designs is warranted to clarify the emerged relationships.

2.7. Conclusions

The present study contributed to finally ascertain the dimensionality of envy as a stable dispositional characteristic. Multiple exploratory and confirmatory factor analyses supported the conceptualization of envy as a bidimensional construct, composed by an inner-directed dimension of inferiority and helplessness, and an outer-directed feeling of hostile ill will. Moreover, findings from the present study also contributed to establish boundaries across envy and related yet different constructs that have often been included in definitions of envy, such as resentment and hostility.

As a measure of dispositional envy, the CEQ-D proved to be a valid and reliable self-report that can be rapidly and confidently administered in both its online and paper-and-pencil versions. The use of the CEQ-D in future research on dispositional envy might be especially valuable in order to avoid differences in findings that might result from differences in envy operationalization across studies, thus potentially allowing scholars to reach a deeper understanding of the envious disposition and its consequences on individuals.

CHAPTER 3

Study 2: The Configuration of Experimentally-Elicited Envy

3.1. Introduction

Envy has been studied as either a dispositional or an episodic emotion, that is, as either a stable individual tendency or a temporary, situation-specific emotional state. Nevertheless, no evidence exists that a general inclination to feel envious and the immediate experience of envy do have the same configuration. Indeed, to our knowledge, no study has investigated whether dispositional and episodic envy have the same dimensionality, and studies simultaneously assessing both aspects of envy have used different tools to measure trait and state envy (e.g., Cohen-Charash, 2009; Cohen-Charash & Mueller, 2997; Krizan & Johar, 2012; Sundie et al., 2009). In these studies, dispositional and episodic envy were weakly to moderately intercorrelated (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2997; Krizan & Johar, 2012).

Research on envy is skewed towards its episodic manifestations, with studies aimed at identifying the specific feelings involved in the envious experience (e.g., Parrott & Smith, 1993) or the kinds of situations that are likely to elicit envy (e.g., Adrianson & Ramdhani, 2014). A more pronounced interest in episodic than in dispositional envy lies in that the former can be experienced by any individual, regardless of having an envious disposition, what implies potentially broader implications at the individual and group level (Cohen-Charash, 2009).

In order to evoke and study the situation-specific, temporary feeling of envy, different methodologies have been applied. Episodic primes have been often used to activate the affective, cognitive, and behavioral ingredients of envy by asking participants to recall and

describe a personal envious experience (e.g., Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Hareli & Weiner, 2002; Haslam & Bornstein, 1996; Polman & Ruttan, 2012; van de Ven et al., 2009). As an alternative, the most used strategy for eliciting envy was to present participants with scenarios (i.e., vignettes, fictitious interviews, and imaginary situations), in which the direction of the social comparison (i.e., upward, downward, or neutral social comparison; e.g., Brigham et al., 1997; Feather & Sherman, 2002; Hill et al., 2011; Moran & Schweitzer, 2008; Parrott & Smith, 1993; Smith et al., 1996; Sundie et al., 2009; van Dijk, Ouwerkerk, & Wesseling, 2011) and/or other envy-related variables (e.g., similarity, closeness, deservingness, or control; e.g., Baumel & Berant, 2015; Feather & Nairn, 2005; Feather & Sherman, 2002; Piskorz & Piskorz, 2009; van de Ven et al., 2012) had been manipulated. In both cases, a series of feeling-related items was presented to participants in order to assess their reactions to the emotion-evoking stimulus. A detailed description of the major multi-item episodic envy measures has been provided in Chapter 2. As discussed in the previous chapter, these measures do not refer to the same envious emotion but rather constitute different operationalizations and mostly partial representations of envy, what has contributed to a fragmentary understanding of the envious emotion and its components.

The configuration of episodic envy has been scarcely addressed by scholars, with few studies investigating the dimensionality of the measure used. Most of these provided support for the unidimensionality of episodic envy, operationalized as a combination of general envy, inferiority, anger, hostility, and resentment (Gino & Pierce, 2009; Smith et al., 1996). Nevertheless, Cohen-Charash (2009) reported a bidimensional configuration of episodic envy within organizations, which was composed by a feeling and a social comparison component. The former described a negative feeling (i.e., hatred, grudge, rancor, bitterness, and gall) towards the superior other, while the latter expressed the cognitive appraisal of the unfavorable social comparison in terms of longing for what the other has and recognition of

one's lacking condition. The two components were found to be differently related to outcome variables of envy. The feeling component was more strongly associated with negative affective states compared with the comparison component, and was the only envy factor related to hostility and destructive behavioral intentions, such as harming the superior other's reputation and performance and creating a negative work environment. On the other hand, the comparison component was the only one associated with self-improving, constructive behavioral intentions within the organization.

Based on these findings, Cohen-Charash suggested a qualitative difference between episodic and dispositional envy, which had been found to be a unidimensional construct in previous studies (Smith et al., 1999). First, Cohen-Charash proposed to consider episodic envy as more complex than dispositional envy due to its more articulated internal structure. Second, sense of inferiority was excluded from the temporary experience of envy, while dispositional envy would imply a chronic sense of inferiority. Indeed, Cohen-Charash distinguished the perceived disadvantage relative to the superior target that was included in the comparison component from feelings of inferiority. Lastly, based on the different correlates associated with the dispositional and episodic facets of envy, it was remarked that episodic envy, differently from dispositional envy, also showed positive associations with desirable, constructive reactions.

We believe that the comparison component of Cohen-Charash's episodic envy does include inferiority, which is inherently expressed by the recognition of one's lacking position, yet it excludes the helplessness that completes feelings of inferiority in envy (Miceli & Castelfranchi, 2007) and has emerged as a defining feature of dispositional envy in Study 1 (see Chapter 2). Although Cohen-Charash's interest was focused on proper or hostile envy, the comparison component of her episodic envy seems rather to resemble benign envy, in that what the wish to be like the advantaged other and envy proper have in common is the

unfavorable social comparison component (Miceli & Castelfranchi, 2007). Yet, while in proper envy such painful recognition of disadvantage is an inner-directed feeling characterized by helplessness, in benign envy the acknowledgement of the other's superiority and of one's lacking position compared to the other is free from helplessness. In support to this view, Cohen-Charash's social comparison component was associated with motivational tendencies for self-improvement, as benign envy is (van de Ven et al., 2009), and with admiration, which, in turn, was unrelated to the hostile, feeling component of episodic envy. Moreover, the strong evidence provided by Cohen-Charash (2009) in support to a differentiation between episodic envy and admiration cannot be invoked to exclude an equivalence between the social comparison component and benign envy, which also was found to be distinct from admiration (van de Ven et al., 2009, 2012).

Thus, specifically referring to malicious or proper envy, we suggest, in disagreement with Cohen-Charash (2009), that dispositional and episodic envy may share the same configuration rather than being qualitatively different. Indeed, the bidimensionality that emerged for dispositional envy in Study 1 seems to be also applicable to episodic envy, since the dispositional inner-directed, inferiority dimension is partially represented, albeit missing the helplessness feature, by Cohen-Charash's comparison component, whereas the dispositional outer-directed, ill will dimension is embodied by the hostile feeling component of episodic envy. Moreover, just like dispositional malicious envy (Duffy & Shaw, 2000; Gold, 1996; Smith et al., 1999), the feeling component of episodic envy was associated with negative emotional and behavioral correlates such as anxiety, depression and hostility, and deviant workplace behaviors (Cohen-Charash, 2009). Lastly, episodic envy was found to differ from hostility and perceived unfairness (Cohen-Charash, 2009), as was also the case for dispositional envy in Study 1.

In light of the above, it seems plausible to hypothesize that the same bidimensional configuration is applicable to both dispositional and episodic envy, which we propose to be not qualitatively but merely quantitatively different. Indeed, the difference between the two facets of envy might be limited to their intensity, as momentary emotions are typically more intense than their dispositional counterpart. As initial evidence in support of this hypothesis, episodic envy was found to be more intense than dispositional envy (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007), and the associations with situational negative affective states and behavioral intentions were found to be generally stronger for episodic than for dispositional envy (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007). To finally bring together the dispositional and episodic approaches to the study of envy, the configuration of both dispositional and episodic envy must be clarified. Having established, in Study 1, the joint occurrence of inner- and outer-directed feelings in dispositional envy, it remains to investigate whether the same also applies to the temporary, situation-specific envious feeling.

Finally, Cohen-Charash's inclusion of a cognitive, social comparison component in episodic envy implied that cognitive processes are also part of envy, what draws our attention back to the issue of emotional awareness in envy. Nevertheless, the awareness of the circumstances leading to the unpleasant envious emotion, like that included in Cohen-Charash conceptualization, does not automatically imply an awareness of the meaning of one's emotional experience. Moreover, regardless of personal self-reflective abilities, individuals may not recognize their own envy due to a mechanism of denial aimed at protecting a threatened self-view (Smith & Kim, 2007), as discussed in the previous chapter. Findings from Study 1 indicated the need to further investigate an unexpected association between envy and alexithymia, in order to exclude the unfeasibility of using a self-report measure in the assessment of envy. Indeed, since great variability exists in individuals' skills for monitoring their internal states and attribute meaning to their emotional experiences, the use

of self-reports for measuring affective states may be questionable. While the ability to accurately report private experience is a major threat to the validity of using self-reports to assess emotions in general, another bias-inducing factor that is specific of morally reprehensible emotions like envy is represented by socially desirable responses, which were found to potentially affect ill will reports when using the Core Envy Questionnaire-Dispositional (CEQ-D) validated in Study 1.

Possible strategies to overcome introspective limits and response factors include the use of indirect or implicit measures (Greenwald et al., 2002). For example, indirect measures of envy that ask respondents to identify themselves with the disadvantaged protagonist of an upward social comparison, rather than referring to the respondent as directly involved in the depicted unfavorable comparison situation, have been found to provide a better assessment of envy, with respondents reporting significantly more envy in the indirect than in the direct version (Habimana & Massé, 2000). An even more indirect self-reported assessment of envy has been recently carried out by Baumel and Berant (2015), who conducted a within-subject experiment in which episodic malicious envy was measured as the difference between a general tendency to derogate or support a successful other and the derogation or support directed to a specific superior other as a consequence of his or her enviable success in a domain relevant to the participant's self-worth. On the other hand, an implicit assessment of episodic emotions can be pursued using adaptations of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). This is a well-validated, widely used reaction time test that has been mostly used to assess implicit cognitions, that is, automatic expressions of attitudes (e.g., Barnes-Holmes, Murtagh, Barnes-Holmes, & Stewart, 2010), stereotypes (e.g., Cvencek, Meltzoff, & Greenwald, 2011), and self-esteem and self-concept (e.g., Egloff & Schmukle, 2002; Greenwald & Farnham, 2000). Only few studies have used the IAT to measure experimentally induced episodic emotions, like state anxiety (Sato & Kawahara,

2012; Schmukle & Egloff, 2002; Verkuil, Brosschot, & Thayer, 2014). The reason for the IAT's success, especially in social cognition research, relies on its ability to capture introspectively available associations eluding self-report artifacts such as social desirability or impression management (e.g., Greenwald et al., 2002; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005).

While the IAT has extensively proved to be sensitive to experimental manipulations aimed at influencing automatic expressions of attitudes and stereotypes (Greenwald et al., 2002), more investigation is needed to definitely establish its sensitivity to emotion-eliciting experimental manipulations. For example, Sato and Kawahara (2012) manipulated stress by generating test anxiety and threatening self-esteem. Participants were assigned to either a low stress condition, in which an elementary-level mother-tongue proficiency test was performed with no time limit, or a high-stress condition, in which a high-level English proficiency test was completed under time pressure and subjects' results were compared to ego-threatening, extremely high normative data. An IAT was then administered in which subjects were asked to associate their concept of self with the concept of anxiety. Results indicated that the IAT effect was greater in the high-stress than in the low-stress group, thus supporting sensitivity to group differences in acute stress for the IAT. Differently, findings from Schmukle and Egloff (2002) did not provide evidence of the IAT's sensitivity to changes in state anxiety, which had been experimentally induced using a public speaking test. After anticipation of exposure to the public speech stressor, participants completed an IAT in which they were asked to associate words related to the self with words related to either calmness or anxiety. The IAT effect did not differ between pre- and post-anxiety assessment, not supporting the IAT's ability to detect differences in mood states.

The use of an adapted IAT in the study of episodic envy seems worthy of consideration due to the socially sensitive and potentially masked nature of the envious

emotion. In the attempt to overcome potential problems of self-disclosure and self-awareness in the self-report assessment of envy, both explicit indirect and implicit measures should be used. A correspondence between explicit and implicit measures would legitimate the use of both kinds of assessment for episodic envy. Nevertheless, considerable variation exists in the strength and consistency of the associations between the IAT and self-report measures (Hofmann et al., 2005). Meta-analytic studies examined the correlation between the IAT and self-report measures (Hofmann et al., 2005) and the associations of both the IAT and self-reports with outcome criteria (Greenwald, Poehlman, Uhlmann, & Banaji, 2009). While Hofmann et al. (2005) did not find evidence of an effect of social desirability on the correlation between the IAT and self-reports, Greenwald et al (2009) found that the social sensitivity of the topic under study led to lower explicit-implicit correlations. In particular, the association between implicit and explicit measures of socially sensitive topics might be low because self-reports are easily affected by individuals' motivation and ability to control their responses (Hofmann et al., 2005). Moreover, the added value of the IAT to assess automatic associations for socially sensitive topics has been demonstrated by the IAT's predictive validity not being reduced by social sensitivity, differently from explicit self-report measures (e.g., Greenwald 2009). As to introspective limits affecting self-report measures, the correlation between explicit and implicit measures was found to be enhanced by the spontaneity (or low introspective demand) of the self-report, that is, the explicit-implicit correspondence was greater when people responded the self-report with higher spontaneity and lower engagement in deliberate processing (Hofmann et al., 2005). Lastly, the implicit-explicit association was found to be also affected by method-related factors of both kinds of measures. As to the type of explicit measure, standardized questionnaires tended to be related, although not significantly, to a lower explicit-implicit correspondence, compared with semantic differentials, adjective ratings, and feeling thermometers, while relative self-reports,

in which the two IAT target concepts were included either in the item wording or in the response format, were more strongly correlated with the IAT than absolute self-reports referring to only one IAT target concept (Hofmann et al., 2005).

In light of all the above, after having established the experiential pattern of episodic envy, it would be beneficial to also ascertain the appropriateness of using self-report measures in the assessment of envy.

3.2. Objective and Hypotheses

Aims of this study were threefold: first, to elucidate whether the configuration of episodic envy is the same as that of dispositional envy, that is, whether dispositional and episodic envy are qualitatively equivalent, by predisposing and validating an episodic version of the CEQ-D, namely the Core Envy Questionnaire-Episodic (CEQ-E); second, to examine the associations between explicit episodic envy, as measured through the CEQ-E, and implicit episodic envy, as assessed by an IAT, in order to ascertain the appropriateness of using a self-report measure of envy; third, to investigate quantitative differences between dispositional and episodic envy, by comparing the intensity of dispositional and episodic ratings of envy. As a secondary objective, we investigated the criterion, predictive validity of the CEQ-D, by checking whether dispositional envy scores were able to predict subsequent scores of episodic envy. To elicit episodic envy, a within-subject, scenario-based experiment was conducted, in which participants were exposed to upward (i.e., envy-eliciting) and same-level (i.e., neutral) social comparison scenarios.

The following hypotheses were formulated and tested.

Hypothesis 1: The CEQ-E was expected to show the same two-factor structure as the CEQ-D, as it was hypothesized that dispositional and episodic envy, being qualitatively

equivalent, would have the same configuration, with an inner- and an outer-directed feeling dimension.

Hypothesis 2: As an evidence of successful experimental manipulation, CEQ-E scores were expected to be significantly higher in the upward than in the same-level social comparison scenario.

Hypothesis 3: An explicit-implicit correspondence was expected for episodic envy, that is, explicit episodic envy scores were expected to be significantly and positively correlated with implicit episodic envy scores. Based on the literature on the associations between explicit and implicit measures (Hofmann et al., 2005), and considering the type of explicit self-report measure used (i.e., standardized questionnaire) and the socially desirable nature of the topic under study, we expected weak correlations ($r < .30$; Cohen, 1988) between explicit and implicit scores.

Hypothesis 4: In line with results from Study 1 (see Chapter 2), we expected explicit episodic envy scores to be significantly and negatively correlated with social desirability scores. Nevertheless, due to the use of an indirect measure of episodic envy, we expected a somewhat lower correlation for episodic envy than that found for dispositional envy ($r < .30$, $r < .40$, and $r < .35$ for Inferiority, Ill will, and Overall episodic envy, respectively; Cohen, 1988).

Hypothesis 5: Based on previous evidence (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007) and in support of a quantitative difference between dispositional and episodic envy, we expected CEQ-E scores to be significantly higher than CEQ-D scores for both subscales and overall envy scores.

Hypothesis 6: In support of the predictive validity of the CEQ-D, pre-experimental, dispositional envy scores were expected to account for subsequent episodic envy scores, as assessed through both the CEQ-E (*Hypothesis 6a*) and the IAT (*Hypothesis 6b*), that is,

individuals with higher levels of dispositional envy were supposed to respond with higher episodic envy to an upward social comparison target. In particular, based on previous findings (e.g., Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Krizan & Johar, 2012) we expected that the CEQ-D would explain at least a medium ($R^2 \geq .13$) amount of variance in CEQ-E scores, following Cohen's (1988) criteria. On the other hand, based on Hofmann et al. (2005), we expected that CEQ-D scores would explain a small proportion of variance ($R^2 < .13$) in IAT scores.

3.3. Method

3.3.1. Participants and Procedure

A convenience sample of undergraduates was recruited on a voluntary basis by advertisement, word of mouth, and e-mail invitation. Potentially eligible participants selected from personal contact were invited to participate in an experiment on social interactions, which would take place one month later. Those who agreed to participate were sent an e-mail with the link to a short online survey containing an informed consent form approved by the University Ethics Committee, few socio-demographic information and the CEQ-D.

A single-session computer-based experiment was conducted individually in a laboratory setting and took approximately 25 minutes. Subjects were told that the experiment attained their perception of social interactions among college students, and asked to carefully read two conversations between two undergraduates, and then complete a speed task requiring to assign words and pictures to categories. Specific instructions for each experimental task were displayed on the computer screen. After completing the experiment, participants were debriefed and probed for possible suspicion, and asked not to discuss the experiment with other students.

3.3.2. Design

During the study session, each participant read two scenarios: an upward social comparison envy-evoking scenario, and a same-level social comparison neutral scenario. Both scenarios were presented in the form of a presentation comprising eight slides, and consisted of a short conversation (from 663 words for the upward to 686 words for the same-level comparison scenario) between two college students, which was displayed jointly with the pictures of the scenario protagonists. The protagonists' pictures were profile and frontal faces with neutral expression taken from the Karolinska database of emotional faces (Lundqvist, Flykt, & Öhman, 1998). Separate versions of each scenario were created for males and females, as to match the gender of the protagonists to that of the participant. Somatic appearance was also controlled for, by counterbalancing blonde and dark-haired types. The upward social comparison scenario was inspired by a scenario already employed by Parrott and Smith (1993), which included the typical envy-eliciting elements (Smith & Kim, 2007): to create the upward social comparison, the scenario protagonists were two differently advantaged college students (i.e., the outperformer, that is the upward comparison target, and the outperformed). The subject's perceived similarity with the upward comparison target was provided by matching the gender of the scenario protagonists with that of the participant, and by limiting the study sample to college students. The self-relevance of the comparison dimensions was sought by the scenario depicting the relative position of the two undergraduates in popularity, wealth, academic achievement, and talents, which are supposed to be self-relevant to college-aged individuals. In the neutral scenario, a same-level social comparison was created by describing two average college students, one of whom corresponded to the outperformed protagonist of the upward comparison scenario. The participant's perceived similarity with the same-level comparison target and the self-relevance

of the comparison domains were maintained as in the upward comparison scenario. Both scenarios are provided in Appendix D.

The pictures of the upward comparison target, the left-right position of the upward comparison target on the screen, and the presentation order of the scenarios were counterbalanced, and subjects were randomly assigned to one of eight conditions. Thus, the experiment used a 2 x 2 x 2 x 2 x 2 mixed factorial design, with four between-subject factors and one within-subject factor. Specifically, gender, order of the scenarios (envy-neutral *vs*. neutral-envy), appearance (blonde *vs*. black-haired) and placement on the screen (left *vs*. right) of the upward comparison target were the between-subject factors, and scenario (upward *vs*. same-level social comparison) was the within-subject factor.

After the presentation of each scenario, subjects were asked to imagine that they were the protagonist common to both scenarios and indicate how they would feel towards the other protagonist (i.e., the social comparison target), by completing the CEQ-E.

In the second part of the experiment, participants completed a modified version of the IAT (Greenwald et al., 1998), which was designed for the present study to measure subjects' spontaneous affective reactions towards the social comparison targets.

3.3.3. Measures

The following study variables were measured.

Dispositional envy. One month before the experiment, the invited participants completed the 10-item CEQ-D derived from Study 1. Cronbach's alphas in this sample were .87, .88 and .87 for Inferiority, Ill will, and Total CEQ-D scales, respectively.

Explicit episodic envy. Following each scenario, participants completed the CEQ-E, which is a modified, episodic indirect version of the CEQ-D. Subjects were instructed to complete the scale according to how they would feel towards the upward comparison target or

the same-level comparison target, imagining they were the protagonist common to both scenarios. CEQ-E consisted of ten items rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Episodic envy items were identical to CEQ-D items, except that they included the social comparison target's name instead of generically referring to "the other people".

Implicit episodic envy. Automatic affective reactions towards the upward comparison target was assessed by means of an IAT, following the standard sequence (Greenwald et al., 1998). The IAT is a computerized reaction-time task in which subjects are asked to categorize, as quickly and accurately as possible, target pictures or words to concept and attribute categories. Target stimuli appear in the center of the screen and are assigned to one of two categories, which are displayed in the upper corners of the screen, by pressing one of two keys (left *vs*. right).

In the present study, participants categorized "Good" and "Bad" words as well as pictures of both the upward comparison target and the same-level comparison target. "Good" words were as follows: Joy, Love, Peace, Wonderful, Pleasure, Glorious, Laughter, and Happy; "Bad" stimuli were: Agony, Terrible, Horrible, Nasty, Evil, Awful, Failure, and Hurt (Nosek, Banaji, & Greenwald, 2002). Within each category, stimuli were randomly selected without replacement until the entire set was used, and then a new random selection was performed as often as necessary to complete each block of trials. The inter-stimulus interval was 300 ms. In case of incorrect response, a red "X" was displayed below the stimulus until the subject pressed the right key, and response latencies were recorded throughout the correction process. A standard set of seven response blocks was applied. Blocks 1 (upward *vs*. same-level comparison target, with the names of the two social comparison targets displayed in the upper corners of the screen), 2 ("Good" *vs*. "Bad"), and 5 (upward *vs*. same-level comparison target) were single categorization blocks of 20 trials. The remaining blocks

were combined-task blocks, and involved the critical trials of the task. Blocks 3 and 6 and Blocks 4 and 7 were 20- and 40-trial blocks, respectively. The order in which the combined tasks are performed has been found to affect IAT scores, with a stronger IAT effect when congruent trials (e.g., flower names and pleasant words *vs*. insect names and unpleasant words) are administered in the first combined task (Greenwald, Nosek, & Banaji, 2003). To control for this order effect, we randomized the order of the congruent (i.e., upward comparison target and "Bad" words *vs*. same-level comparison target and "Good" words) and incongruent trials (i.e., same-level comparison target and "Bad" words *vs*. upward comparison target and "Good" words) across participants. Presentation of stimuli, order of blocks, and response recording were controlled using the E-prime software (Psychology Software Tools, Pittsburg, PA). Sequence of trial blocks is shown in Table 1.

IAT scores were computed following the scoring algorithm by Greenwald et al. (2003), using data from Block 3, 4, 6, and 7: trials with latencies > 10,000 ms were removed, as well as participants with > 10% of trials with latencies < 300 ms; pooled standard deviations were calculated for all correct response trials in B3 and B6, and in B4 and B7, separately; error latencies were replaced with a penalty consisting of the block mean + 600 ms; the differences in mean latencies between Blocks 6 and 3 and between Blocks 7 and 4 were calculated, and divided by its associated standard deviation; the two quotients were averaged to provide a IAT effect. IAT scores thus expressed the ease with which subjects associated "Good" *vs*. "Bad" words with the upward comparison target, with higher scores reflecting quicker associations of Upward-Bad and Same-level-Good relative to Upward-Good and Same-level-Bad. In particular, positive and negative IAT scores reflected a relative preference for the same-level and the upward comparison target, respectively, whereas the zero-point reflected implicit indifference. Internal consistency of the IAT was measured by the split-half technique, by computing the Pearson's correlation between an IAT measure

based on odd trials in each of Blocks 4 and 7 and another based on even trials in the same blocks (Greenwald et al., 2003). There was a strong correlation (r = .65, p < .001) between the two partial measures, indicating adequate IAT reliability.

Social desirability. After completing the experiment, participants completed the MCSDS-9 (Manganelli Rattazzi et al., 2000; see Chapter 2 for a description of the MCSDS-9).

Table 1. Implicit association test. Sequence of trial blocks

Block	N trials	Function	Left-key items	Right-key items
1	20	Practice	Same-level comparison target	Upward comparison target
2	20	Practice	"Good" words	"Bad" words
3	20	Test	"Good" words + Same-level comparison target	"Bad" words + Upward comparison target
4	40	Test	"Good" words + Same-level comparison target	"Bad" words + Upward comparison target
5	20	Practice	Upward comparison target	Same-level comparison target
6	20	Test	"Good" words + Upward comparison target	"Bad" words + Same-level comparison target
7	40	Test	"Good" words + Upward comparison target	"Bad" words + Same-level comparison target

Note. Items for the social comparison targets were pictures

3.3.4. Statistical Analyses

To examine whether episodic and dispositional envy have identical features, two CFAs were performed to test the CEQ-D two-factor model and an alternative one-factor model for the CEQ-E associated to the upward social comparison scenario. The Satorra-Saris method (Satorra & Saris, 1985) was used in the a priori estimation of the sample size needed to have a power of .80 to detect the factor covariance of Inferiority and Ill will found in Study 1 (r = .64) as significantly different from zero. A null model was compared to an alternative model with parameters obtained from the CFA performed on the CEQ-D (Study 1). Model parameters were estimated using the robust maximum likelihood method, which is recommended for moderately sized samples and deviations from multivariate normality (Curran, West, & Finh, 1996). The proposed two-factor model was evaluated through the following goodness-of-fit indexes: Satorra-Bentler scaled χ^2 statistic (S-B χ^2; Satorra & Bentler, 1988); Root Mean Square Error of Approximation (RMSEA, cut-off < .08; Browne & Cudeck, 1993); Standardized Root Mean Square Residual (SRMR, cut-off < .08) and Non-Normative Fit Index and Comparative Fit Index (NNFI and CFI, respectively, cut-off ≥ .95) (Hu & Bentler, 1999). The goodness of fit of an alternative one-factor model was also examined, and the two competing models compared by inspecting their respective fit indices. Modification indices of the selected model were inspected in order to evaluate whether model fit would significantly improve by adding new paths to the model. Modification indices greater than 4 were considered large enough for model re-specification (Brown, 2006) only in case of both statistical and theoretical importance for the CEQ-E model (Kaplan, 1990).

Internal consistency of the CEQ-E was assessed by calculating Cronbach's alpha (cut-off ≥ .70; Nunnally, 1978), Cronbach's alpha if item deleted, and corrected item-total correlations (≥ .30; Streiner & Norman, 2008). Possible differences in internal consistency

between CEQ-D and CEQ-E scales were examined using Feldt's (1980) test of the equality of two Cronbach's alpha coefficients from the same sample (n = 72).

The validity of the scenarios was checked by comparing CEQ-E scores across scenarios, using repeated measure ANOVAs with gender, scenario order (i.e., envy-neutral *vs*. neutral-envy), appearance (blonde *vs*. black-haired) and placement (left *vs*. right) of the upward comparison target as between-subject factors, and scenario (i.e., envy-evoking *vs*. neutral) as a repeated measure.

To ascertain the appropriateness of using a self-report measure of envy and simultaneously collect further evidence of construct validity for the CEQ-E, the association between explicit and implicit episodic envy was investigated. Explicit episodic envy scores were computed by dividing the difference in scores between the upward comparison target and the same-level comparison target by the scores referred to the upward comparison target. This computation was performed to obtain relative scores of explicit episodic envy that reflected difference scores of the absolute envy scores referred to the two target concepts (i.e., upward and same-level comparison targets), while controlling for the higher envy scores associated to the upward social comparison target, in line with the IAT effect (D' score), which expresses the relative strength of associations between two pairs of concepts.

Pearson's correlations between CEQ-E and IAT scores were calculated, and ANOVAs were performed to compare explicit envy between subjects with negative IAT scores (i.e., with an implicit preference for the upward comparison target) and subjects with positive IAT scores (i.e., with an implicit preference for the same-level comparison target), controlling for gender and IAT order (congruent *vs*. incongruent trials first). It is noteworthy that the implicit preference for the upward comparison target could be seen as a form of implicit admiration towards this target, whereas the implicit preference for the same-level comparison target could be seen as an implicit envious attitude towards the upward comparison target.

To investigate a potential socially desirable response bias in explicit ratings of episodic envy, correlations between the CEQ-E and the MCSDS-9 were also calculated.

To examine quantitative differences between dispositional and episodic envy, a repeated measure ANOVA was conducted to compare the intensity of dispositional and episodic envy for both subscale and overall envy scores, controlling for gender.

To assess the criterion, predictive validity of the CEQ-D, multiple linear regression analyses were performed to quantify the influence of dispositional envy scores on subsequent, explicit as well as implicit scores of episodic envy towards an upward social comparison target. Gender and dispositional envy scores were entered as predictors on the first and second step, respectively. A sample size of at least 55 subjects was established a priori to detect an expected medium effect size ($f^2 > .15$) with a power 0.80 or greater and alpha = .05 (two-tailed).

Separate ANOVAs were used instead of MANOVA as the dependent variables were highly intercorrelated (Tabachnick, & Fidell, 1996). Results were evaluated in terms of both statistical significance (significance level set at $p < .05$) and effect size, with Pearson's *r* of .10, .30, and .50, standardized mean differences (Cohen's *d*) of 0.20, 0.50, and 0.80, and f^2 of .02, .15, and .35 corresponding to small, moderate, and large effects, respectively (Cohen, 1988). CFAs were performed using LISREL 8.80 (Scientific Software International, Lincolnwood, IL); Feldt test for dependent samples was performed using the cocron package of R (Version 1.0-0) (Diedenhofen, 2013); all other analyses were performed with IBM SPSS 20 (SPSS Inc., Chicago, IL). Sample sizes were calculated a priori with the statistical software G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007).

3.4. Results

3.4.1. Participants' Characteristics

The experimental sample initially consisted of 135 participants (52.3% female). Forty subjects were excluded due to technical errors in IAT data acquisition, and data from an additional four subjects (100% males) were not included due to unusually short IAT response times (i.e., > 10% of trials with latencies < 300 ms). The final sample thus comprised 91 undergraduates (56% females) from different academic majors, who completed the experiment in all its parts. Among these, 72 (79.1%) had responded to the e-mail invitation and completed the CEQ-D one month before the experiment, whereas the remaining subjects either responded to advertisement or were recruited through word of mouth. The final sample characteristics are reported in Table 2.

Table 2. Characteristics of Study 2 participants (N = 91)

	N (%)
Female	51 (56)
Age[a]	23.07 (2.47; 19-28)
Academic major	
Humanities and Languages	16 (17.6)
Law and Economics	13 (14.3)
Nursing and Medicine	10 (11)
Psychology	12 (13.2)
Science and Engineering	14 (15.4)
Year of study	
1st	15 (16.5)
2nd	9 (9.9)
3rd	21 (23.1)
4th	9 (9.9)
5th	37 (40.7)

[a] *M* (*SD*; range)

3.4.2. The Configuration of Episodic Envy

To examine whether episodic envy have the same configuration as dispositional envy, two CFAs were conducted on data from the initial study sample (N = 135) to test the two-factor model of dispositional envy emerged from Study 1 and an alternative one-factor model. Fit indices for the one-factor model were not satisfactory, indicating that a model with a single latent variable was not a good representation of the CEQ-E structure, whereas those for the two-factor model indicated an adequate fit to the data (Table 3). In the latter model modification indices for factor loadings were generally low (MI range = 0.09-5.40), except those for items 8 and 9, which were greater than 4. Based on its theoretical significance, and also considering results from Study 1, item 8 was allowed to cross-load on both envy dimensions. Nevertheless, the goodness of fit of this alternative two-factor model did not significantly differ from that of the previous two-factor model [ΔS-B $\chi^2(2) = 3.40$, $p = .001$], which was thus selected. No substantive rationale supported the addition of freely estimated error covariances suggested by the modification indices for covariances of error residuals.

In the selected two-factor model, each CEQ-E item loaded significantly ($p < .001$) on its assigned latent variable, with standardized factor loadings ranging from .38 and .65 for Inferiority and .69 to .94 for Ill will (Figure 1). Correlation between factors was .51 ($p < .001$), indicating that the CEQ-E measures two non-overlapping, although highly related, dimensions. The high correlation between the two core features of episodic envy supports the suitability of calculating also an overall episodic envy score.

Thus, consistent with *Hypothesis 1*, the CEQ-E was found to have the same internal structure of CEQ-D, suggesting that the core features of inferiority and ill will are common to both dispositional and episodic envy. Just as dispositional envy, the temporary, situation-specific emotion of episodic envy is characterized by the joint occurrence of inner- and outer-directed painful feelings.

Figure 1. Measurement model of the CEQ-E with standardized parameters

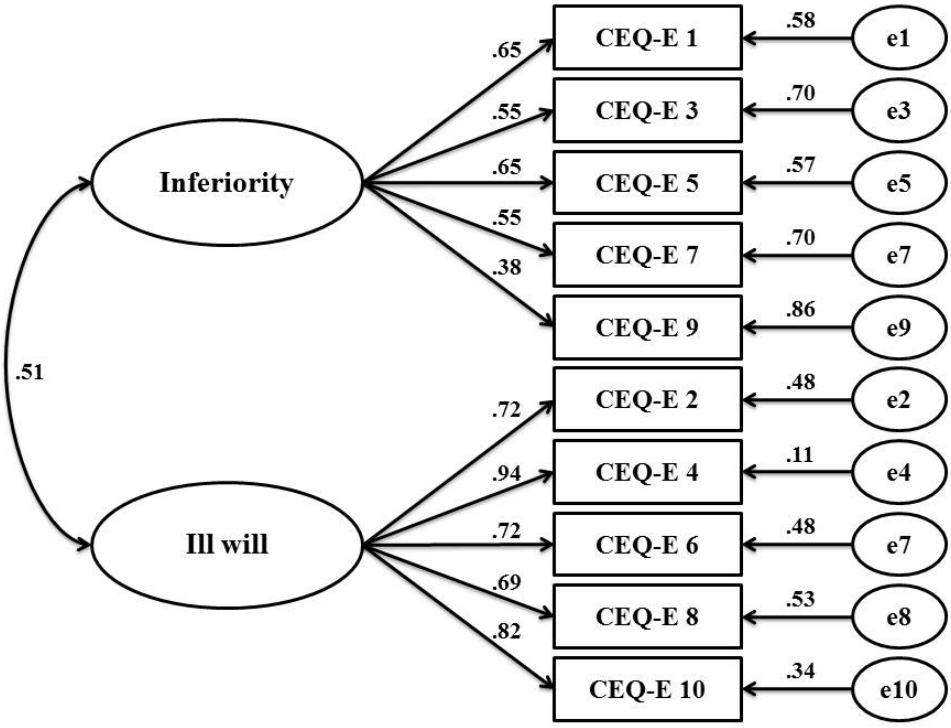


Table 3. Goodness of fit indices for one- and two-factor models

Fit indices	One-factor model[a]	Two-factor model[b]	Alternative two-factor model[c]
χ^2	112.48**	57.92*	52.98*
S-B χ^2	135.27**	58.41*	55.02*
RMSEA (CI 90%)	.15 (.12-.18; $p < .001$)	.08 (.04-.11; $p = .10$)	.07 (.04-.11; $p = .14$)
SRMR	.11	.07	.06
NNFI	.83	.96	.93
CFI	.87	.97	.97

[a] $df = 35$; [b] $df = 34$; [c] $df = 33$; * $p < .01$; ** $p < .001$

3.4.4. Reliability

Internal consistency reliability was adequate, with Cronbach's alpha coefficients from .75 to .77, .86 to .90, and .86 to .87 for the Inferiority, Ill will, and Total scale, respectively. Corrected item-total correlations were higher than .30, and all items contributed to the internal consistency of their respective scale. The only exception was item 9, which, for both scenarios, did not contribute to the homogeneity of its scale. Reliability estimates across scenarios are shown in Table 4.

The internal consistency coefficients of the CEQ-E scales associated to the upward social comparison scenario did not significantly differ from those of the CEQ-D [Inferiority: $\chi^2(1) = 3.97$, $p = .05$; Ill will: $\chi^2(1) = 0.46$, $p = .50$; $n = 72$]. With respect to the CEQ-E associated to the same-level social comparison scenario, the Cronbach's alpha coefficient of the Inferiority scale was significantly lower than that of the CEQ-D [$\chi^2(1) = 4.62$, p = .03], whereas no difference in internal consistency was found between the episodic and dispositional Ill will scales [$\chi^2(1) = 0.09$, p = .77].

Table 4. Reliability estimates across scenarios

Item	Upward social comparison			Same-level social comparison		
	Corrected item-total correlations	**Cronbach's alpha if item deleted**	**Cronbach's alpha**	**Corrected item-total correlations**	**Cronbach's alpha if item deleted**	**Cronbach's alpha**
1. X has it better than I do.	.54	.74	.77	.56	.68	.75
3. X feel that I lack some of the qualities that X has.	.59	.72		.69	.62	
5. I would like to trade places with X.	.58	.72		.54	.69	
7. I would like to be like X.	.60	.71		.41	.74	
9. Between X and me, I seem to be the only one who never gets what he/she wants.	.44	.77		.39	.75	
2. It would make me feel good to "rain on X's parade".	.74	.88	.90	.56	.87	.86
4. I wish X would fail in something**.**	.86	.85		.68	.84	
6. I feel angry for X's results.	.71	.88		.67	.84	
8. It bothers me that X has it better than I do.	.74	.88		.43	.77	
10. I hope X would make a mistake.	.72	.88		.61	.85	
Total CEQ-E			.86			.87

Note. Items were written in Italian to be administered to Italian samples, and were then translated into English yet not reviewed for linguistic appropriateness**.**

3.4.5. Manipulation Check

As a manipulation check, CEQ-E scale scores were compared across scenarios, using repeated measure ANOVAs with gender, scenario order, picture and placement of the upward comparison target as between-subject factors, and scenario as a repeated measure (Table 5).

With respect to Inferiority scores, there was a significant interaction between gender and scenario [$F(1,75) = 6.51$, $p = .01$]. Inferiority scores were significantly higher in the upward than in the same-level social comparison scenario, with this effect being stronger among women [$F(1,50) = 240.83$, $p < .001$, $d = 2.53$] than among men [$F(1,39) = 75.00$, $p < .001$, $d = 1.84$]. No significant interaction was found for the remaining between-subject factors, indicating that inferiority towards the upward comparison target was higher than inferiority towards the same-level comparison target, regardless of scenario presentation order, picture of the upward comparison target and its placement on the screen. There were no between-subject effects, indicating that Inferiority scores for each single scenario were not affected by gender, scenario order, picture of the upward comparison target or its placement on the screen.

No significant interaction was found for Ill will scores, indicating that ill will was significantly higher in the upward than in the same-level social comparison scenario [$F(1,75) = 44.02$, $p < .001$, $d = 0.91$), regardless of gender, scenario presentation order, picture and placement of the upward comparison target. A significant between-subject main effect was found for scenario presentation order, with ill will scores towards the same-level comparison target being significantly higher when the same-level social comparison scenario was presented first [$F(1,75) = 11$, $p = .001$, $d = 0.73$).

When considering total CEQ-E scores, no significant interaction was found. Thus, global episodic envy scores were significantly higher in the upward than in the same-level social comparison scenario [$F(1,75) = 150.39$, $p < .001$, $d = 1.77$], regardless of gender,

scenario presentation order, picture and placement on the screen of the upward comparison target. The absence of significant between-subject effects indicated that overall envy scores for each single scenario were neither affected by gender, scenario order, picture of the upward comparison target, nor its placement on the screen.

The manipulation check results thus supported *Hypothesis 2*, and revealed that the experimental manipulations were successful in evoking envy towards the target protagonist of the upward social comparison scenario.

Table 5. Comparisons across scenarios

	Inferiority					Ill will					Total				
	Upward		*Neutral*			*Upward*		*Neutral*			*Upward*		*Neutral*		
	M	***SD***	***M***	***SD***	***Interaction*[a]**	***M***	***SD***	***M***	***SD***	***F*[a]**	***M***	***SD***	***M***	***SD***	***F*[a]**
Gender															
women (n = 51)	22.61	7.04	8.27	3.85	6.51^{*}	12.71	7.27	6.94	4.06	$.15^{ns}$	35.32	12.53	15.21	7.01	2.93^{ns}
men (n = 40)	19.00	5.51	9.68	4.55		12.03	6.33	26.25	7.53		31.03	9.82	17.21	8.22	
Scenario order															
Envy-neutral (n = 47)	21.34	6.29	7.72	3.56	3.33^{ns}	11.64	5.64	5.80	2.09	$.01^{ns}$	32.98	9.97	13.52	4.61	1.28^{ns}
Neutral-envy (n = 44)	20.68	7.02	10.14	4.51		13.23	7.91	8.69	5.37		33.91	13.15	18.83	9.11	
Picture															
blond (n = 56)	21.34	6.45	9.27	4.18	$.03^{ns}$	12.91	6.51	7.66	4.88	$.03^{ns}$	34.29	11.22	16.92	8.11	$.00^{ns}$
black (n = 35)	20.46	6.96	8.29	4.23		11.60	7.38	6.46	2.93		32.06	12.12	14.75	6.56	
Placement															
left (n = 43)	21.28	6.50	9.35	4.87	$.01^{ns}$	12.37	7.07	7.01	3.62	$.34^{ns}$	33.65	11.34	16.35	7.66	$.14^{ns}$
right (n = 48)	20.79	6.80	8.48	3.51		12.44	6.71	7.37	4.79		33.23	11.87	15.85	7.60	
Scenario	21.02	6.63	8.89	4.20		12.41	6.84	7.20	4.26		33.43	11.56	16.09	7.59	

$^{*}p < 0.05$; $^{ns}\ p > 0.05$; $^{a}\ F(1,75)$

3.4.6. Associations Between Explicit and Implicit Episodic Envy

It was preliminary investigated whether there was an effect of gender and order effect on IAT scores. While there were no gender differences in IAT scores [$F(1,87) = 1.23$, $p = .27$, $d = 0.23$], an IAT order effect was found [$F(1,87) = 5.51$, $p = .02$, $d = 0.49$], with subjects in the congruent trials first condition obtaining significantly higher implicit envy scores (Table 5).

The association between explicit and implicit episodic envy was then investigated to examine the appropriateness of using self-reports in envy assessment and to collect further evidence of the CEQ-E construct validity.

In partial disagreement with *Hypothesis 3*, there were no significant correlations between the IAT and explicit envy scores. As shown in Table 6, the strength of the associations between the IAT effect and CEQ-E subscale and total scores was negligible, the effect size being extremely low for Ill will.

Table 6. **Descriptive statistics of the IAT and correlations with explicit envy scores**

	IAT			CEQ-E		
	M	***SD***	**Range**	**Inferiority**	**Ill will**	**Total**
Total ($N = 91$)	.01	.44	-.88~1.05	.15	.08	.15
Congruent trials first ($n = 49$)	.11	.44	-.86~1.05	.12	.12	.14
Incongruent trials first ($n = 42$)	-.10	.42	-.88~.90	.20	.04	.17

Note. CEQ-E Inferiority, Ill will, and Total scores were computed by dividing the difference between scores referred to the upward comparison target and to the same-level comparison target by the scores referred to the upward comparison target.
All correlations were nonsignificant ($p > .05$)

Nevertheless, when considering negative and positive IAT score groups, an implicit-explicit concordance emerged from the ANOVAs (Table 7). No interaction effects were found, while there were significant main effects of both IAT scores (positive *vs*. negative) and gender. Subjects with positive IAT scores (i.e., with an implicit preference for the same-level

comparison target, that is with an implicitly envious attitude towards the upward comparison target), reported significantly higher Inferiority as well as Ill will scores than subjects with negative IAT scores (i.e., with an implicit preference for the upward comparison target), regardless of gender and IAT order. The strength of the differences between implicit envy groups was weak to medium, being slightly stronger for Inferiority (d = 0.47) than for Ill will (d = 0.43). The reported differences in explicit episodic envy scores between groups based on implicit episodic envy provided evidence of the construct validity of the CEQ-E, and partially supported *Hypothesis 3*.

Finally, women showed significantly higher episodic Inferiority scores than men (d = 0.59).

Table 7. Associations between explicit and implicit episodic envy

	Inferiority			***Ill will***		
	M	***SD***	***F*** [a]	***M***	***SD***	***F*** [a]
Gender						
Women (n = 51)	.60	.21	9.39^{**}	.32	.43	$.49^{ns}$
Men (n = 40)	.44	.34		.25	.64	
IAT scores						
positive (n = 45)	.60	.19	7.15^{**}	.40	.30	4.71^{*}
negative (n = 46)	.47	.35		.18	.67	
IAT order						
congruent (n = 49)	.53	.24	$.03^{ns}$	.29	.43	$.01^{ns}$
incongruent (n = 42)	.53	.34		.29	.63	

Note. Inferiority and Ill will scores were computed by dividing the difference between scores referred to the upward comparison target and to the same-level comparison target by the scores referred to the upward comparison target

[a] F(1,90); $^{*}p < 0.01$; $^{**}p < .01$; $^{***}p < 0.001$; $^{ns}p > 0.05$

3.4.7. Associations with Social Desirability

As shown in Table 8 and in agreement with *Hypothesis 4*, the correlation between the Inferiority scale of the CEQ-E and the MCSDS-9 was weak, whereas Ill will and Total CEQ-E scales were strongly and moderately associated with social desirability, respectively.

Nevertheless, when a social desirability item explicitly referring to envy (i.e., "There have been times when I was quite jealous of the good fortune of others", which contained the word "envious" in its Italian version) was removed, the associations with social desirability became nonsignificant for Inferiority, and moderate, and low to moderate for Ill will and overall envy, respectively. Thus, the Ill will scale of the CEQ-E might be affected by social desirability.

As expected based on the use of an indirect self-report measure, correlations with social desirability were lower for inferiority and overall episodic envy than for inferiority and overall dispositional envy, which had been measured with a direct self-report. Nevertheless, different from what expected, associations between indirect episodic ill will and social desirability were as strong as those found in Study 1 where subjects were directly questioned about (dispositional) ill will.

Table 8. Bivariate correlations between envy and social desirability measures

	MCSDS-9	MCSDS-8
CEQ-D Inferiority	-.29*	-.18^{ns}
CEQ-D Ill will	-.51***	-.44**
CEQ-D Total	-.45***	-.34*

Note. n = 49; MCSDS-8 = 9-item Marlowe Crowne Social Desirability Scale, after removing one item referring to envy;
^{ns} $p > .05$; * $p < .05$; ** $p < .01$; *** $p \leq .001$

3.4.8. Quantitative Differences between Dispositional and Episodic Envy

Results of repeated measures ANOVAs showed that episodic envy scores were significantly higher than dispositional envy scores for both CEQ dimensions. There was no significant interaction between gender and CEQ version for either Inferiority [$F(1,70) = 2.63$, $p = .11$] or Ill will [$F(1,70) = 3.58$, $p = .06$] dimensions. Episodic inferiority scores ($M = 21.51$, $SD = 6.64$) were significantly higher than dispositional inferiority scores ($M = 11.4$, $SD = 6.09$) [$F(1,70) = 156.28$, $p < .001$, $d = 1.59$]. Similarly, although with a much lower effect

size, episodic ill will scores (M = 12.51, SD = 6.89) were significantly higher than dispositional ill will scores (M = 10.14, SD = 5.76) [$F(1,70) = 6.97$, $p = .01$, $d = 0.49$]. With respect to overall envy scores, there was a significant interaction between gender and CEQ version [$F(1,70) = 4.41$, $p = .04$]. Overall scores were significantly higher for episodic envy (M = 34.03, SD = 11.63) than for dispositional envy (M = 21.54, SD = 9.78), with this effect being stronger among women [$F(1,40) = 52.77$, $p < .001$, $d = 1.27$] than among men [$F(1,30) = 29.81$, $p < .001$, $d = 1.01$].

3.4.9. Predictive Validity of the CEQ-D

Linear regression analyses (Table 9) showed that episodic inferiority towards the upward comparison target was significantly predicted by both female gender and dispositional inferiority, with the model explaining 22% of variance. Most of this variance was accounted for by dispositional inferiority, with being female explaining about 6% of the variance in episodic inferiority. Episodic ill will towards the upward comparison target was significantly predicted by dispositional ill will only, which accounted for 15% of the variance.

Thus, for both episodic envy dimensions, results supported *Hypothesis 5a*, with dispositional envy scores accounting for a medium amount of variance in subsequent episodic envy scores. Results from linear regression analyses supported the criterion predictive and concurrent validity of CEQ-D and CEQ-E, respectively, although the effect size was moderate for both CEQ components.

As shown in Table 9, no support was found for *Hypothesis 5b*, since linear regression analyses indicated that there were no significant associations between dispositional envy and IAT scores.

Table 9. Multiple linear regression analyses

	CEQ-E Inferiority					CEQ-E Ill will					IAT effect				
	β	***t***	***Adj R^2***	***F***	***Δ R^2***	***β***	***t***	***Adj R^2***	***F***	***Δ R^2***	***β***	***t***	***Adj R^2***	***F***	***Δ R^2***
Model 1[a]			.07	5.98^{*}				-.01	$.15^{ns}$		-.11	$-.94^{ns}$	.00	$.89^{ns}$	
gender	.28	2.45^{*}				.05	$.38^{ns}$								
Model 2[b]			.22	7.61^{***}	$.17^{***}$			.15	5.11^{**}	$.18^{***}$			.02	$.64^{ns}$	$.02^{ns}$
gender	.24	2.23^{*}				.12	1.05^{ns}				-.09	$-.74^{ns}$			
CEQ-D Inferiority	.41	3.61^{***}				.09	$.79^{ns}$	.60			.03	$.25^{ns}$			
CEQ-D ill will	.01	$.09^{ns}$				.39	3.20^{**}	.44			.11	$.81^{ns}$			

Note. $n = 72$; $^{ns}\, p > .05$; $^{*}\, p < .05$; $^{**}\, p < .01$; $^{***}\, p \leq .001$; [a] $df1 = 1$, $df2 = 71$; [b] $df1 = 1$, $df2 = 73$

3.5. Discussion

The main aim of the present study was to establish the core features of episodic envy and, in particular, to clarify whether dispositional and episodic envy share the same configuration and can thus be considered as qualitatively equivalent. Findings from Study 1 revealed that dispositional envy is the inclination to experience envy as a combination of painful feelings that vary as to their direction. Its main component is represented by an inner-directed mixture of feelings of inferiority and helplessness. Noteworthy, sense of inferiority in dispositional envy is experienced as a consequence of the acknowledgement of one's lacking position compered to others, with the contemporary feeling of powerless helplessness with respect to the possibility of overcoming one's disadvantaged condition and achieving the desired attributes or successes that are enjoyed by someone else. Next to such a dangerous feeling for the individual's self-worth, dispositional envy also implies an outer-directed blend of anger and ill will, which arguably serves as an assertive defense in response to a threatened self. Within the envious configuration, the private experience of a defective personal condition relative to other people entails feelings of anger towards the superior others and the wish that they go through some failure likely to damage their advantaged status. These inherent ingredients of inner-directed inferiority and outer-directed ill will thus serve as the key markers for distinguish envy from competing emotional experiences such as resentment and hostility. Indeed, resentment and hostility both share with envy a negative affective connotation and a social nature, yet lack those feelings of helplessness that typify the experience of an unfavorable comparison in envy, as well as are free of that kind of hostile anger that in envy is inherent to the wish that the others suffer a loss in their enviable status.

Assuming an episodic approach to envy, inferiority and ill will are thus assumed to be necessary conditions for a painful social-comparison based emotional experience to be properly called envy. In order to elicit the envious experience, the contextual components of

envy were experimentally created by designing an envy evoking scenario, in which two differently advantaged students compared themselves in domains potentially relevant to college-aged individuals (Salovey & Rodin, 1984; Schaubroeck & Lam, 2004; Silver & Sabini, 1978; Smith & Kim, 2007; Tesser & Collins, 1998). A within-subject experiment was conducted, in which participants were presented with an upward and a same-level social comparison scenario designed to be envy-eliciting and neutral, respectively. As expected, episodic envy rates were higher for the upward than for the same-level social comparison condition, indicating that the upward social comparison scenario had been successful in evoking the emotional experience of envy.

Findings supported the joint occurrence of inner- and outer-directed temporary feelings in episodic envy, just as in dispositional envy. Indeed, a confirmatory factor analysis revealed an acceptable fit to the data of a two-factor model conceptualizing envy as composed by an inner-directed inferiority dimension and an outer-directed component of feelings of ill will. The construct validity of the episodic version of the Core Envy Questionnaire was thus supported. In addition, this finding indicated that the bidimensional model of dispositional envy was an adequate representation of episodic envy. In contrast with previous studies suggesting the unidimensionality of the temporary, episodic manifestation of envy (Gino & Pierce, 2009; Smith et al., 1996), and against a conceptualization of dispositional and episodic envy as qualitatively different (Cohen-Charash, 2009), the present study established a dispositional-episodic correspondence in envy, which lies on that the trait and state facets of envy showed the same configuration, with the simultaneous occurrence of inferiority and ill will feelings. Thus, dispositional and episodic envy have been demonstrated to be qualitatively alike, in that both entail the same emotional experience, although differ in their intensity. Indeed, in line with previous findings (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007), episodic envy was found to be more intense than dispositional envy, and this

difference was especially accentuated for the inferiority dimension. This suggests that, as hypothesized, the situation-specific, perceived disadvantage relative to a superior target also involves inner-directed feelings of inferiority in envy, rather than merely expressing the cognitive component of recognizing one's own lacks. Thus, in contrast with previous interpretations (Cohen-Charash, 2009), inferiority is not a prerogative of dispositional envy, but is also part of the temporary envious feeling. In particular, as indicated by results from confirmatory factory analysis in the present study, the acknowledgement of one's lacking position in episodic envy is an inner-directed declaration of inferiority that is blended with helplessness, as also highlighted in conceptualizations by other scholars (Miceli & Castelfranchi, 2007). In light of the latter, it would be reasonable to reconsider the comparison component of Cohen-Charash's (2009) episodic envy as tapping a definitional component of benign rather than of malicious envy, in line with our initial suggestion. Nevertheless, previous evidence of ill will as a core component of episodic envy (Cohen-Charash, 2009) found strong support in the present study, since Cohen-Charash's feeling component, which is made of feelings of hatred, anger, and ill will, is also represented in the CEQ-E outer-directed, ill will dimension.

With respect to gender differences, genders did not differ in overall dispositional nor episodic envy, but women showed higher inner-directed feelings of both dispositional and episodic inferiority than men; nonetheless, men showed higher dispositional but not episodic ill will compared with women. This finding might be related to higher levels of neuroticism among female than male college students (e.g., de Vibe et al., 2013; Fornés-Vives, García-Banda, Frías-Navarro, Hermoso-Rodríguez, & Santos-Abaunza, 2012), which may compensate for gender differences in the dispositional tendency to feel ill will found in Study 1.

As also emerged in previous studies (Cohen-Charash, 2009; Cohen-Charash & Mueller, 2997; Krizan & Johar, 2012), dispositional and episodic envy were found to be moderately associated. This moderate dispositional-episodic association may be interpreted in light of the greater intensity of episodic envy, which was experienced by subjects in the experimental setting and was thus more accessible compared to the retrospective self-reporting of a generic tendency to feel envy. Nevertheless, the ability of dispositional envy to effectively predict subsequent episodic envy scores, besides supporting the criterion predictive and concurrent validity of the CEQ-D and CEQ-E, respectively, also corroborates the appropriateness of considering, next to the temporary envious emotion that anyone may experience when facing an unfavorable social comparison, the existence of an envious disposition, that is, the inclination to experience envy with higher intensity and frequency (e.g., Lazarus, 1994).

Another important aim of the present study was to investigate the feasibility of using self-report measures in the assessment of envy. Indeed, due to the socially undesirable and often masked nature of envy, the use of explicit measures may introduce problems of measurement accuracy. To address this issue, we designed an adaptation of the IAT in order to assess subjects' automatic expressions of a negative attitude towards the advantaged target of the upward social comparison scenario, which was considered as an implicit, indirect manifestation of episodic envy. We examined the association between a relative envy score and the IAT measure, in which two different target concepts are integrated. We computed a relative envy score based on Hofmann et al.(2005), who found higher correlations with the IAT for relative self-report measures or final scores compared to absolute self-reports, in which only one target category was considered within the item stem or the response format. Nevertheless, we found no significant associations between implicit and explicit episodic scores. The lack of an explicit-implicit correlation in the present study is open to different

interpretations. First, it may be attributable to the socially sensitive nature of envy, since Greewald et al. (2009) found that the social sensitivity of the topic under study negatively affected explicit-implicit associations. Indeed, the CEQ-E was significantly negatively associated with a measure of social desirability, possibly indicating a response factor in episodic envy explicit ratings that would contribute to explain the lack of a significant correlation between the CEQ-E and the IAT (Hofmann et al., 2005). In support to this consideration, the stronger association with social desirability was obtained by the CEQ-E ill will component, which also was the CEQ-E dimension most weakly related to the IAT effect. Another possible explanation relates to the type of self-report used, since the type of explicit measure has been found to be a moderator of the explicit-implicit relationship, with questionnaires showing the lower correlations with the IAT, compared with other types of self-reports, such as semantic differentials, adjective ratings, and feeling thermometers (Hofmann et al., 2005). Furthermore, since the correlations may be negatively affected by self-report measures that are only indirectly related to the representation assessed by the IAT (Hofmann et al., 2005), this may be especially critical with the use of an indirect explicit measure, like in the present study. As to the characteristics of the IAT, the kind of attribute stimuli presented to subjects during the IAT may also have participated to the lack of a self-report-IAT association. Indeed, we used both evaluative nouns and adjectives, while evaluative nouns have been found to be associated with greater explicit-implicit correspondence compared to thematic words or evaluative adjectives, which arguably share additional underlying associations with the target categories that impair the assessment of the intended attribute-category association (Hofmann et al., 2005). With respect to the target stimuli used in the IAT, a low complementarity between the two categories contrasted in the scenario-based IAT may have negatively affected the explicit-implicit correlation. Indeed, a high complementarity between the target categories has been found to be associated with a

higher predictive validity of the IAT (Greenwald et al., 2009), while, as to the present study, having a more negative attitude towards the upward comparison target might not necessarily imply having a more positive attitude toward the same-level comparison target and vice-versa. Moreover, counterbalancing the order of compatible and incompatible IAT blocks may have contributed to attenuate implicit-explicit associations (e.g., Gawroski, 2002), although Hofmann et al.'s (2005) meta-analysis suggested the opposite pattern, with higher explicit-implicit correlations for studies in which the IAT order was balanced across participants. Lastly, the IAT's sensitivity to emotion-eliciting experimental manipulations is not well documented yet (e.g., Schmukle & Egloff, 2002; Verkuil et al., 2014), and more studies are needed to establish the feasibility of using the IAT to assess episodic or state emotions. At the same time, it is possible that the IAT and the CEQ-E measured two relatively independent constructs, as the scenario-based IAT used in the present study served as an implicit measure of a positive *vs*. negative episodic attitude towards an upward comparison target that, as indicated by the manipulation check results, was more highly explicitly envied compared to the same-level comparison target. Most of the mentioned interpretations can be also invoked in the attempt to explain the absence of significant associations between the CEQ-D and the IAT.

Despite all the above, it seems that we can confidently exclude any introspective limit from the self-report assessment of episodic envy. By definition, self-reports on sensitive topics, as is the case of envy, are characterized by a higher cognitive elaboration, due to the need for a higher introspection, compared with less sensitive topics. Thus, the need for introspection might make envy self-reports more based on cognitive rather than affective aspects, what would suppress the associations with the IAT, which has been often designated as a measure of automatic affective rather than cognitive evaluations (e.g., Hofmann et al., 2005; Wilson, Lindsey, & Schooler, 2000). Nevertheless, we believe that the CEQ-E can be

conceptually considered as a spontaneous self-report, at least in that it was responded by subjects immediately after the presentation of the upward social comparison scenario, what was expected to lead to greater spontaneity and lower introspective demands and cognitive effort for retrieving the information from memory, due to the close availability of an unfavorable social comparison for the subject. Since a high spontaneity of the self-report measure has been found to enhance the explicit-implicit correspondence (Hofmann et al., 2005), the lack of a significant correlation between the CEQ-E and the IAT is arguably not attributable to individuals' difficulty in accessing their mental representations of envy.

Despite the proposed explanations for a nonsignificant correlation between the CEQ-E and the IAT, a sort of "explicit-implicit correspondence" was found for episodic envy when comparing negative and positive IAT score groups in CEQ-E scores. Indeed, subjects with a more positive implicit attitude towards the same-level comparison target than towards the upward comparison target, that is, participants with higher implicit scores, showed higher explicit episodic envy, on both CEQ-E dimensions, compared with subjects with a more positive implicit attitude towards the upward comparison target than towards the same-level comparison target, that is, compared with participants with lower implicit scores. This finding provided strong evidence of validity for the CEQ-E, which, although potentially affected by socially desirable responses in its ill will dimension, was found to be sensitive to differences between groups based on an implicit external criterion.

Altogether, the present study added to the knowledge of emotional awareness in envy. Indeed, having discarded introspective limits, the lack of an explicit-implicit correlation might be interpreted as evidence in support of envy as an aware emotion. Thus, the positive correlation between the CEQ-D and the TAS-20 found in Study 1 can be confidently attributed to the strong association with negative affect that both constructs of envy and alexithymia share.

Finally as to the feasibility of using the IAT for capturing experimentally-elicited state emotions, the present study provided initial evidence of a correspondence between indirect self-reported ratings of episodic envy and automatic expressions of negative attitudes towards an upward social comparison target, as a first data in support to the use of scenario-based adaptations of the IAT.

3.6. Limitations

The present study presents a series of limitations that need to be considered when interpreting the results. The main limitation relies on generalizability of findings, since all participants were college students. The generalizability of findings may be limited also by the experimental nature of the study, where a convenience sample was used. Thus, the results of the present investigation need to be cross-validated with samples possibly randomly selected from the general population and further supported by the use of the CEQ-E in non-experimental settings.

In the attempt to limit socially desirable responses, we used an indirect self-report, by asking subjects to identify themselves with the disadvantaged scenario protagonist and indicate how they would feel towards the superior other. Thus, evidence of validity for the CEQ-E is currently limited to its indirect version used in the present study. Future investigations are needed in order to examine the psychometric properties of a parallel CEQ-E direct version.

Another limitation lies in that we were not able to definitely exclude introspective limits in envy assessment. Indeed, we did not include a measure of spontaneity or deliberate processing in responding to the CEQ-E. For instance, recording reading times during the administration of the CEQ-E items would have provided a measure of cognitive processing in

self-report responding that would have been useful to investigate the potential contribution of the CEQ-E spontaneity to the lack of an explicit-implicit association.

Moreover, the scenarios designed for the present study in order to elicit episodic envy included the envy-eliciting components of similarity with the advantaged target and self-relevance of the comparison domain (e.g., Salovey & Rodin, 1984; Smith & Kim, 2007; Tesser & Collins, 1998), yet we did not ascertained that the scenario protagonists were indeed perceived as similar and the described comparison domains were actually considered as relevant ones by participants, which would have allowed us to use only data from selected participants, potentially increasing the likelihood of observing an implicit-explicit correspondence. Modified replications of the proposed experiment would be useful in order to investigate whether the CEQ-E is also sensitive to the manipulation of contextual components of envy such as the perceived deservingness of the other's superiority and perceived control over the situation, which, based on previous studies (e.g., Van de Ven et al., 2012), are likely to differentially affect the inner- and the outer-directed components of episodic envy. The present study did not address the emotional and behavioral correlates of episodic envy, thus not enabling us to draw conclusions about the constructive and destructive outcomes associated to malicious episodic envy, and thus to definitely establish the kind of envy tapped by Cohen-Charash's (2009) envy comparison component.

The within-subject manipulation of the direction of social comparison enabled us to compare participants' emotional reactions across different social comparison situations. This allowed to obtain a relative envy score as well as to control for potentially confounding participants' characteristics, such as meanings attributed to social comparison situations, self-relevance of the described comparison domains, and tendencies to feel inferior and ill-willed towards advantaged others. At the same time, the within-subject manipulation did not allow the exclusion of a potential contamination derived from the reading of two scenarios.

Future studies should further investigate the proposed quantitative difference between dispositional and episodic envy. Indeed, the higher ratings found for episodic compared to dispositional envy may be partly attributable to a good-subject effect, that is, participants' intrinsic motivation to please the experimenter by behaving as to confirm what they see as the objective of the study, which may have led participants to exaggerate their reported feelings of envy towards the target of the upward social comparison scenario. Although no subject expressed suspicion about the study objective in the post-experiment debriefing, the relative distance between the two protagonists of the upward social comparison scenario might have seemed unrealistic to subjects, thus leading them to deliberately exaggerate in reporting envy in a way that was consistent with their hypothesized study objectives. In support of this, participants who saw the upward social comparison scenario first then reported significantly lower ill will towards the same-level comparison target than subjects who saw the upward social comparison scenario second. Moreover, the good-subject effect seems to primarily involve volunteers (Goldstein, Rosnow, Goodstadt, & Suls, 2002), as is the case of the present study sample.

3.7. Conclusions

With the present study, we finally clarified the envious configuration and brought together the dispositional and episodic approaches. Envy, in both its dispositional and episodic facets, is a painful, social comparison-based emotion that is experienced as the jointly occurrence of inner-directed inferiority feelings and outer-directed feelings of anger and ill will. Overcoming the retrospective nature of Study 1, we provided support of the CEQ-D ability to predictive validity subsequent CEQ-E scores, thus corroborating the validity of considering envy as both a dispositional and an episodic emotion.

The CEQ-E used in the present study proved to be a psychometrically founded tool for the assessment of episodic envy, showing good internal and criterion validity, and adequate reliability. Thus, with the present study, we provided a shared tool for the assessment of the envious emotion, with two different versions of the CEQ that measure either dispositional or episodic envy yet refer to the same underlying construct. Such versions are identical, with the only difference being the instructions given to respondents. The availability of two parallel tools for the assessment of episodic and dispositional envy represents an important starting point in order to conciliate the situational and episodic approaches in envy research. Indeed, the use of two parallel forms of the same instrument will facilitate the comparison of findings across studies, what may further enhance our understanding of the envious emotion.

Now that the problem of the self-reported assessment of envy seems to be overcome, future research is needed to investigate which life conditions may lead to a stable tendency to experience envy with enhanced intensity and frequency in front of an upward social comparison. Moreover, future studies should examine how envy affects individual's wellbeing and social interactions, in order to clarify whether envy can have negative consequences on the individuals, as would be supposed based on the negative correlates of envy (e.g., Cohen-Charash, 2009; Gold, 1996; McCullough et al., 2002, 2004; Smith et al., 1999; Vecchio, 2000, 2005).

Lastly, the present study provided initial evidence of validity of using the IAT as a measure episodic emotions. Nevertheless, much more research is needed to definitely establish the IAT's sensitivity to emotion-eliciting experimental manipulations.

CHAPTER 4

Study 3: The Effects of Dispositional Envy on Perceived Social Support and Subjective Wellbeing: A Multiple Mediation Model

4.1. Introduction

Dispositional envy is a relatively stable sensitivity to envy-eliciting situations, which are enviously experienced with greater intensity and frequency. As emerged from Study 1 (see Chapter 2), dispositional envy is characterized by the tendency to experience both inner- and outer-directed negative feelings towards advantaged people. Inner-directed feelings are focused on sense of inferiority, with the desire to be in a different situation along with a helplessness feeling for the possibility of overcoming one's lacking condition relative to superior others. On the other hand, outer-directed feelings are characterized by anger and ill-willed thoughts and wishes against more fortunate people with whom one compares him- or herself. Since the painful nature of envy primarily relies on the declaration of inferiority that is inherent to the envious experience (Miceli & Castelfranchi, 2007), the primary component of dispositional envy, as emerged in Study 1, is represented by inner-directed inferiority and helplessness. On the other hand, the ill will component would arise as an assertive reaction to the self-threatening sense of inferiority involved in envy (Miceli & Castelfranchi, 2007; Smith & Kim, 2007).

Previous studies have shown that dispositional envy has potential negative consequences on the individuals and their interactions. Indeed, dispositional envy has been consistently found to be associated with lower self-esteem and life satisfaction, and with higher neuroticism, negative affect, and psychopathology at the individual level (e.g., Belk, 1984; Carrasco et al., 2004; Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Froh et

al., 2011; Gold, 1996; Milfont & Gouveia, 2009; Smith et al., 1999; Vecchio, 2000, 2005). At the interpersonal level, envy has been found to be associated with lower social integration, relatedness, cooperation, and group cohesiveness, and with higher counterproductive work behaviors l (e.g., Cohen-Charash & Mueller, 2007; Cohen-Charash, 2009; Duffy & Shaw, 2000; Froh et al., 2011; Hofer & Busch, 2011; Parks et al., 2002). Although some evidence exists to claim for the role of envy on individuals' wellbeing and social interactions, most of it is limited to correlations between envy scores and measures of maladjustment. No study, to our knowledge, has examined the role of the envious disposition on individuals' social and psychological adjustment, yet the reported correlations from previous studies would suggest a negative impact of dispositional envy on perceived social support (PSS) and subjective wellbeing (SWB). Indeed, a dispositional envy might lead to low PSS as a consequence of both a general negative view of oneself as person helplessly inferior to fortunate people, and social exclusion derived from the potentially harmful direct and indirect expressions of the outer-directed dimension of envy (e.g., Miceli & Castelfranchi, 2007; Smith & Kim, 2007). Similarly, envious individuals are expected to show poor affective and cognitive SWB as the result of their inclination to frequently and intensely experience envy, which, by definition, is a painful, negative emotional state, and as the outcome of their repeated and highly stressful experiences of dissatisfaction with their relative position to superior others (e.g., Smith & Kim, 2007; van de Ven et al., 2014).

Within a trait-approach, two personality factors, neuroticism and self-esteem, have been consistently associated to envy (e.g., Cohen-Charash & Mueller, 2007; Smith et al., 1999; Vecchio, 2000, 2005), and thus they need to be considered when investigating the impact of the envious disposition on individuals' PSS and SWB. In the process from dispositional envy to the individual's social and psychological adjustment, neuroticism and self-esteem might exert a mediating role. Having a propensity to feel inferiority and ill will

towards advantaged others with heightened intensity and frequency might exacerbate emotional instability and neuroticism, as a general tendency to experience negative affects (e.g. fear, sadness, and anger), and to see the self and the world in a negative way (e.g., Clark, Watson, & Mineka, 1994). On the other hand, the inner-directed component of envy, which, as emerged in Study 1, is primarily focused on a helpless feeling of inferiority and the desire to be in a different condition, represents a threat to self-esteem (e.g., Miceli & Castelfranchi, 2007; Smith & Kim, 2007), so that one's feeling to be a person of worth (Rosenberg, 1965) might be impaired by the repeated experience of social comparisons with advantaged others. The outer-directed ill will component of envy might produce feelings of shame and guilt (e.g., Smith & Kim, 2007), thus again damaging the self-image.

Within the five-factor model of personality (e.g., McCrae & Costa, 1987), neuroticism has been consistently found to have the strongest association with psychopathology (e.g., Kotov, Gamez, Schmidt, & Watson. 2010; Lamers, Westerhof, Kovacs, & Bohlmeijer, 2012; Lewis, Bates, Posthuma, & Polderman, 2013; Watson & Naragon-Gainey, 2014), and loneliness (Atak, 2009; Schwab & Petersen, 1990). It has been found also to be the most important predictor of psychological wellbeing (e.g., Cheng & Furnham, 2014; Singh, Singh, & Singh, 2012), in terms of life satisfaction, happiness, quality of life and affectivity (e.g., DeNeve & Cope, 1998; Heller, Watson, & Lies, 2004; Jovanovic, 2011; Steel, Schmidt & Schultz, 2008; Vittersø, 2001), and of marital relationship outcomes (e.g., Bouchard, Lussier, & Sabourin, 1999; Karney & Bradbury, 1995; Robins, Caspi, & Moffitt, 2000; Watson, Hubbard, & Wiese, 2000).

On the other hand, self-esteem has been found to be among the strongest direct predictors of happiness and life satisfaction (e.g., Baumeister, Campbell, Krueger, & Vohs, 2003; Diener, 1984; Lai & Cummins, 2013; Matud, Bethencourt, & Ibañez, 2014), also beyond personality factors (Cheng & Furnham, 2003; Furnham & Cheng, 2000; Joshanloo &

Afshari, 2011), and of affective well-being (e.g., Georgiou, Nikolaou, Tomprou, & Rafailidou, 2012), and having a low self-esteem has proven to be a risk factor for depression and loneliness (e.g., MacPhee & Andrews, 2006; Mahon, Yarcheski, Yarcheski, Cannella, & Hanks, 2006; Orth & Robins, 2013; Sowislo & Orth, 2013). With regard to the predictive value of self-esteem for social support, the reverse causal relationship has most often been examined in previous research, being the focus of the sociometer theory of self-esteem (Leary, Tambor, Terdal, & Downs, 1995), which considers the individuals' self-worth as an indicator of the quality of their relationships with others and of the degree of their social inclusion. In support of the sociometer perspective, being liked by others and feelings of social inclusion have been shown to predict changes in self-esteem (e.g., Denissen, Penke, Schmitt, & van Aken, 2008; Srivastava & Beer, 2005; Thomaes et al., 2010). Nevertheless, research has also provided evidence for claiming the predictive role of self-esteem on social support. Indeed, a longitudinal study found an effect of self-esteem on relationship satisfaction, and no support for the reverse causal relationship (Orth, Robins, & Widaman, 2012). Another study found that a self-esteem antecedent model, in which self-esteem preceded changes in perceived social support network size and quality, was preferable to a sociometer model, in which social support preceded changes in self-esteem (Marshall, Parker, Ciarrochi, & Heaven, 2013). Moreover, a low self-esteem was among the personal characteristics found to negatively affect PSS from specific significant relationships over time (Gracia & Herrero, 2004). Nevertheless, other studies suggested a reciprocal influence between self-esteem and social support (e.g., Hutteman, Nestler, Wagner, Egloff, & Back, 2015).

In light of the above, it seems reasonable to assume that an effect of envy on PSS and SWB would pass (also) through the impact of neuroticism and self-esteem on individuals' PSS and SWB.

The importance of examining the effects of envy on PSS lies on the large amount of literature suggesting a protective role of social support for individuals' physical and psychological wellbeing, as well as a buffering role of social support in the relationship between stress and well-being (e.g., Thoits, 2011). It must be noted that both structural social support, which refers to the size, type, density and frequency of contact within an individual's formal or informal social network, and functional social support, which refers to the informational, instrumental, emotional and appraisal functions that the exchange activities within one's social network serve (e.g., Lett et al., 2005), have been investigated as either received and perceived. Received and perceived social support have been found to be only moderately related to each other (Haber, Cohen, Lucas, & Baltes, 2007). It has been demonstrated that the influence of structural and functional social support, either received or perceived, on risk of mortality is comparable to that of well-established risk factors (e.g., lack of physical activity, smoking, alcohol intake) for mortality, with a 46% lower risk for future mortality for individuals with high PSS, regardless of gender (Holt-Lunstad, Smith, & Layton, 2010). Moreover, a number of studies have found associations between PSS and psychological adjustment. For example, a cross-sectional study comparing patients with a major depressive disorder and healthy controls found higher levels of perceived functional social support in the latter (Kwako, Szanton, Saligan, & Gill, 2011), whereas, in a longitudinal study, higher levels of PSS were found to be associated with a decrease in depressive tendencies (Heponiemi et al., 2006).

Gender-specific effects should be taken into account when examining the predictive path of dispositional envy on PSS and SWB. With respect to gender differences in the effect of neuroticism on PSS, a series of studies has shown that the influence of neuroticism on marital relationship quality and satisfaction is stronger for women than for men (Bouchard et al., 1999; Robins et al., 2000; Watson et al., 2000), and that neuroticism predicts PSS more

strongly in women than in men (e.g., Dehle & Landers, 2005; Katainen, Räikkönen, & Keltikangas-Järvinen, 1999). Gender-specific effects of neuroticism on SWB seem to depend on the component of SWB being measured (Diener, Lucas, & Oishi, 2002). The influence of neuroticism on life satisfaction has been found to be slightly stronger for women than for men, while the effects of neuroticism on negative affect are more prominent in men (Steel et al., 2008), although a meta-analysis examining found no support for a moderator effect of gender on the role of personality on overall SWB (DeNeve & Cooper, 1998). The influence of self-esteem on PSS does not differ between men and women (Gracia & Herrero, 2004; Marshall et al., 2013; Orth et al., 2012), while evidence about the positive effects of a high self-esteem on SWB is mixed, with some findings suggesting a stronger influence of self-esteem on SWB among women (Matud et al., 2014) and others indicating no gender differences in this association (Joshanloo & Afshari, 2009), in line with studies indicating that the protective role of self-esteem against depression does not differ between genders (MacPhee & Andrews, 2006; Orth & Robins, 2013; Sowislo & Orth, 2013).

4.2. Objective and Hypotheses

The present study aimed to elucidate whether and how being envious affects individuals' PSS and SWB. While the bidirectional associations between envy and various indicators of psychological wellbeing have been extensively investigated, this is the first study to examine the associations between envy as a relatively stable disposition and PSS. Based on previous studies, we hypothesized that the envious disposition would impair both individuals' levels of PSS (e.g., Cohen-Charash & Mueller, 2007; Cohen-Charash, 2009; Duffy & Shaw, 2000; Froh et al., 2011; Hofer & Busch, 2011; Parks et al., 2002) and SWB (e.g., Belk, 1984; Carrasco et al., 2004; Cohen-Charash, 2009; Froh et al., 2011; Gold, 1996; Milfont & Gouveia, 2009; Smith et al., 1999). Nevertheless, we posited that most of these

negative effects would be likely to be indirect, as mediated by both neuroticism and self-esteem. Indeed, these two personality variables have been consistently taken into account in the study of dispositional envy (e.g., Cohen-Charash & Mueller, 2007; Smith et al., 1999; Vecchio, 2000, 2005) and have been shown to be strong predictors of both PSS and SWB (e.g., DeNeve & Cope, 1998; Matud et al., 2014; Orth et al., 2012; Watson et al., 2000). Gender-specific effects were also examined since, based on evidence from the literature (e.g. Dehle & Landers, 2005; Katainen et al., 1999), gender was hypothesized as a moderator of some of the relationships within the mediated mechanism through which envy was expected to negatively affect PSS and SWB.

As depicted in Figure 1, the following hypotheses were formulated:

Hypothesis 1: Dispositional envy was expected to be negatively related to both PSS (*Hypothesis 1a*) and SWB (*Hypothesis 1b*), so that the higher the envious disposition, the lower the perceptions of receiving functional (i.e., instrumental and emotional) social support from others, and the lower the perceived wellbeing, in terms of both positive affect and satisfaction with life.

Hypothesis 2: Dispositional envy was expected to be positively related to neuroticism (*Hypothesis 2a*) and negatively related to self-esteem (*Hypothesis 2b*). In particular, we posited that the more frequency and intensity of the experience of envy across multiple situations, the more the individual would be likely to experience negative emotions and emotional instability, and the less he/she would be confident in his/her self-worth.

Hypothesis 3: Neuroticism was expected to be negatively related to both PSS (*Hypothesis 3a*) and SWB (*Hypothesis 3b*), so that the more the individual experiences negative affects and emotional arousability, the less he or she perceives emotional and instrumental support from others and experiences positive affect and life satisfaction.

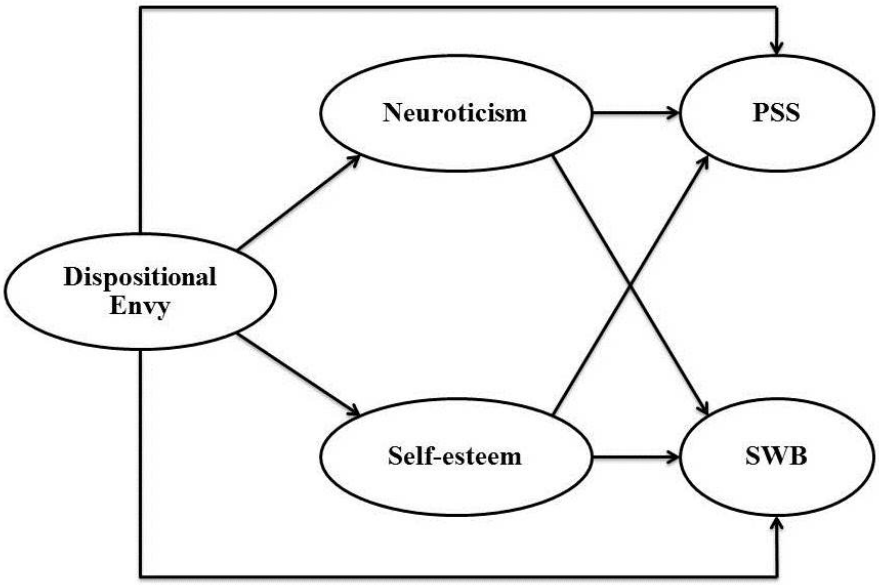
Hypothesis 4: Self-esteem was hypothesized to be positively related to both PSS (*Hypothesis 4a*) and SWB (*Hypothesis 4b*), so that the more the individual is equipped with self-esteem, the more the subjective experience of receiving emotional and instrumental from the social network, and the more the perceived wellbeing.

Hypothesis 5: Neuroticism and self-esteem were expected to at least partially mediate the posited relationship between dispositional envy and both PSS (*Hypothesis 5a*) and SWB (*Hypothesis 5b*). Both partial and full mediation models were considered in order to examine the degree of the mediating effects of neuroticism and self-esteem in the posited envy-PSS and envy-SWB paths.

Hypothesis 6: Based on findings from the literature (e.g., Dehle & Landers, 2005; Katainen et al., 1999), gender was hypothesized as a moderating variable in the relationship between neuroticism and PSS (*Hypothesis 6a*). In particular, the posited negative effect of neuroticism on PSS was expected to be stronger for women than for men. On the contrary, as suggested by previous studies (e.g., DeNeve & Cooper, 1998), we hypothesized that the expected influence of neuroticism on SWB would be equivalent for both men and women (*Hypothesis 6b*). Based on previous findings (e.g., Gracia & Herrero, 2004; Marshall et al., 2013; Sowislo & Orth, 2013), we expected no gender-specific effects for the posited predictive role of self-esteem on both PSS (*Hypothesis 6c*) and SWB (*Hypothesis 6d*). No hypotheses were formulated concerning gender differences in the expected effects of dispositional envy on both neuroticism and self-esteem and the outcome variables.

Based on the above described evidence indicating a positive influence of PSS on individuals' psychological wellbeing (e.g., Heponiemi et al., 2006; Thoits, 2011), an alternative conceptual model was also considered and tested in the present study, with PSS having a direct effect on SWB and mediating the posited relationships from neuroticism and self-esteem to SWB.

Figure 1. **Conceptual model of the mediated effects of envy on PSS and SWB**



4.3. Method

4.3.1. Participants and Procedure

Participants were adults from the general population who were recruited through a chain-sampling method (Patton, 2002). An e-mail invitation with a link to an online survey, available via a secure server, was sent to fifty contacts (other than those used for the recruitment of Sample 1 and Sample 2 in Study 1) from the author's personal and professional colleagues (50% females), and each contact was asked to spread the investigation and forward the invitation to other ten people (50% females; 50% aged 18-45 and 50% aged over-45) who might be interested in taking part to the survey. Inclusion criteria for sending the invitation were being older than 18 years and of Italian nationality. The estimated completion time of the survey was specified in the e-mail invitation. Respondents were allowed to continue filling out questionnaires only after pressing the "OK" button asking for consent to participate in the survey.

4.3.2. Measures

The online survey included an informed consent page approved by the University Ethics Committee, a socio-demographic form, and a series of self-report measures of the study variables reported below.

Dispositional envy. The CEQ-D derived from Study 1 was used for measuring dispositional envy (see Chapter 2 for a description of the CEQ-D). Cronbach's alphas in the current study were .86 for both Inferiority and Ill will scales, and .89 for the Total CEQ-D.

Neuroticism. This variable was measured using the neuroticism scale of the shortened Eysenck Personality Questionnaire Revised (EPQ-R-N; Eysenck, Eysenck, & Barrett, 1985). The EPQ-R is a 100-item revision of the EPQ (Eysenck & Eysenck, 1975), a widely used personality inventory designed to measure personal tendencies related to the broad factors of neuroticism, extraversion, and psychoticism. The short EPQ-R-N used in this study consists of twelve true-false items (e.g., "Are your feelings easily hurt?") that measure the general tendency to overresponsiveness. Initial evidence of internal validity and reliability for the EPQ-R-N was provided by the EPQ validation studies (Eysenck & Eysenck, 1975; Eysenck et al., 1985). The current study used the Italian version of the EPQ-R-N (Dazzi, Pedrabissi, & Santinello, 2004), which had a Kuder-Richardson internal consistency coefficient of .84 in the present sample.

Self-esteem. This variable was measured through the modified Rosenberg Self-Esteem Scale (RSES-MOD; Zimprich, Perren, & Hornung, 2005), which consists of ten items (e.g., "In my relationships to others, I act self-confidently") rated on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Evidence of validity for the RSES-MOD was provided by the expected associations with external criteria such as sense of coherence. Cronbach's alphas coefficients between .79 and .88 supported the scale internal consistency. For the present study, the RSES-MOD was translated from English into Italian and then back-

translated by two bilingual experts according to standard procedures (van de Vijver & Hambleton, 1996). For the purposes of this study, a single positive self-esteem dimension was used, including the four positively worded RSES-MOD items, as derived from an EFA (PAF with Promax rotation) that yielded a two-factor solution with positively and negatively worded items loading on separate factors (see Appendix E). Cronbach's alpha for the positively worded 4-item scale was .80.

Social support. Participants' perception of social support was assessed using the Receiving subscale of the Two Way Social Support Scale (2WAYSS-R; Shakespeare-Finch & Obs, 2011), which consists of eleven items rated on a 6-point scale from 0 (*not at all*) to 5 (*always*). Items describe both the instrumental (4 items; e.g., "I have someone to help me if I am physically unwell") and emotional (7 items; e.g., "There is at least one person that I feel I can trust") support received from others. Construct validity was supported by moderately strong associations with other social support measures, and associations in the expected directions with different wellbeing criteria. Internal consistency of the original scale was high, with Cronbach's alpha of .86 and .92 for the instrumental and emotional scales, respectively. The 2WAYSS was translated from English into Italian and then back-translated by two bilingual experts according to standard procedures (van de Vijver & Hambleton, 1996). In the present sample, the 2WAYSS-R showed a high internal consistency, with Cronbach's alphas of .83 for Instrumental support and .94 for both Emotional and Overall received social support.

Subjective wellbeing. This variable was measured using both the PANAS (Watson et al., 1988; see Chapter 2 for a description of the PANAS) and the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Indeed, a subjective wellbeing score based on Diener's (1984) model is frequently computed as a composite of positive and negative affectivity and life satisfaction The SWLS is a brief measure of overall life

satisfaction, consisting of five items (e.g., "In most ways my life is close to my ideal") rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Its validity was supported by moderate correlations with other wellbeing measures and expected associations with personality characteristics such as neuroticism and self-esteem. Reliability was good in terms of both internal consistency, with a Cronbach's alpha of .87, and a test-retest correlation coefficient of .82 over a 2-month period. The Italian version of the SWLS (Di Fabio & Busoni, 2009) used in the present study showed a high internal consistency, with a Cronbach's alpha of .92 in the current sample.

Social desirability. This control variable was measured by an 8-item version of the Italian MCSDS-9 (Manganelli Rattazzi et al., 2000; see Chapter 2 for a description of the MCSDS-9), which was created after removing an item explicitly referring to envy. In the present study, items were answered using a dichotomous true/false response format. Kuder-Richardson internal consistency coefficient was .60 in the current sample.

4.3.3. Statistical Analyses

To test the proposed hypotheses about the mechanism through which envy affects PSS and SWB, the partial mediation model in Figure 1 was specified using Structural Equation Modeling (SEM). Social desirability was included as a covariate in order to take into account socially desirable responses, since preliminary analyses on the data showed significant moderate correlations between social desirability and overall dispositional envy (r = - .31, p < .001), global neuroticism (r = -.26, p < .001), and overall SWB (r = .28, p < .001). Gender was not included as a covariate since preliminary analyses revealed only weak associations with the study variables (rs in the -.05-.20 range), based on Cohen's (1988) criteria.

The robust maximum likelihood method was used for estimating model parameters, as the test for multivariate symmetry and kurtosis indicated deviation from multivariate

normality. The goodness of fit of the estimated model was evaluated using the following criteria: Satorra-Bentler scaled χ^2 statistic (S-B χ^2; Satorra & Bentler, 1988); Root Mean Square Error of Approximation (RMSEA, cut-off < 0.08; Browne & Cudeck, 1993); Standardized Root Mean Square Residual (SRMR, cut-off < 0.08) and Non-Normative Fit Index and Comparative Fit Index (NNFI and CFI, respectively, cut-off ≥ 0.95) (Hu & Bentler, 1999). Two alternative models (i.e., a total mediation model and a competing model in which the direct effects of the proposed mediators on SWB were excluded and a direct effect from PSS to SWB was added) were also tested, and compared to the proposed model by performing a S-B χ^2 difference test (ΔS-B χ^2; Satorra & Bentler, 2001).

The mediating role of neuroticism and self-esteem was investigated by testing the statistical significance of the specific indirect effects of dispositional envy on PSS and SWB. To test for these effects, in addition to the Sobel test (Sobel, 1982), the MacKinnon's (2008) procedure was followed, which estimates the significance of the indirect effects by assuming an asymmetric distribution of the multiplicative term represented by the effect of the independent variable on the mediator * the effect of the mediator on the outcome. The 95% asymmetric confidence interval for each specific indirect effect was computed using the PRODCLIN software (MacKinnon, Fritz, Williams, & Lockwood, 2007).

For both outcomes, the proportion of the effects that was attributable to each mediator was estimated by dividing the mediated effects by the total effect. A test of the difference between the specific indirect effects of envy was performed following MacKinnon's (2008).

To examine the potential role of gender as a moderator of the relationships among variables in the model, a multi-group SEM (MG-SEM) was performed by progressively constraining all structural parameters to be equal across groups. In order to compare the structural relationships between constructs across gender, the metric invariance of the measurement model was checked prior to MG-SEM. The presence of a moderating effect of

gender was established in case of a significant nested ΔS-B χ^2 test, which would indicate a significant difference in the effect of a variable on another based on gender.

Indicators for all latent variables in the model were parcels of items, with averaged item scores and items being randomly assigned to one of the parcels, following a domain-representative approach (Kishton & Widaman, 1994). The number of parcels was obtained by EFAs of the scales used to assess the study variables (Little, Cunningham, Shahar, & Widaman, 2002), which are reported in Appendix E.

A sample size larger than 500 was established a priori, in order to obtain accurate estimates of the effect size of mediation (MacKinnon, Warsi, & Dwyer, 1995). Analyses were performed using LISREL 8.80 (Scientific Software International, Lincolnwood, IL). The level of significance was set at $p < .05$.

4.4. Results

4.4.1. Participants' Characteristics

The sample consisted of 876 respondents. Mean age was 31.63 years (*SD* = 12.07) and 56% were female. Most participants were single, highly educated, and unemployed. Participants' characteristics are shown in Table 1.

Table 1. Characteristics of Study 3 participants

	n (%)
Female	494 (56.4)
Age[a]	31.63 (12.07; 18-72)
Level of education[a]	16.09 (3.37; 5-31)
Family status	
single	619 (70.7)
married	219 (25)
divorced/widowed	38 (4.3)
Job status	
unemployed/student	485 (55.4)
employed	375 (42.8)
retired	16 (1.8)

[a] *M* (*SD*; range)

4.4.2. Descriptive Statistics of Study Variables

Means, standard deviations, and bivariate correlations of the study variables are presented in Table 2. All the study variables were significantly correlated with each other. In particular, envy was weakly to moderately, negatively associated with PSS and highly negatively correlated with SWB, whereas its associations with the proposed mediators were moderate. Neuroticism was weakly negatively associated with PSS and highly negatively related to SWB, whereas self-esteem was moderately positively associated with PSS and highly positively related to SWB. The proposed mediators were highly negatively correlated with each other. The strength of the associations with social desirability was low to moderate for envy, neuroticism, and SWB, and negligible for self-esteem and PSS.

Table 2. Descriptive statistics and bivariate correlations among study variables

	M	SD	Min-max	1	2	3	4	5
1. Envy	21.89	10.96	10~70					
2. Neuroticism	4.90	3.49	0~12	.43				
3. Self-esteem	11.44	2.54	4~16	-.40	-.55			
4. Social support	44.97	10.14	0~55	-.26	-.26	.33		
5. Subjective wellbeing	30.26	16.83	-55~95	-.49	-.67	.74	.39	
6. Social desirability	3.95	1.89	0~8	-.31	-.26	.14	.19	.28

Note. All correlations are significant at the $p < .001$ level.

4.4.3. Structural Equation Model

The partial mediation model depicted in Figure 1 showed an acceptable fit to the empirical data, which was significantly better than the fit of both the total mediation model [ΔS-B χ^2 (2) = 21.74, $p < .001$] and the alternative model including direct effects of neuroticism and self-esteem on PSS only and a direct effect from PSS to SWB [ΔS-B χ^2 (2) =

98.56, $p < .001$], in which the only significant structural paths were those from the social desirability covariate (Table 3).

Table 3. Goodness of fit indices for the proposed and alternative models

Fit indices	Partial mediation[a]	Total mediation[b]	Alternative model[b]
χ^2	334.74*	346.02	424.64*
S-B χ^2	307.62*	322.37	391.89*
RMSEA (CI 90%)	.06 (.05-.07; $p = .01$)	.06 (.05-.07; $p = .006$)	.07 (.06-.08; $p < .001$)
SRMR	.04	.04	.05
NNFI	.98	.98	.97
CFI	.99	.98	.98

[a] $df = 75$; [b] $df = 77$; * $p < .001$

Results of the proposed multiple partial mediation model are shown in Figure 2. Consistent with *Hypothesis 1*, dispositional envy significantly and negatively affected both PSS ($\beta = -.12$, $p < .01$) and SWB ($\beta = -.06$, $p < .05$). The results of the proposed model also supported *Hypothesis 2*, with dispositional envy having a positive association with neuroticism ($\beta = .45$, $p < .001$) and a negative association with self-esteem ($\beta = -.50$, $p < .001$). With respect to *Hypothesis 3*, results only supported *Hypothesis 3b*, as neuroticism had a significant, negative influence on SWB only ($\beta = -.31$, $p < .001$). In accordance with *Hypothesis 4*, self-esteem significantly and positively influenced both PSS ($\beta = .29$, $p < .001$) and SWB ($\beta = .60$, $p < .001$).

For testing *Hypothesis 5*, specific indirect effects of envy on both PSS and SWB were computed using both the Sobel test and the asymmetric confidence intervals. As shown in Table 4, the indirect effect of envy on PSS through neuroticism was nonsignificant, whereas there was a significant mediation effect of self-esteem in the relation between envy and PSS. Thus, *Hypothesis 5a* was only partially supported. As to the second outcome, the effects of

envy on SWB were significantly mediated by both neuroticism and self-esteem, consistent with *Hypothesis 5b*.

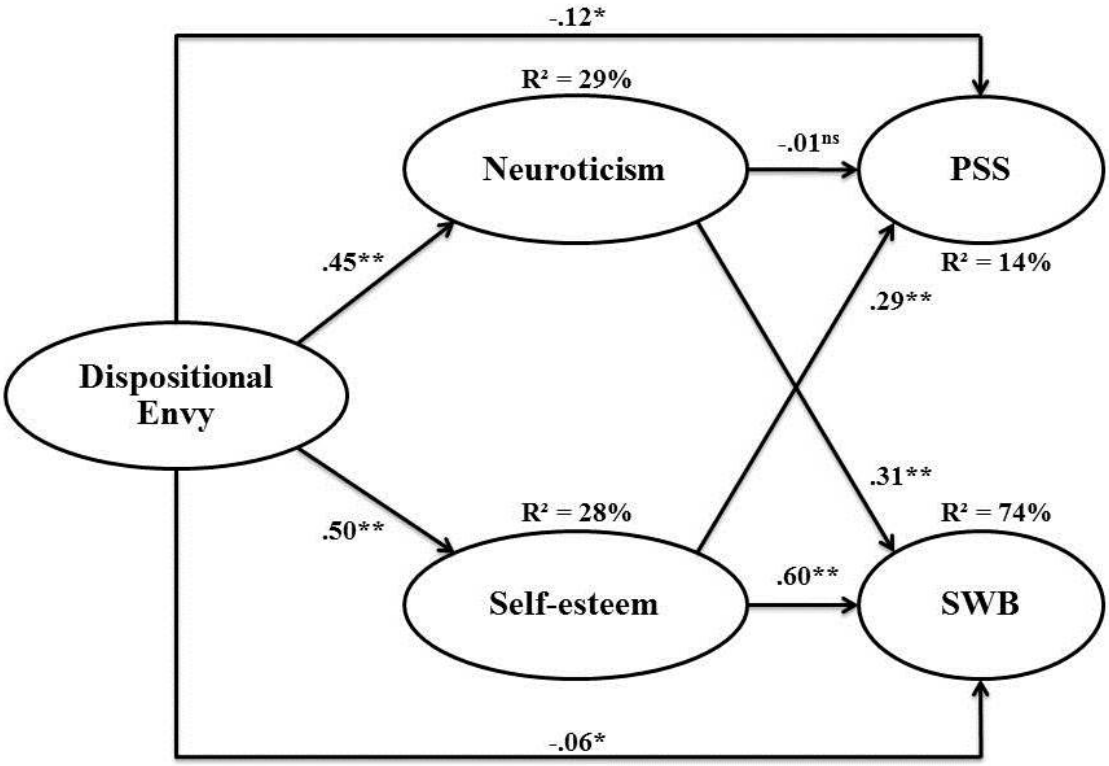
Dispositional envy was thus found to have both direct and indirect effects on PSS and SWB. The total indirect effects of envy, calculated using the Sobel test, were significant for both PSS and SWB. About 54% of the effect of envy on PSS was mediated by self-esteem, whereas the proportion of the direct effect of dispositional envy on PSS was 45%.

The proportion of the influence of envy on SWB that was mediated by neuroticism was about 28%, whereas 60% of the effect of envy on SWB was mediated by self-esteem. Thus, about 90% of the total effect of envy on SWB was mediated by neuroticism and self-esteem, whereas the proportion of the direct effect of envy on SWB was 12%. Pairwise contrasts indicated that the specific indirect effect of envy on SWB through self-esteem was larger than the specific indirect effect of envy on SWB through neuroticism ($z = 4.20$, $p < .001$).

Finally, social desirability, which was included in the model as a covariate, significantly and negatively affected neuroticism ($\beta = -.26$, $p < .001$), and significantly and positively influenced self-esteem ($\beta = .13$, $p < .01$). The two mediators were moderately, negatively correlated ($r = -.37$, $p < .001$), while the association between the outcomes was negligible ($r = .06$, $p < .05$). Envy and social desirability were weakly, negatively correlated ($r = -.11$, $p < .05$).

Overall, the model explained 29% of the variance in neuroticism, 28% of the variance in self-esteem, and 14% and 76% of the variation in PSS and SWB, respectively.

Figure 2. Results of the proposed multiple mediation model



Note. Covariances between the mediators and between the outcomes were included in the model but are omitted from this figure to improve readability.

Table 4. Indirect effects of envy on social support and subjective wellbeing

Indirect effect	Estimate	Sobel test[a]	CI 95%[b]
Total PSS	-.12	-5.12*	
Envy → Neuroticism → PSS	-.01	-.10ns	-.053 ~ .048
Envy → Self-esteem → PSS	-.12	-3.99*	-.180 ~ -.064
Total SWB	-.21	-10.31*	
Envy → Neuroticism → SWB	-.06	-6.72*	-.087 ~ -.049
Envy → Self-esteem → SWB	-.14	-8.60*	-.179 ~ -.112

Note. [a] *z*; [b] asymmetric confidence intervals calculated with PRODCLIN;
* $p < .001$; ns $p > 0.05$

4.4.4. Moderating Effect of Gender

Prior to examining the potential moderating effect of gender, a MG-CFA was performed to establish the metric invariance of the multiple mediation model, which would allow a comparison of structural paths across gender (Steenkamp & Baumgartner, 1998). The nested model in which all paths from latent to observed variables were constrained to be equal (metric invariance) did not lead to a significant deterioration in fit compared with the unconstrained model, in which the factor structure only was set to be equivalent (configural invariance) (Table 5).

In the MG-SEM, structural parameters were considered to be identical across gender if the ΔS-B χ^2 test comparing nested models with only one structural parameter being freely estimated across groups and the metric invariance model was nonsignificant. As shown in Table 5, no significant ΔS-B χ^2 was found, indicating that the effect of a variable on another was the same for men and women, thus excluding a moderating effect of gender, consistent with *Hypotheses 6b*, *6c*, and *6d*, while *Hypothesis 6a* was not supported.

Table 5. MG-SEM across gender

Model	χ^2	S-B χ^2	Δdf	S-B $\Delta\chi^2$
Configural[a]	429.79*	377.30*		-
Metric[b]	440.29*	389.78*	9	10.56ns
Freed structural parameter				
Envy → neuroticism[c]	440.58*	389.99*	1	.25ns
Envy → Self-esteem[c]	442.22*	389.95*	1	.25ns
Envy → SS[c]	441.75*	389.61*	1	.81ns
Envy → SWB[c]	443.51*	392.27*	1	2.48ns
Social desirability → Neuroticism[c]	440.30*	389.94*	1	.01ns
Social desirability → Self-esteem[c]	441.01*	390.56*	1	.68ns
Social desirability → SS[c]	440.30*	389.70*	1	.01ns
Social desirability → SWB[c]	440.90*	391.20*	1	.84*
Neuroticism → SS[c]	441.81*	389.98*	1	.91ns
Neuroticism → SWB	443.64*	392.11*	1	2.35ns
Self-esteem → SS	440.69*	389.54*	1	.28ns
Self-esteem → SWB	440.30*	389.90*	1	.01ns
None	450.35*	395.51*	12	7.99ns

[a] $df = 150$; [b] $df = 159$; [c] $df = 160$; [d] $df = 171$; [ns] $p > .05$; [*] $p < .001$

4.5. Discussion

The aim of the present study was to examine the mechanisms through which an envious disposition may negatively affect individuals' social and psychological adjustment. In particular, having a propensity to experience envy in front of upward social comparisons, that is, repeatedly and intensely suffering from a helpless sense of inferiority towards people who are in a better position along with feelings of anger and ill will against them, was hypothesized to reduce both perceived social support and well-being. Social support was

intended here as both the emotional and instrumental assistance available from others. Wellbeing was intended as the predominance of positive emotions and sense of satisfaction with life. In investigating for the first time the relationships between envy and PSS and SWB using SEM, we found an acceptable fit for a partial mediation model, which was found to be preferable to a total mediation model, thus indicating that dispositional envy has both direct and indirect effects on both outcomes.

Thus, having an envious disposition does have negative consequences on individuals' perceived social and psychological adjustment. The negative direct effects of dispositional envy on PSS found in the present study are congruent with results of previous studies where dispositional envy was associated with low social integration, group cohesion and relatedness (Duffy & Shaw, 2002; Froh et al., 2011; Hofer & Busch, 2011). As initially proposed, the detrimental effects of dispositional envy on PSS are arguably the consequence of the repeated, socially inappropriate, direct and indirect harming behaviors that may result from the outer-directed component of dispositional envy. It encompasses the inclination to feel anger and ill will against more fortunate people as a reaction to a feeling of inferiority towards them (e.g., Cohen-Charash, 2009; Cohen-Charash & Mueller, 2007; Park et al., 2002). The manifestation of such feelings may in turn lead to exclusion from others and thus to a damaged supportive social network (e.g., Smith & Kim, 2007). Apart from these real consequences, dispositional envy may reduce the perception of availability of support resources in case of need, which does not necessarily coincide with actual, received social support (e.g., Wills & Shinar, 2000). The perception of poor support from the social network might also be the expression of the typically envious negative view of self and the others. Indeed, although stressful situational determinants have been proven to have a detrimental effect on relation-specific PSS (e.g., Gracia & Herrero, 2004), global PSS has been proposed as a stable individual characteristics that reflects a personal history of early relationships and

expectations about the supportiveness of one's environment, rather than representing an index of actual social adjustment (Pierce, Lakey, Sarason, Sarason, & Joseph, 1997). Thus, it seems reasonable to suggest that the low availability from others in case of need complained by envious individuals might be the consequence of a personal inclination to feel helplessly inferior to more fortunate people, that is, a poor PSS might primarily depend on the inner-directed inferiority component of envy.

Being dispositionally envious also had a detrimental effect on overall SWB, in line with previously reported associations between dispositional envy and lower life satisfaction and higher negative affect (e.g., Belk, 1984; Cohen-Charash, 2009; Froh et al., 2011; Smith et al., 1999). As initially proposed, the poor affective and cognitive SWB of envious individuals is likely to be the consequence of their propensity to frequently and intensely experience negative, both inner- and outer-directed, emotional states when comparing themselves to superior others, which also entail a painful dissatisfaction with their relative position.

Within the process from envy to perceived social and psychological maladjustment, we considered the potential mediating effects of neuroticism and self-esteem, two personality variables that have been consistently associated to the envious configuration (e.g., Cohen-Charash & Mueller, 2007; Smith et al., 1999; Vecchio, 2000, 2005). With respect to the relationship between dispositional envy and neuroticism, having a propensity to feel helplessly inferior and ill-willed when comparing with superior others was found to enhance irritability and emotional instability, perhaps as the consequence of repeated and intensely frustrating experiences that imply a negative focus on both the self, through the inner-directed component of envy, and the others, though the outer-directed envy dimension (e.g., Clark et al., 1994). With a similar strength, dispositional envy was also found to reduce self-esteem, arguably because the envious individual, by frequently experiencing envy, is exposed to repeated threats to self-esteem, which are primarily inherent to the inner-directed component

of envy; moreover, the socially inappropriate outer-directed feelings of anger and ill will in envy may provoke experiences of shame and guilt contributing to a self-image damage (e.g., Smith & Kim, 2007).

With respect to the mediating role of neuroticism and self-esteem in the relationship between envy and perceived adjustment, results indicated that the harmful effect of envy on PSS was mediated by self-esteem only. Thus, envy reduced PSS by decreasing self-esteem, which, in line with previous studies (e.g., Gracia & Herrero, 2004; Marshall et al., 2013) was found to positively influence the perception of an available support network. The finding that having positive cognitions about the self leads to higher PSS represents an important evidence of the predictive value of self-esteem on important social outcomes, which had been questioned by some authors (e.g., Baumeister et al., 2003). In support of a self-esteem antecedent model (e.g., Marshall et al., 2013), self-esteem was found to predict PSS, arguably because individuals high in self-esteem have a positive self-view that may either promote social contacts and enhance support network availability, or simply entail a higher perception of being helped, loved, and cared for. Nevertheless, the reverse sociometer model, in which PSS is supposed to influence self-esteem, was not tested as it was beyond the purpose of the present study.

With respect to the mediating role of neuroticism, in contrast to a number of studies reporting a lower perceived availability of social support in individuals with higher emotional instability (e.g., Lewis et al., 2013; Swickert & Owens, 2010), in the present study neuroticism had no effect on PSS, indicating that the perceived availability of social support is independent from the tendency to experience negative affects and being emotionally unstable. Similarly, other studies found negligible or nonsignificant association between neuroticism and PSS (e.g., Asendorpf & van Aken 2003; Tong et al., 2004), suggesting that the personal confidence in the availability of resources of different kind of support when

needed may mostly rely on individual variables different from neuroticism, such as, indeed, self-esteem. The lack of a significant effect of neuroticism on PSS may be attributable to the fact that neurotic individuals indeed use emotional-focused coping strategies such as seeking for emotional support (Carver & Connor-Smith, 2010), yet, being highly insecure and concerned with rejection (e.g., Donnellan, Burt, Levendosky, & Klump, 2008), they may be likely to mainly seek emotional and instrumental assistance by turning to nontraditional sources of belongingness and social support, such as Internet (e.g., Amichai-Hamburger, Wainapel, & Fox, 2002; Seidman, 2013), as evidence indicating neuroticism as a risk factor for Internet addiction would suggest (Tsai et al., 2009).

With regard to overall SWB, the negative influence of dispositional envy was mediated by both neuroticism and self-esteem, indicating that envy reduced SWB by exacerbating neuroticism, which in turn had a detrimental effect on SWB, as well as by damaging self-esteem, which had a positive influence on SWB. Indeed, findings from the present study were consistent with previous evidence of the negative effects of neuroticism on both cognitive and affective components of SWB (e.g., DeNeve & Cope, 1998; Heller et al., 2004; Jovanovic, 2011; Steel et al., 2008; Vittersø, 2001), and also remarked the promoting role of self-esteem for SWB (e.g., Lai & Cummins, 2013; Matud et al., 2014; Georgiou et al., 2012). In particular, the indirect effect of envy on SWB through self-esteem was stronger than that through neuroticism, in line with previous studies reporting a predictive role of self-esteem beyond personality factors (Cheng & Furnham, 2003; Furnham & Cheng, 2000; Joshanloo & Afshari, 2011), thus confirming the important role of self-esteem for individuals' perceived wellbeing and satisfaction.

Altogether, findings of this research supported the proposed conceptual model, with the harmful effects of dispositional envy being mediated by both neuroticism and self-esteem for SWB, and by self-esteem only for PSS. The direct negative effects of dispositional envy

on perceived social and psychological adjustment were also supported; nevertheless, it must be noted that these effects were weak. Thus, findings from the present study indicated that envy indeed has negative consequences on individuals' social and psychological adjustment, yet the harmful potential of envy relies mostly on its effects on important predictors of personal adjustment such as neuroticism and self-esteem.

Noteworthy, the mechanism through which dispositional envy affects PSS and SWB was found to be the same for both men and women, as MG-SEM results indicated the absence of a moderating effect of gender on the relationships in the partial mediation model. This finding was in line with previous evidence indicating that the positive role of self-esteem for individuals' sense of wellbeing and social support availability is equally enjoyed by men and women (e.g., Gracia & Herrero, 2004; Joshanloo & Afshari, 2009; Marshall et al., 2013; Sowislo & Orth, 2013), and that the negative effects of neuroticism on overall wellbeing are equally harmful for men and women (e.g., DeNeve & Cooper, 1998). Different from previous findings of gender-specific associations between neuroticism, and perceived relationship quality and social support (Bouchard et al., 1999; Dehle & Landers, 2005; Katainen et al., 1999; Robins et al., 2000; Watson et al., 2000), the effect of neuroticism on PSS was nonsignificant for both men and women.

To collect evidence of the validity of the proposed envy-maladjustment process, an alternative conceptual model was also tested, in which PSS was included as a mediator of the relationships from neuroticism and self-esteem to SWB. Nevertheless, the competing model showed a worse fit to the data, and the effect of PSS on SWB was nonsignificant, different from a large amount of research indicating that PSS promotes wellbeing (e.g., Heponiemi et al., 2006; Kwako et al., 2011; Thoits, 2011).

Overall, findings for the present study highlights the importance of studying malicious envy due to its negative, although mostly indirect, effects on PSS and SWB. Indeed, by

impairing emotional stability and self-esteem, dispositional envy has been demonstrated to impair perceived social and psychological wellbeing. The weak direct effects of envy on both adjustment outcomes might be attributable to the use of effective coping strategies, such as selective ignoring (Salovey, & Rodin, 1988), which may prevent envious individuals from enacting ill-willed, harming behaviors towards advantaged people, thus protecting the individual from unfavorable social adjustment outcomes such as the perceived unavailability of an instrumentally and emotionally supportive social network. Similarly, the harmful effect of envy on SWB may be considerably reduced by the adoption of constructive reactions to episodic experiences of envy that may be inspired, for example, by social desirability as a trait (Crowne & Marlowe, 1960).

Findings from the present study have also potential practical implications suggesting that interventions focused on dispositional envy might be useful in reducing social and psychological maladjustment. Noteworthy, focal points of such interventions should be a growth in self-esteem and a parallel decrease in negative emotionality and emotional instability, especially for enhancing the individual's SWB. Parallel implications rely on the importance of investigating the presence of an envious disposition in individuals complaining low availability of social support and poor SWB, in presence of emotional instability and low self-esteem.

4.6. Limitations

The main limitation of the present study concerns the generalizability of findings, since participants were mostly highly-educated, single young adults. Future investigations should investigate whether the proposed conceptual model of the mechanisms through which envy affects social and psychological adjustment is also applicable to older individuals. Moreover, it is important to remark that the cross-sectional nature of the data does not allow

to draw conclusions about causal relationships among study variables, although the proposed mediation model is theoretically defensible. Indeed, neuroticism and self-esteem were included as mediators in the proposed conceptual model linking envy to PSS and SWB since they have been shown to be relatively stable and thus changeable across the life course (e.g., Roberts, Walton, K. E., & Viechtbauer, 2006; Orth & Robins, 2014). This makes them likely to be affected by repeated and intense experiences of envy in the social comparison with advantaged people. Indeed, findings from the present study revealed that dispositional envy had effects on both neuroticism and self-esteem. Nevertheless, future longitudinal studies are needed to strengthen the proposed model.

It must be also noted that the dispositional variables included in the model only explained a reduced percentage of variance of PSS. Future studies should include further personal and/or situational variables not included in the present study that may instead play a mediating or moderating role between neuroticism and PSS, such as shyness (Jackson, Fritch, Nagasaka, & Gunderson, 2002), need for support, network characteristics(e.g., Fingeld-Connett, 2005), and stressful life events (Gracia & Herrero, 2004). More studies are also needed that consider dispositional coping strategies in the process from envy to both PSS and SWB, in order to better understand the weak direct effects of dispositional envy. Potential antecedents of being envious were not included in the model, not allowing to draw conclusions about the personal and background conditions that may promote an envious disposition. Future studies are needed that investigate whether background factors such as, for example, birth order or number of siblings (e.g., Häger, Oud, & Schunk, 2012; Lampi & Nordblom, 2010) and socioeconomic status (Graham, Higuera, & Lora, 2011) might predispose to envy.

Another limitation lies in the use of self-report instruments. In particular, actual social support is worthy to be also considered in future studies, which might arguably provide

different findings (e.g., Will & Shinar, 2000), also in light of the fact that PSS has been found to be more strongly related to adjustment than actual, visible received social support, arguably because the latter transmits a sense of inefficacy to the recipient, being a threat to self-esteem that may impact or even exacerbate distress (Bolger & Amarel, 2007; Helgeson, 1993). Moreover, the inclusion of measures of actually received rather than perceived social support in future investigations might contribute to ascertain whether the lower PSS in dispositionally envious individuals is merely attributable to the negative affective experience of envy, which might inherently entail a negative view of oneself as a person with low emotional and instrumental support from others.

The proposed interpretation of the negative effect of dispositional envy on PSS as the result of a social exclusion related to the outer-directed ill-willed feelings against advantaged people needs to be investigated more in depth. Moreover, future studies on the harmful effects of dispositional envy should not only consider both perceived and actual support from others as social adjustment outcomes, but also distinguish between inner- and outer- directed components of envy, as to clarify whether the negative influence of dispositional envy on PSS is mainly linked to the tendency to feel negative and helpless in comparison to superior others or to the socially inappropriate feelings of anger and ill will towards advantaged people. Similarly, the negative impact of the envious disposition on SWB might differ in intensity depending on which component of dispositional envy is under consideration, and this issue deserves further investigations.

4.7. Conclusions

The present study was the first to examine the mechanisms involved in the potential negative consequences of envy. We hypothesized paths from dispositional envy through self-esteem and neuroticism to both PSS and SWB. Findings from testing the proposed

conceptual model via SEM shed some light on the harmful impact of dispositional envy on individuals' lives, and substantially contributed to improve our understanding of the construct of envy.

Indeed, the study revealed that, for both men and women, having an envious disposition has negative consequences on the individual's social and psychological adjustment, which are mostly mediated by other almost stable characteristics such as neuroticism and self-esteem. By reducing global self-esteem, the envious disposition may damage supportive social networks via antisocial direct and indirect behaviors that may arise from envy and that are likely to drive others away. On the other hand, by damaging both emotional stability and self-worth, dispositional envy leads to a reduced SWB. Thus, repeated and intense envious experiences produce generalized negative feelings of anger and sadness and a damaged self-image, which, in turn, lead to decreased adjustment, in terms of both social and individual outcomes. It was therefore found that the mechanism through which envy negatively affects individuals' PSS and SWB relies mostly on heightened neuroticism and damaged self-worth.

By exploring the unique and common contributions of neuroticism, self-esteem, and dispositional envy on PSS and SWB, the present study revealed that each predictor in the model significantly affected SWB, and, most of all, indicated a crucial role of self-esteem in building and maintaining supportive social relationships and enjoying a sense of wellbeing. Implications for clinical practice rely on taking into consideration individual differences in envy when implementing supporting interventions addressed to individuals who complain low social and psychological adjustment. The first step would be to investigate the presence of an envious disposition. The second step would be to work on improvement of the emotional stability and self-esteem of individuals who report to frequently and intensely experience envy.

CHAPTER 5

General Discussion

5.1. Discussion

The aim of the present dissertation was to provide a contribution to the understanding of the construct of envy by adopting a psychometric approach. Since previous inconsistent findings in envy research seemed to be attributable to the use of different theoretical and operative definitions of envy (e.g., van de Ven et al., 2014), the search for a shared and, most of all, empirically supported, definition of malicious envy was the focus of the present work.

Van de ven and colleagues (2014) recently called for more research on envy, as to finally clarify what envy is and what envy does. Although we limited the investigation to malicious envy, Studies 1 and 2 of the present dissertation contributed to elucidate what is envy, in both its dispositional and episodic facets, while Study 3 provided initial evidence on what (dispositional) envy does.

The core features of envy, that is, the inherent ingredients of the envious configuration, were investigated. They consisted of those emotional experiences that are necessary conditions for a painful, complex feeling arising from an upward social comparison to be called envy. Multiple exploratory and confirmatory factor analyses were performed on items representative of all the distinct features that have been attributed to envy in the literature. Findings from Studies 1 and 2 allowed to finally ascertained the dimensionality of envy as both a stable dispositional characteristic and an episodic emotion. Envy, in both its manifestations, emerged as a bidimensional construct composed by an inner-directed dimension of inferiority and helplessness, and an outer-directed dimension of feelings of anger and hostile ill will. These core features thus represented the criteria for both

recognizing an envious disposition and typifying as envy a painful episodic emotion subsequent to a specific unfavorable social comparison. Moreover, findings from Study 1 allowed to establish boundaries between envy and competing constructs, which have often been included in definitions of envy, such as resentment and hostility, which have been demonstrated here to represent social emotions different from envy.

Finally, the conceptual model tested in Study 3 for investigating the mechanisms through which envy affects individuals' perceived social support and subjective wellbeing highlighted the importance of studying envy. Indeed, dispositional envy was found to have negative consequences on outcomes of social and psychological adjustment, which were mainly mediated by neuroticism and self-esteem. By damaging individuals' emotional stability and self-image, the inclination to react with intense envy in front of unfavorable social comparisons appeared to have negative consequences on individuals' lives. Being the first study to investigate the associations between envy and outcomes of adjustment using SEM, Study 3 provided especially valuable initial evidence of what envy does. Nevertheless, future studies should verify whether the detrimental effects of dispositional envy on wellbeing vary when distinguishing between its inner- or outer-directed components.

With the present dissertation, some initial evidence was also provided concerning the often concealed nature of envy, which has been proposed as a possibly unaware emotion (e.g., Smith & Kim, 2007). Results from Study 2 seem to suggest the feasibility of using a self-report measure in the assessment of episodic envy, in line with a conceptualization of envy as an aware emotion. Indeed, considering the kind of self-report measure applied and the characteristics of the scenario-based implicit association test (IAT; Greenwald et al., 1998) used in this research, it seems that the lack of a significant explicit–implicit correlation in Study 2 can be attributed to previously identified problems in finding unquestionable explicit-implicit correspondences (e.g., Hofmann et al., 2005; Greenwald et al., 2009). The sensitivity

of the episodic version of the Core-Envy Questionnaire to differences in envy scores between groups based on IAT scores is an important finding that seems to simultaneously support the use of a self-report questionnaire for the assessment of envy and the appropriateness of adapting the IAT to assess episodic emotions, even socially sensitive ones, performed within the laboratory.

5.2. Limitations

Each study of the present dissertation had its strengths, weaknesses, and limitations, which have been thoroughly discussed in the previous chapters. Nevertheless the main limitation of the present work, which is common to all three independent studies, concerns generalizability. Indeed, findings from the present dissertation must be interpreted with caution, as they derived from analyses on large samples of mostly highly educated, young adults, which are not representative of the Italian general population, and thus they do not allow making valid inferences about other populations of interest. Although the majority of previous studies on envy have used convenience samples as well, future studies are needed to replicate our findings with samples randomly driven from the Italian general population.

Measures used in the present research were mostly self-reports, which, besides being inevitably affected by individuals' introspective ability, might present problems of informativeness. Noteworthy, socially desirable response bias might be of special concern when using self-report measures of envy, which, by definition, and as also emerged in all three studies of the present dissertation, is a socially undesirable emotion that is hardly admitted by individuals, thus remarking the need for controlling for social desirability in envy research.

As to the parallel envy self-reports validated in Studies 1 and 2, it is worth of attention that the episodic version was an indirect measure, thus its applicability as a direct measure

deserves further investigations. Moreover, although Study 2 shed some light on the appropriateness of considering envy as an aware emotion, further studies are needed in which criterion variables different from implicit envy scores are used.

Although we found strong evidence for the envious configuration as essentially made of helpless inferiority and ill will, a number of issues still need to be addressed, such as how perceived control relates to the inner- and outer directed dimensions of envy (e.g., Van de Ven et al., 2009), and how different strategies are used to cope with envy and its components (e.g., Smith & Kim, 2007).

Finally, and most importantly, the cross-sectional nature of our research does not allow to draw inferences about the direction of causality between envy and its associated variables. Longitudinal studies are warranted to clarify the emerged relationships between envy and its correlates, and particularly to establish a causal relationship between dispositional envy and negative social and psychological outcomes. Moreover, the inclusion of personal and background variables that might lead to an envious disposition and of coping styles that may relieve envy would be especially worthwhile for future models testing the mechanisms through which envy develops and affects individuals' wellbeing and social relations.

5.3. Practical Implications and Conclusions

Practical implications of the present dissertation mainly concern envy research. Findings from Studies 1 and 2 represent a valuable contribution to empirical research as they provided scholars with a psychometrically validated definition of envy. The clarification of the core features of both dispositional and episodic envy is expected to promote a shared operationalization of envy in future studies, which will arguably facilitate the comparison of findings between studies and between approaches. Indeed, having addressed and established

the envious configuration as both a personal inclination to experience envy with heightened intensity and frequency across multiple social comparison situations, and an episodic painful, both inner- and outer-directed emotional state aroused by a specific upward social comparison, we contributed to a reconciliation between the dispositional and episodic approaches, which until now have represented separate, not well integrated fields of research on envy.

A more tangible outcome of the present dissertation is represented by the validation of the Core Envy Questionnaire, which has demonstrated to be a psychometrically sound self-report measure of envy, in both its dispositional and episodic versions. The availability of two parallel forms for the assessment of dispositional and episodic envy represents a valuable first step in order to reach a deeper understanding of the envious emotion and of its correlates, as their use has a strong potential for meaningfully comparing evidence from empirical investigations.

Some implication for clinical practice can also be derived from the present work. Findings from the testing of a conceptual model in which dispositional envy had partially mediated effects on individuals' social and psychological adjustment indicated that envious individuals complain low availability of social support and poor subjective wellbeing, which are mainly due to that frequently and intensely experiencing envy damages emotional stability and self-esteem. Thus, with individuals reporting low social support and wellbeing and showing high neuroticism and low self-esteem, clinicians might also explore the presence of an envious disposition. Similarly, interventions aimed at reducing the negative impact of envy could focus on heightening self-esteem and emotional stability.

In conclusion, answering to van de Ven et al.'s (2014) call, the present dissertation offered a psychometrically grounded clarification of what malicious envy, as a trait-state complex emotion, is, and provided initial evidence of what dispositional envy does, in terms

of social and psychological outcomes, and how it produces detrimental effects on individuals' adjustment. These contributions are potentially valuable for both envy research and clinical practice. Indeed, we provided researchers with the opportunity to use the same operationalization of envy in both the dispositional and episodic approaches, and we suggested clinicians to investigate envy, particularly the envious disposition, and to offer to envious patients tailored support interventions in order to promote their psychological wellbeing.

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APPENDIX A

Initial item pool

Source	Item
Carrasco et al., 2004	1. Se qualcuno mi supera tendo a pensare che non sia giusto.
Gold, 1996 (YES, item 1)	2. Di solito, tanto meglio sta qualcun altro, tanto peggio mi sento io.
Belk, 1985	3. Mi dà fastidio quando vedo persone che comprano tutto quello che vogliono.
Gold, 1996 (YES, item 2)	4. A volte mi piace fare il guastafeste.
Vecchio, 1995	5. Sento che il mio impegno è apprezzato meno di quello di altri.
Van de Ven et al., 2009	6. A volte desidero che gli altri falliscano.
Gold, 1996 (YES, item 4)	7. Tendo a provare rabbia quando gli altri hanno successo.
Schaubroeck & Lam, 2004	8. Alla maggior parte delle persone le cose vanno meglio che a me.
Gold, 1996 (YES, item 5)	9. Di solito penso molto a cosa hanno gli altri che io vorrei.
Gold, 1996; Schaubroeck & Lam, 2004; Smith et al., 1999	10. Quando miei amici o conoscenti hanno successo mi sento ferito e amareggiato.
Gold, 1996 (YES, item 8)	11. Sogno spesso di ottenere quello che hanno gli altri.
Carrasco et al., 2004	12. Tendo a infastidirmi quando le buone qualità degli altri sono riconosciute.
Gold, 1996 (YES, item 9)	13. Di solito detesto vedere gli altri che si divertono.
Gold, 1996 (YES, item 13)	14. Vedere che gli altri si affermano quando io non ci riesco mi amareggia.
Cohen-Charash, 2009	15. Di solito ho la sensazione che a me manchino alcune qualità che gli altri hanno.
Gold, 1996 (YES, item 10)	16. Quando i miei amici hanno successo mi sento ferito.
Gold, 1996 (YES, item 3)	17. Spesso vorrei cambiare la mia situazione con quella di qualcun altro più avvantaggiato di me.
Gold, 1996 (YES, item 14)	18. Mi dà fastidio se qualcuno mi supera o fa qualcosa meglio di me.
Van de Ven et al., 2009	19. A volte vorrei danneggiare chi occupa una posizione migliore della mia.
Gold, 1996 (YES, item 15)	20. Di solito mi addolora pensare al successo dei miei amici.
Carrasco et al., 2004	21. Tendo a parlare male di chi ottiene qualcosa che io desidero, ma non ho.
Gold, 1996 (YES, item 16)	22. Preferirei vedere vincere alla lotteria qualcuno che non conosco, piuttosto che un conoscente.
Hareli & Weiner, 2002	23. A volte vorrei essere come qualcun altro.
Gold, 1996 (YES, item 17)	24. Mi sento amareggiato quando vedo persone che hanno successo.
Smith et al., 1999 (DES, item 1)	25. Provo invidia tutti i giorni.
Belk, 1985	26. Mi dà fastidio quando i miei amici hanno cose che io non posso permettermi.

Source (*continued*)	Item
Van de Ven et al., 2009	27. A volte vorrei sottrarre qualcosa a chi è più avvantaggiato di me.
Smith et al., 1999 (DES, item 3)	28. I sentimenti di invidia mi tormentano costantemente.
Smith et al. 1999 (DES, item 7); Vecchio, 1995	29. Non mi sembra giusto che alcune persone abbiano tutto.
Vecchio, 1995	30. A volte mi sembra di essere l'unico a non ottenere mai quello che desidera.
Haslam & Bornstein, 1996	31. Spesso il successo degli altri mi fa sentire un fallito.
Smith et al., 1999 (DES, item 4)	32. È davvero frustrante vedere che alcune persone hanno successo così facilmente.
Van de Ven et al., 2009	33. A volte spero che gli altri commettano un errore.
Smith et al., 1999 (DES, item 5)	34. Indipendentemente da ciò che faccio, l'invidia mi affligge sempre.
Gold, 1996; Schaubroeck & Lam, 2004; Vecchio, 1995	35. Di solito mi rende infelice vedermi intorno persone più avvantaggiate di me.
Smith et al., 1999 (DES, item 7)	36. In qualche modo non sembra giusto che alcune persone abbiano tutte le capacità.
Schaubroeck & Lam, 2004; Smith et al., 1999 (DES, item 2)	37. C'è sempre qualche persona verso la quale mi sento inferiore.
DES (8)	38. Il successo degli altri mi fa provare risentimento verso di loro.
Parrott & Smith, 1993	39. Tendo a sentirmi un mediocre quando gli altri fanno strada.
Vecchio, 1995	40. È frustrante vedere che gli altri hanno la fortuna di ottenere posizioni migliori delle mie.
Smith et al., 1996	41. Di solito il mio sentimento di invidia è molto doloroso.

APPENDIX B

Descriptive statistics of dipositional envy items

Item		M	SD	As[a]	K[b]
1.	*Se qualcuno mi supera tendo a pensare che non sia giusto.*	3.17	1.61	.49	-.57
2.	*Di solito, tanto meglio sta qualcun altro, tanto peggio mi sento io.*	2.19	1.43	1.31	1.15
3.	*Mi dà fastidio quando vedo persone che comprano tutto quello che vogliono.*	3.31	1.96	.42	-1.06
4.	*A volte mi piace fare il guastafeste.*	2.23	1.59	1.27	.62
5.	*Sento che il mio impegno è apprezzato meno di quello di altri.*	3.08	1.78	.54	-.77
6.	*A volte desidero che gli altri falliscano.*	2.49	1.73	.97	-.28
7.	*Tendo a provare rabbia quando gli altri hanno successo.*	2.26	1.56	1.29	.78
8.	*Alla maggior parte delle persone le cose vanno meglio che a me.*	2.79	1.72	.82	-.23
9.	*Di solito penso molto a cosa hanno gli altri che io vorrei.*	2.86	1.82	.77	-.53
10.	Quando miei amici o conoscenti hanno successo mi sento ferito e amareggiato.	1.83	1.31	1.80	2.61
11.	*Sogno spesso di ottenere quello che hanno gli altri.*	2.44	1.66	1.10	.28
12.	Tendo a infastidirmi quando le buone qualità degli altri sono riconosciute.	1.99	1.41	1.56	1.81
13.	Di solito detesto vedere gli altri che si divertono.	1.77	1.26	1.89	3.17
14.	*Vedere che gli altri si affermano quando io non ci riesco mi amareggia.*	3.32	1.93	.43	-1.06
15.	*Di solito ho la sensazione che a me manchino alcune qualità che gli altri hanno.*	3.60	1.99	.24	-1.22
16.	Quando i miei amici hanno successo mi sento ferito.	1.62	1.16	2.32	5.56
17.	*Spesso vorrei cambiare la mia situazione con quella di qualcun altro più avvantaggiato di me.*	2.72	1.82	.84	-.48
18.	*Mi dà fastidio se qualcuno mi supera o fa qualcosa meglio di me.*	2.77	1.77	.76	-.59
19.	A volte vorrei danneggiare chi occupa una posizione migliore della mia.	1.71	1.27	2.12	4.24
20.	Di solito mi addolora pensare al successo dei miei amici.	1.57	1.16	2.50	6.09
21.	Tendo a parlare male di chi ottiene qualcosa che io desidero, ma non ho.	1.84	1.31	1.81	2.79
22.	Preferirei vedere vincere alla lotteria qualcuno che non conosco, piuttosto che un conoscente.	1.99	1.66	1.70	1.80
23.	*A volte vorrei essere come qualcun altro.*	2.95	1.85	.72	-.64
24.	Mi sento amareggiato quando vedo persone che hanno successo.	1.94	1.40	1.63	2.06

Item (*continued*)	M	SD	As[a]	K[b]
25. Tendo a sminuire i successi degli altri.	2.04	1.39	1.41	1.33
26. Provo invidia tutti i giorni.	1.73	1.35	2.14	4.02
27. Mi dà fastidio quando i miei amici hanno cose che io non posso permettermi.	2.11	1.48	1.52	1.62
28. I sentimenti di invidia mi tormentano costantemente.	1.52	1.15	2.79	8.01
29. Non mi sembra giusto che alcune persone abbiano tutto.	3.63	2.10	.26	-1.27
30. A volte mi sembra di essere l'unico a non ottenere mai quello che desidera.	2.51	1.80	1.09	.08
31. Spesso il successo degli altri mi fa sentire un fallito.	2.37	1.73	1.25	.55
32. È davvero frustrante vedere che alcune persone hanno successo così facilmente.	3.22	1.95	.48	-1.00
33. A volte spero che gli altri commettano un errore.	2.39	1.63	1.14	.39
34. Indipendentemente da ciò che faccio, l'invidia mi affligge sempre.	1.46	1.08	3.05	9.93
35. Di solito mi rende infelice vedermi intorno persone più avvantaggiate di me.	2.14	1.51	1.38	1.01
36. In qualche modo non sembra giusto che alcune persone abbiano tutte le capacità.	2.36	1.66	1.16	.35
37. C'è sempre qualche persona verso la quale mi sento inferiore.	3.51	2.11	.35	-1.27
38. Il successo degli altri mi fa provare risentimento verso di loro.	1.80	1.25	1.75	2.49
39. Tendo a sentirmi un mediocre quando gli altri fanno strada.	2.85	1.91	.74	-.72
40. È frustrante vedere che gli altri hanno la fortuna di ottenere posizioni migliori delle mie.	2.56	1.74	1.04	.09
41. Di solito il mio sentimento di invidia è molto doloroso.	1.84	1.48	1.94	3.02

Note. [a] SE = 0.09; [b] SE = 0.18

APPENDIX C

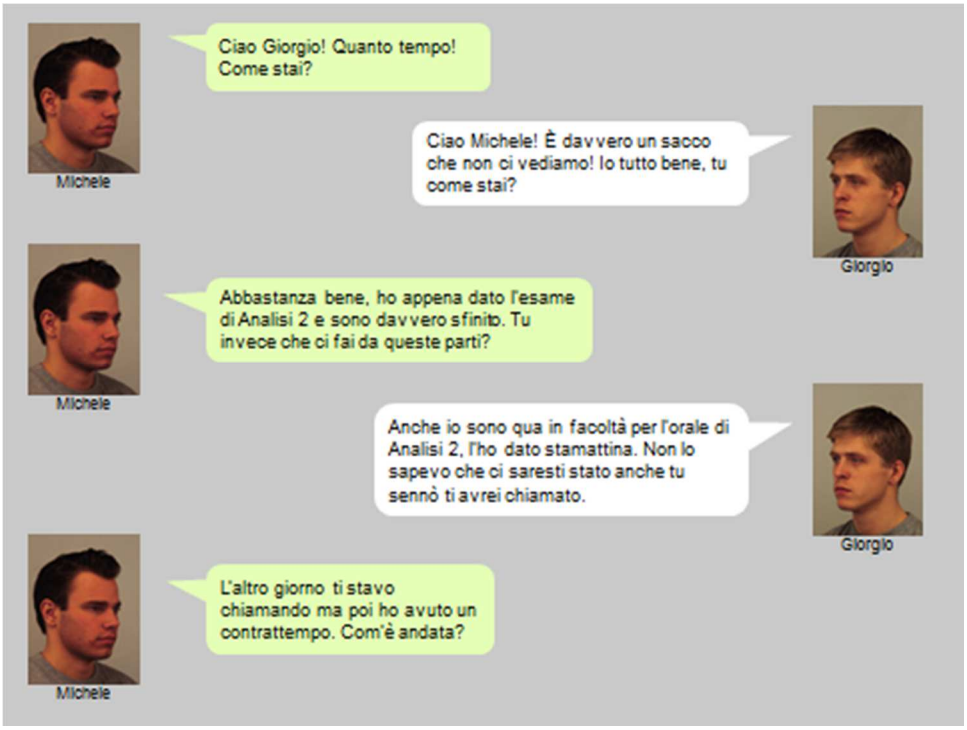
EFA on dispositional envy items– PAF (Promax rotation)

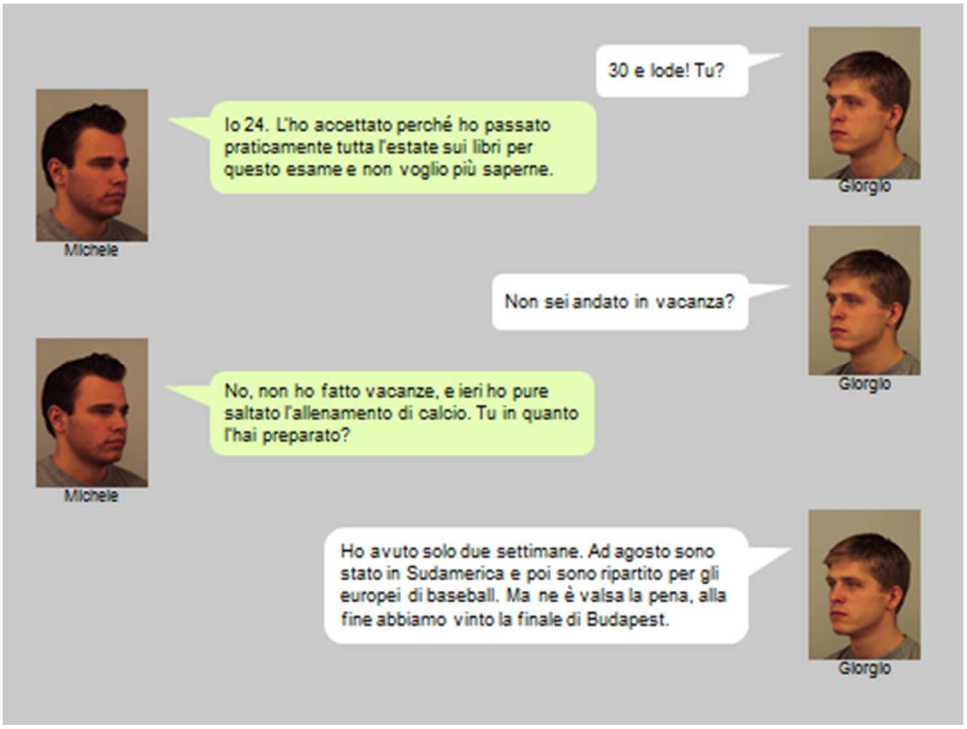
Item		F1	F2	F3
1.	Se qualcuno mi supera tendo a pensare che non sia giusto.	.54	.10	-.11
2.	Di solito, tanto meglio sta qualcun altro, tanto peggio mi sento io.	.60	.19	-.07
3.	Mi dà fastidio quando vedo persone che comprano tutto quello che vogliono.	.52	.22	-.06
4.	A volte mi piace fare il guastafeste.	.65	-.02	-.20
5.	Sento che il mio impegno è apprezzato meno di quello di altri.	.20	.47	-.02
6.	A volte desidero che gli altri falliscano.	.84	-.05	-.01
7.	Tendo a provare rabbia quando gli altri hanno successo.	.75	.01	.09
8.	Alla maggior parte delle persone le cose vanno meglio che a me.	-.01	.77	.02
9.	Di solito penso molto a cosa hanno gli altri che io vorrei.	.16	.74	-.10
11.	Sogno spesso di ottenere quello che hanno gli altri.	.24	.61	-.05
14.	Vedere che gli altri si affermano quando io non ci riesco mi amareggia.	.36	.11	.39
15.	Di solito ho la sensazione che a me manchino alcune qualità che gli altri hanno.	-.20	.39	.53
17.	Spesso vorrei cambiare la mia situazione con quella di qualcun altro più avvantaggiato di me.	-.01	.80	.07
18.	Mi dà fastidio se qualcuno mi supera o fa qualcosa meglio di me.	.58	-.07	.30
23.	A volte vorrei essere come qualcun altro.	-.12	.74	.18
29.	Non mi sembra giusto che alcune persone abbiano tutto.	.34	.23	.07
30.	A volte mi sembra di essere l'unico a non ottenere mai quello che desidera.	-.12	.54	.33
31.	Spesso il successo degli altri mi fa sentire un fallito.	.03	.13	.71
32.	È davvero frustrante vedere che alcune persone hanno successo così facilmente.	.21	.23	.39
33.	A volte spero che gli altri commettano un errore.	.80	-.15	.10

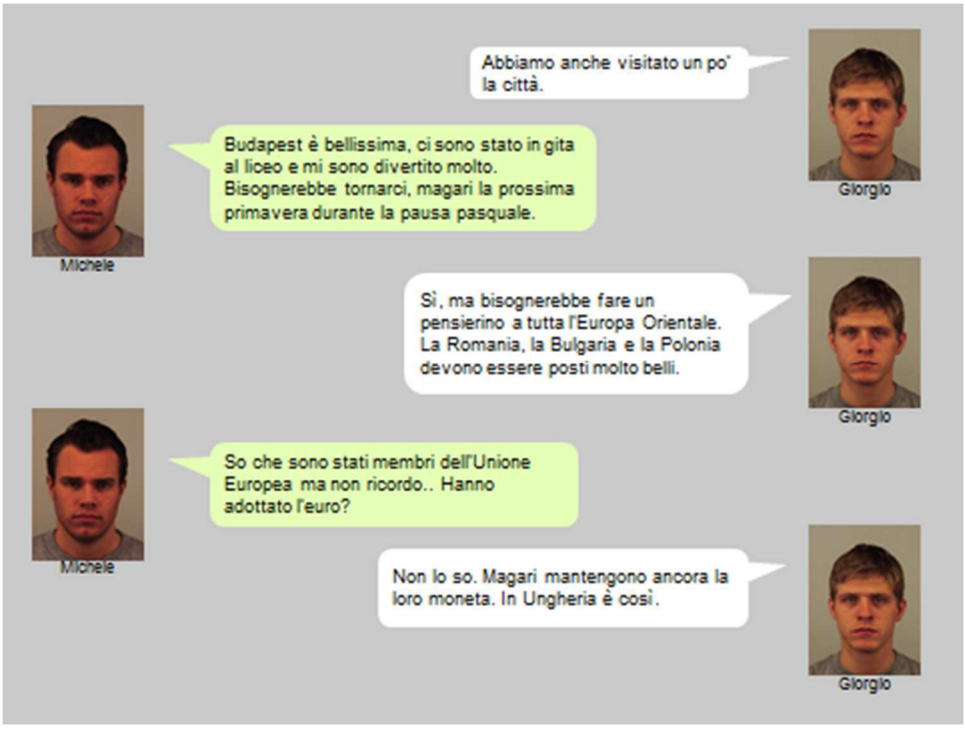
35.	Di solito mi rende infelice vedermi intorno persone più avvantaggiate di me.	.38	.05	.45
36.	In qualche modo non sembra giusto che alcune persone abbiano tutte le capacità.	.24	.25	.35
37.	C'è sempre qualche persona verso la quale mi sento inferiore.	-.16	.21	.71
39.	Tendo a sentirmi un mediocre quando gli altri fanno strada.	-.11	-.09	1.03
40.	È frustrante vedere che gli altri hanno la fortuna di ottenere posizioni migliori delle mie.	.27	.10	.51
Explained variance		48.2%	5.3%	2.5%

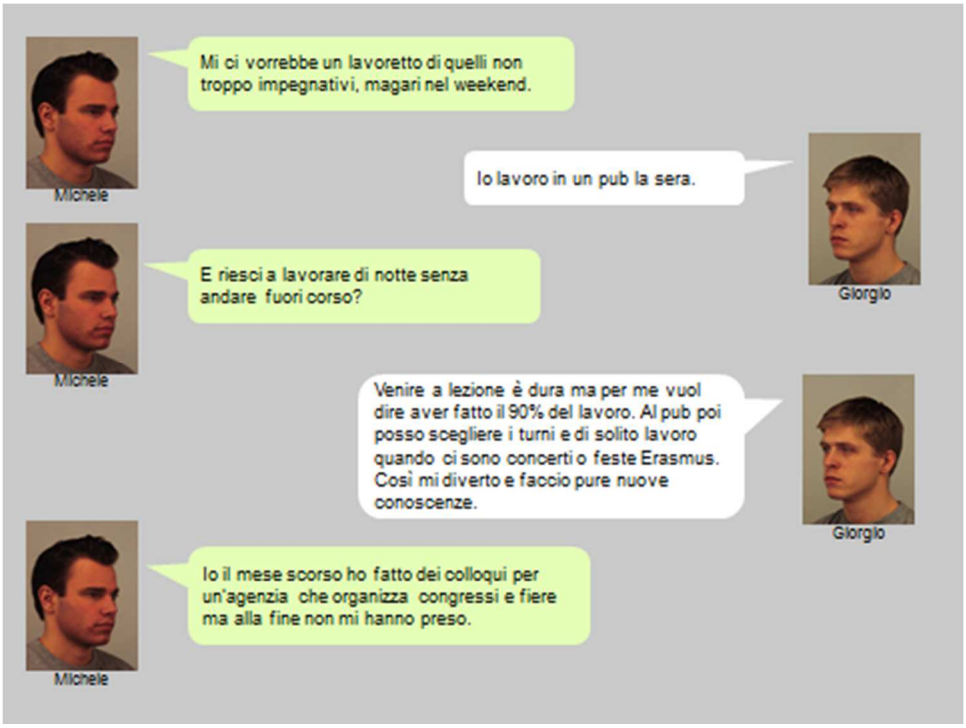
APPENDIX D

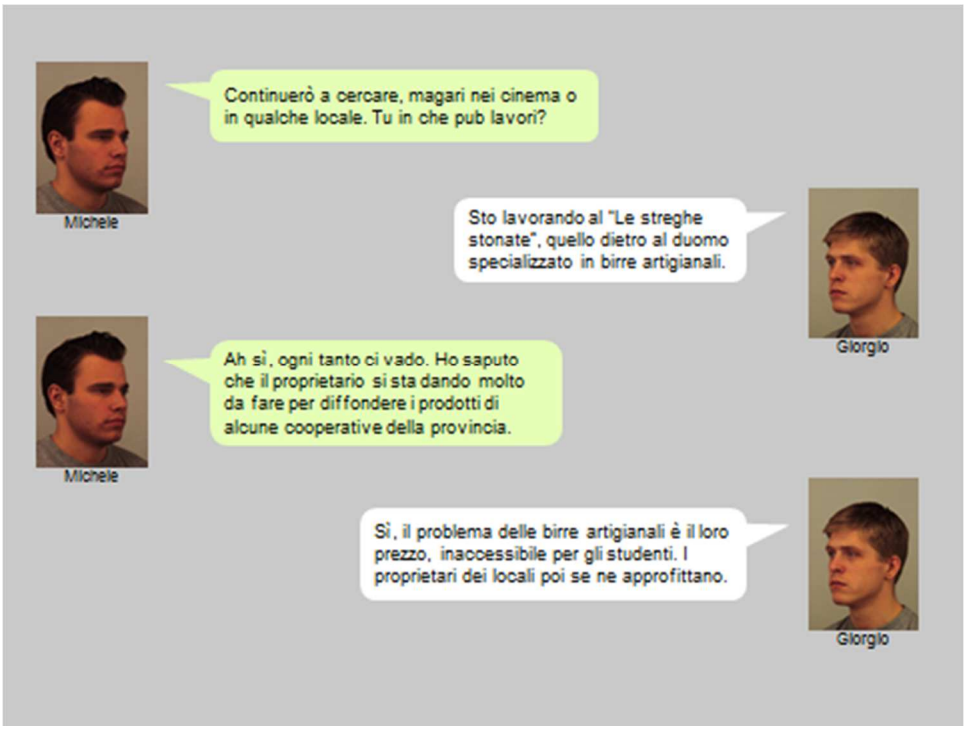
Upward social comparison scenario – Male version

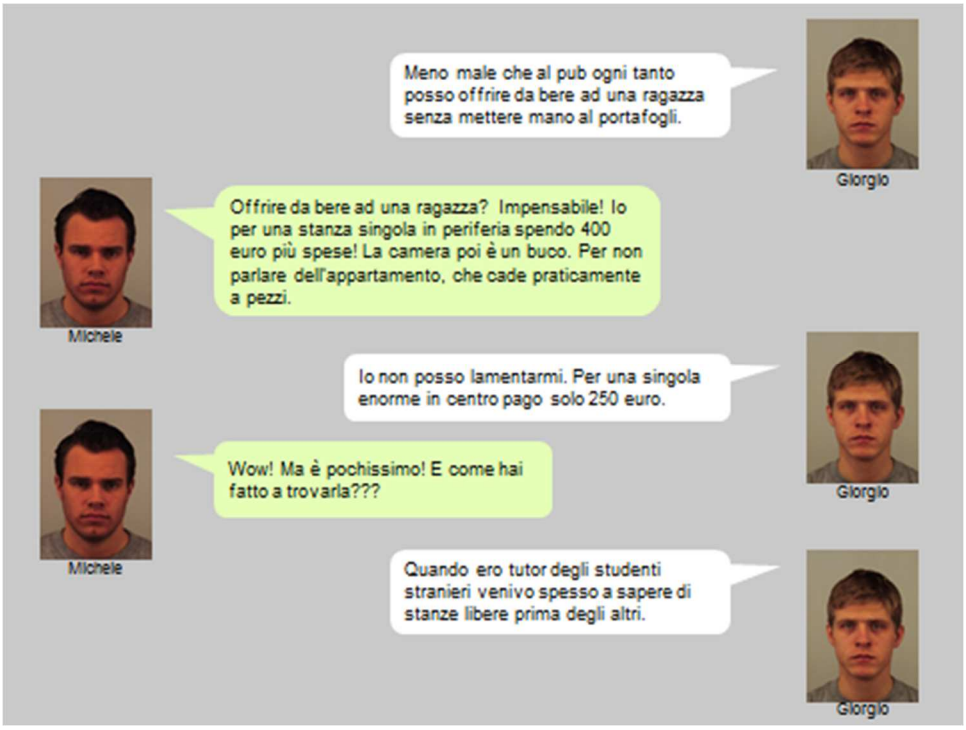


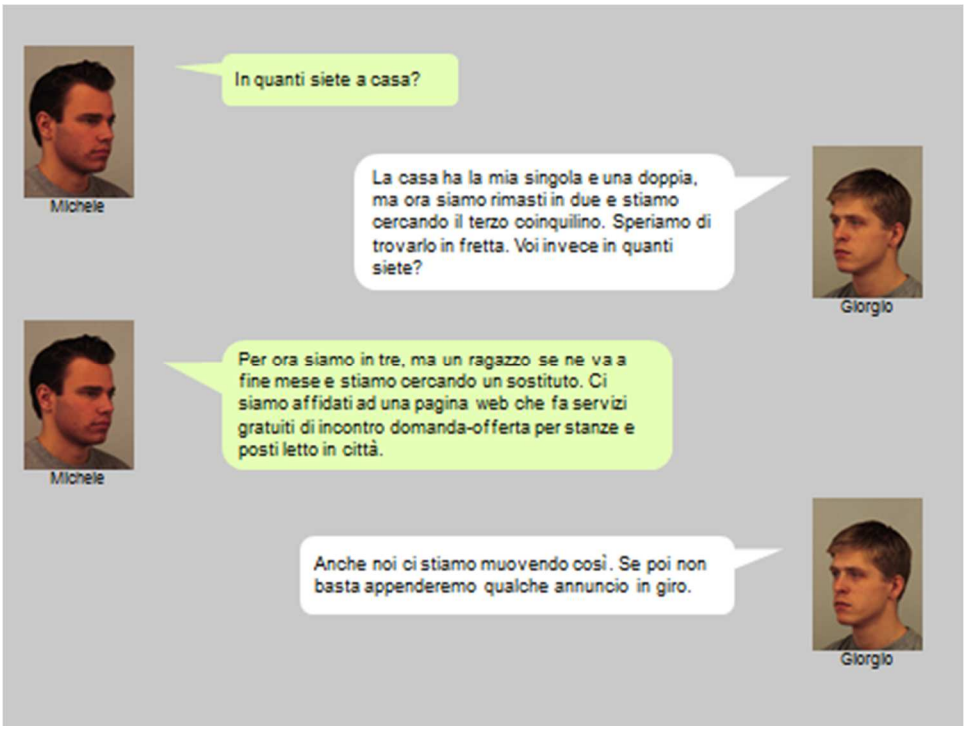


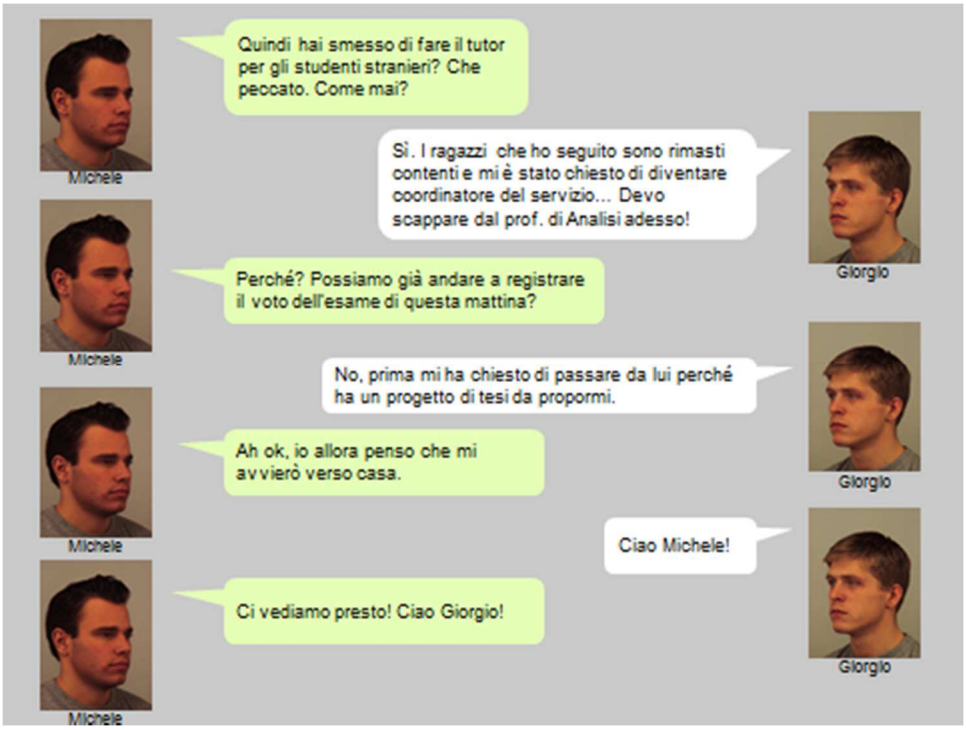

Abbiamo anche visitato un po' la città.
Giorgio
Budapest è bellissima, ci sono stato in gita al liceo e mi sono divertito molto. Bisognerebbe tornarci, magari la prossima primavera durante la pausa pasquale.
Michele
Sì, ma bisognerebbe fare un pensierino a tutta l'Europa Orientale. La Romania, la Bulgaria e la Polonia devono essere posti molto belli.
Giorgio
So che sono stati membri dell'Unione Europea ma non ricordo.. Hanno adottato l'euro?
Michele
Non lo so. Magari mantengono ancora la loro moneta. In Ungheria è così.
Giorgio


Mi ci vorrebbe un lavoretto di quelli non troppo impegnativi, magari nel weekend.
Michele
Io lavoro in un pub la sera.
Giorgio
E riesci a lavorare di notte senza andare fuori corso?
Michele
Venire a lezione è dura ma per me vuol dire aver fatto il 90% del lavoro. Al pub poi posso scegliere i turni e di solito lavoro quando ci sono concerti o feste Erasmus. Così mi diverto e faccio pure nuove conoscenze.
Giorgio
Io il mese scorso ho fatto dei colloqui per un'agenzia che organizza congressi e fiere ma alla fine non mi hanno preso.
Michele

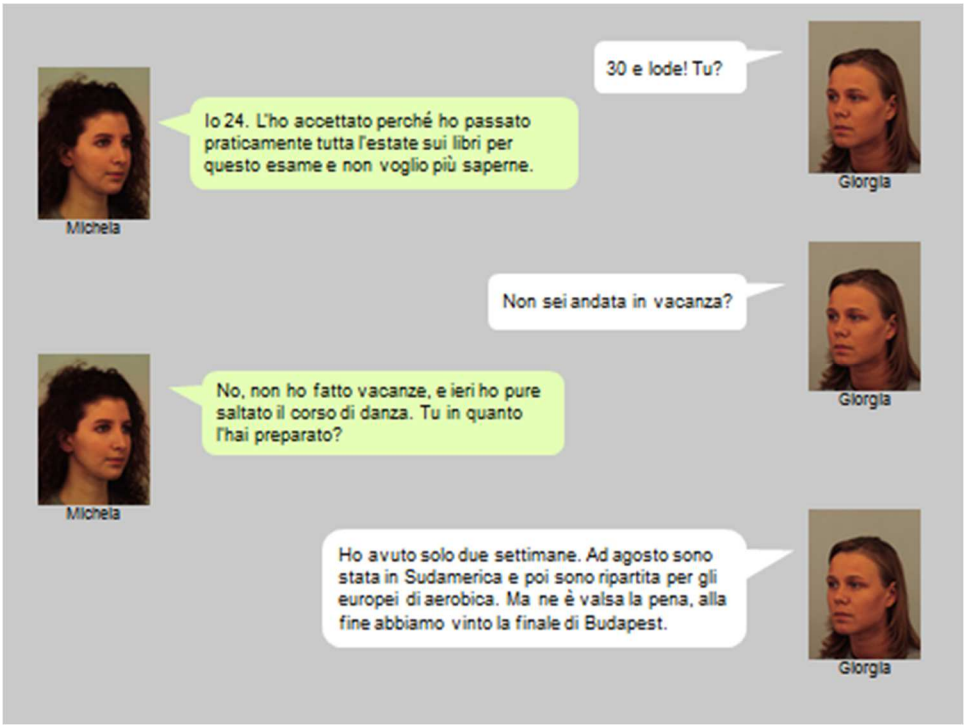

Continuerò a cercare, magari nei cinema o in qualche locale. Tu in che pub lavori?
Michele
Sto lavorando al "Le streghe stonate", quello dietro al duomo specializzato in birre artigianali.
Giorgio
Ah sì, ogni tanto ci vado. Ho saputo che il proprietario si sta dando molto da fare per diffondere i prodotti di alcune cooperative della provincia.
Michele
Sì, il problema delle birre artigianali è il loro prezzo, inaccessibile per gli studenti. I proprietari dei locali poi se ne approfittano.
Giorgio

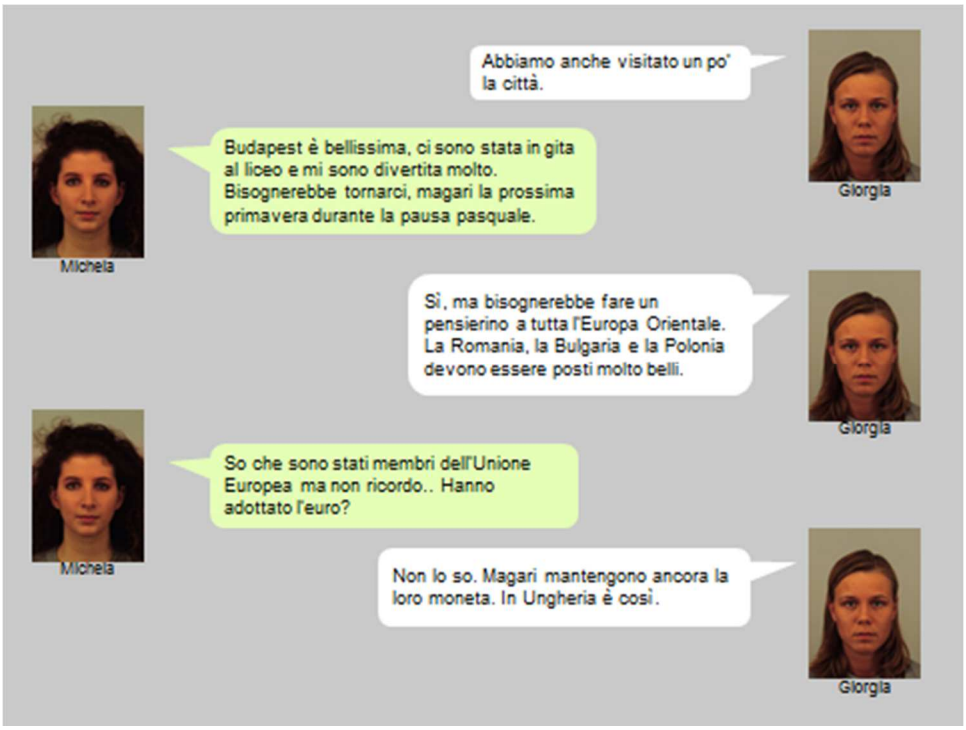

Meno male che al pub ogni tanto posso offrire da bere ad una ragazza senza mettere mano al portafogli.
Giorgio
Offrire da bere ad una ragazza? Impensabile! Io per una stanza singola in periferia spendo 400 euro più spese! La camera poi è un buco. Per non parlare dell'appartamento, che cade praticamente a pezzi.
Michele
Io non posso lamentarmi. Per una singola enorme in centro pago solo 250 euro.
Giorgio
Wow! Ma è pochissimo! E come hai fatto a trovarla???
Michele
Quando ero tutor degli studenti stranieri venivo spesso a sapere di stanze libere prima degli altri.
Giorgio

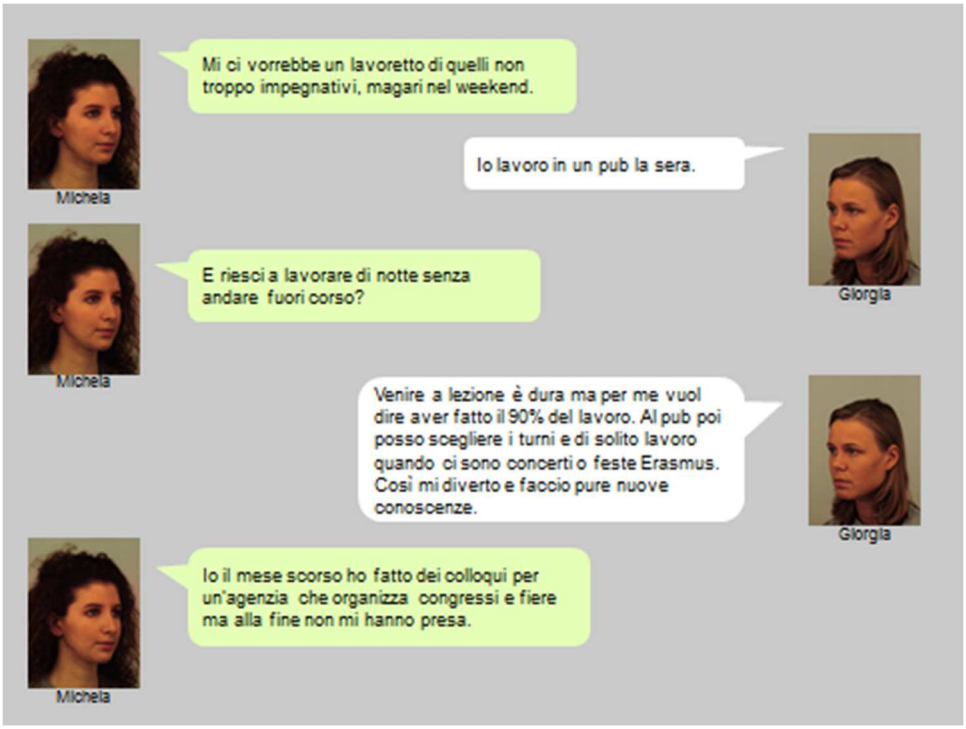

In quanti siete a casa?
Michele
La casa ha la mia singola e una doppia, ma ora siamo rimasti in due e stiamo cercando il terzo coinquilino. Speriamo di trovarlo in fretta. Voi invece in quanti siete?
Giorgio
Per ora siamo in tre, ma un ragazzo se ne va a fine mese e stiamo cercando un sostituto. Ci siamo affidati ad una pagina web che fa servizi gratuiti di incontro domanda-offerta per stanze e posti letto in città.
Michele
Anche noi ci stiamo muovendo così. Se poi non basta appenderemo qualche annuncio in giro.
Giorgio

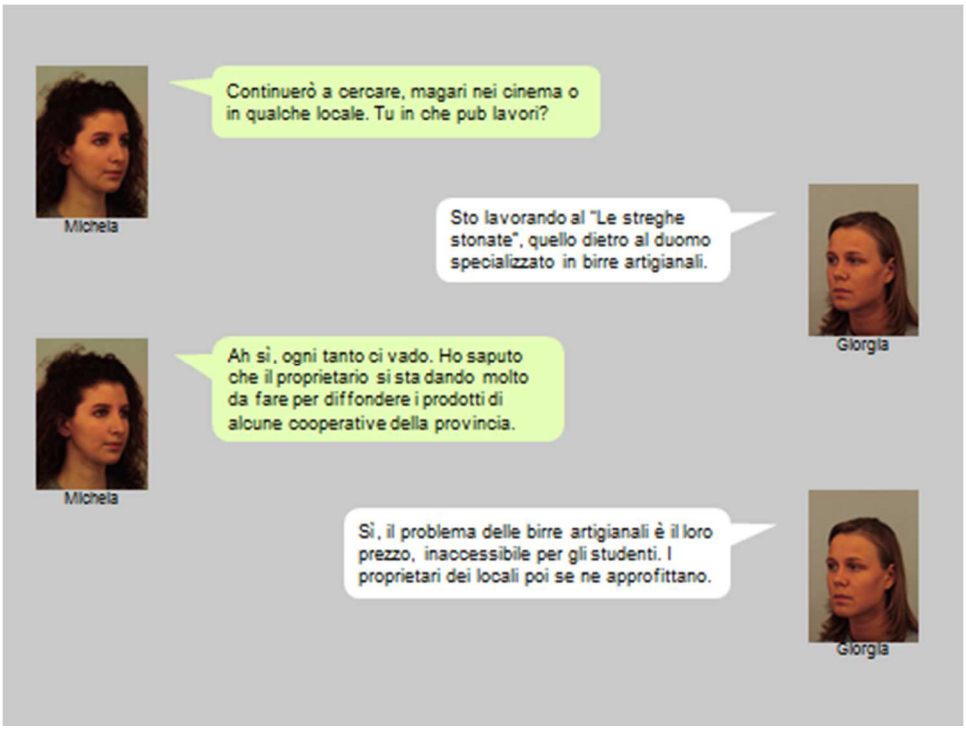

Quindi hai smesso di fare il tutor per gli studenti stranieri? Che peccato. Come mai?
Michele
Sì. I ragazzi che ho seguito sono rimasti contenti e mi è stato chiesto di diventare coordinatore del servizio... Devo scappare dal prof. di Analisi adesso!
Giorgio
Perché? Possiamo già andare a registrare il voto dell'esame di questa mattina?
Michele
No, prima mi ha chiesto di passare da lui perché ha un progetto di tesi da propormi.
Giorgio
Ah ok, io allora penso che mi avvierò verso casa.
Michele
Ciao Michele!
Giorgio
Ci vediamo presto! Ciao Giorgio!
Michele

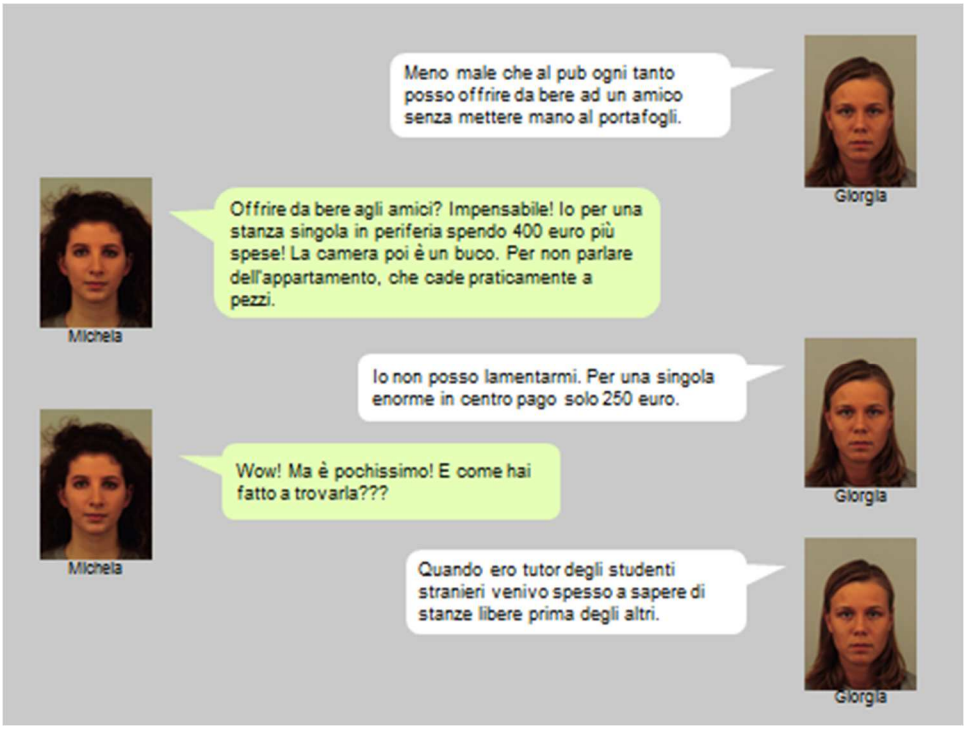
Upward social comparison scenario – Female version




Abbiamo anche visitato un po' la città.
Giorgia
Budapest è bellissima, ci sono stata in gita al liceo e mi sono divertita molto. Bisognerebbe tornarci, magari la prossima primavera durante la pausa pasquale.
Michela
Sì, ma bisognerebbe fare un pensierino a tutta l'Europa Orientale. La Romania, la Bulgaria e la Polonia devono essere posti molto belli.
Giorgia
So che sono stati membri dell'Unione Europea ma non ricordo.. Hanno adottato l'euro?
Michela
Non lo so. Magari mantengono ancora la loro moneta. In Ungheria è così.
Giorgia


Mi ci vorrebbe un lavoretto di quelli non troppo impegnativi, magari nel weekend.
Michela
Io lavoro in un pub la sera.
Giorgia
E riesci a lavorare di notte senza andare fuori corso?
Michela
Venire a lezione è dura ma per me vuol dire aver fatto il 90% del lavoro. Al pub poi posso scegliere i turni e di solito lavoro quando ci sono concerti o feste Erasmus. Così mi diverto e faccio pure nuove conoscenze.
Giorgia
Io il mese scorso ho fatto dei colloqui per un'agenzia che organizza congressi e fiere ma alla fine non mi hanno presa.
Michela


Continuerò a cercare, magari nei cinema o in qualche locale. Tu in che pub lavori?
Michela
Sto lavorando al "Le streghe stonate", quello dietro al duomo specializzato in birre artigianali.
Giorgia
Ah sì, ogni tanto ci vado. Ho saputo che il proprietario si sta dando molto da fare per diffondere i prodotti di alcune cooperative della provincia.
Michela
Sì, il problema delle birre artigianali è il loro prezzo, inaccessibile per gli studenti. I proprietari dei locali poi se ne approfittano.
Giorgia


Meno male che al pub ogni tanto posso offrire da bere ad un amico senza mettere mano al portafogli.
Giorgia
Offrire da bere agli amici? Impensabile! Io per una stanza singola in periferia spendo 400 euro più spese! La camera poi è un buco. Per non parlare dell'appartamento, che cade praticamente a pezzi.
Michela
Io non posso lamentarmi. Per una singola enorme in centro pago solo 250 euro.
Giorgia
Wow! Ma è pochissimo! E come hai fatto a trovarla???
Michela
Quando ero tutor degli studenti stranieri venivo spesso a sapere di stanze libere prima degli altri.
Giorgia


In quanti siete a casa?
Michela
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Giorgia
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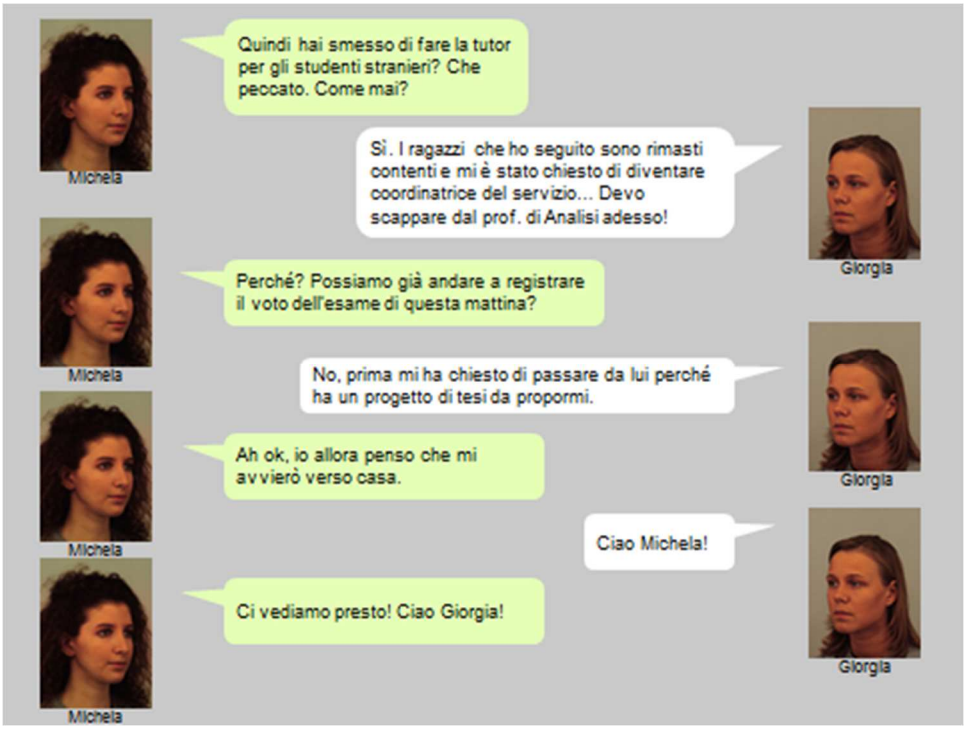
Michela
Anche noi ci stiamo muovendo così. Se poi non basta appenderemo qualche annuncio in giro.
Giorgia


Quindi hai smesso di fare la tutor per gli studenti stranieri? Che peccato. Come mai?
Michela
Sì. I ragazzi che ho seguito sono rimasti contenti e mi è stato chiesto di diventare coordinatrice del servizio... Devo scappare dal prof. di Analisi adesso!
Giorgia
Perché? Possiamo già andare a registrare il voto dell'esame di questa mattina?
Michela
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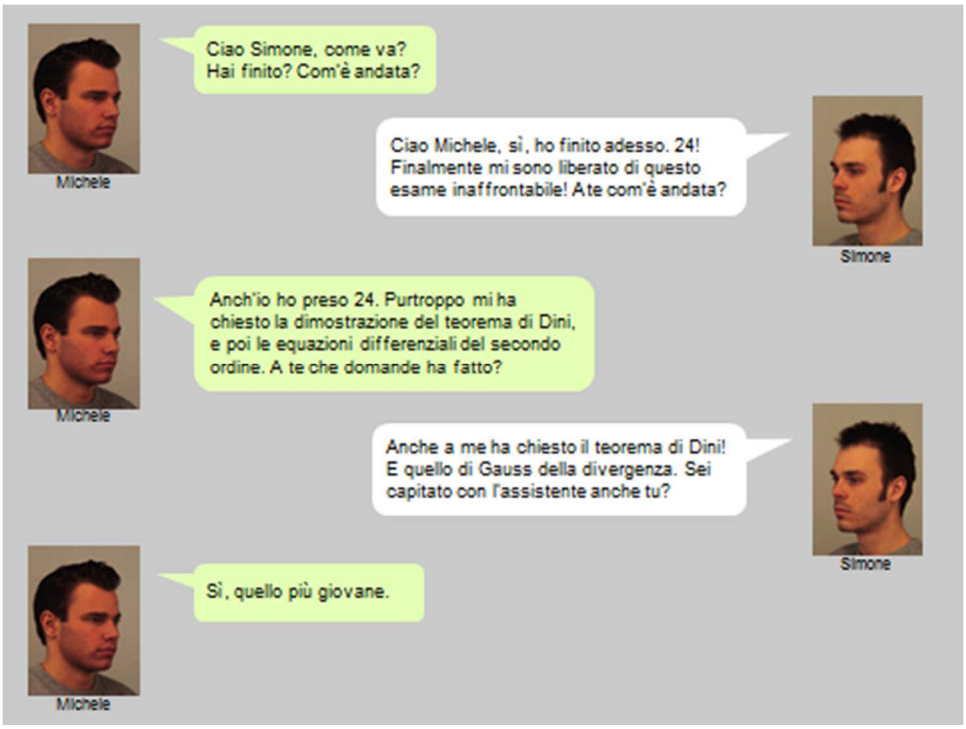
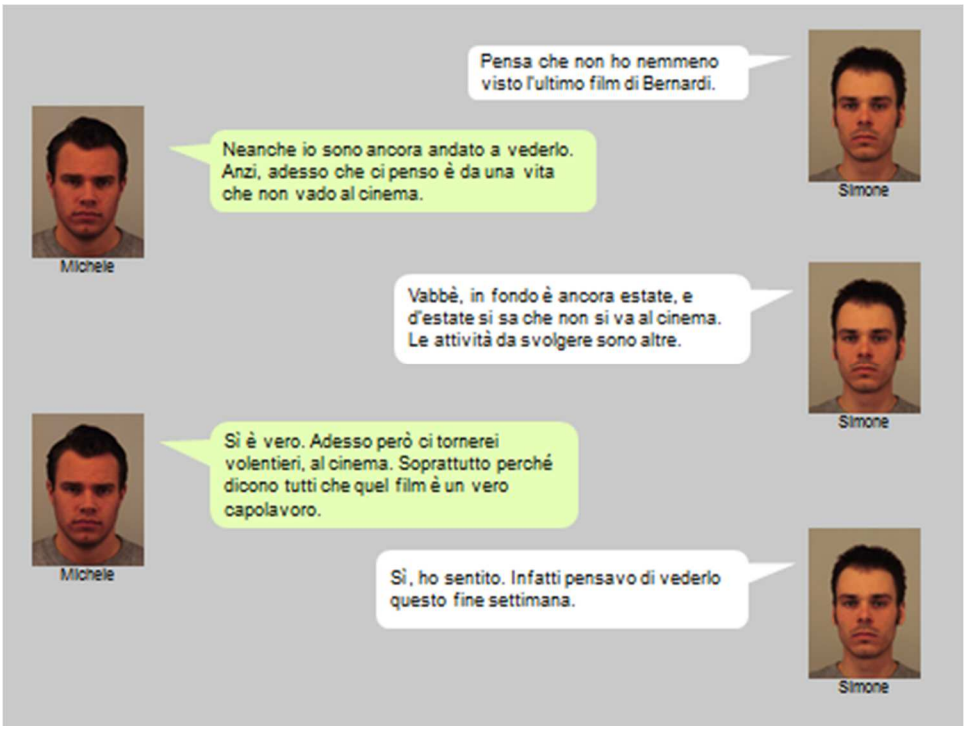
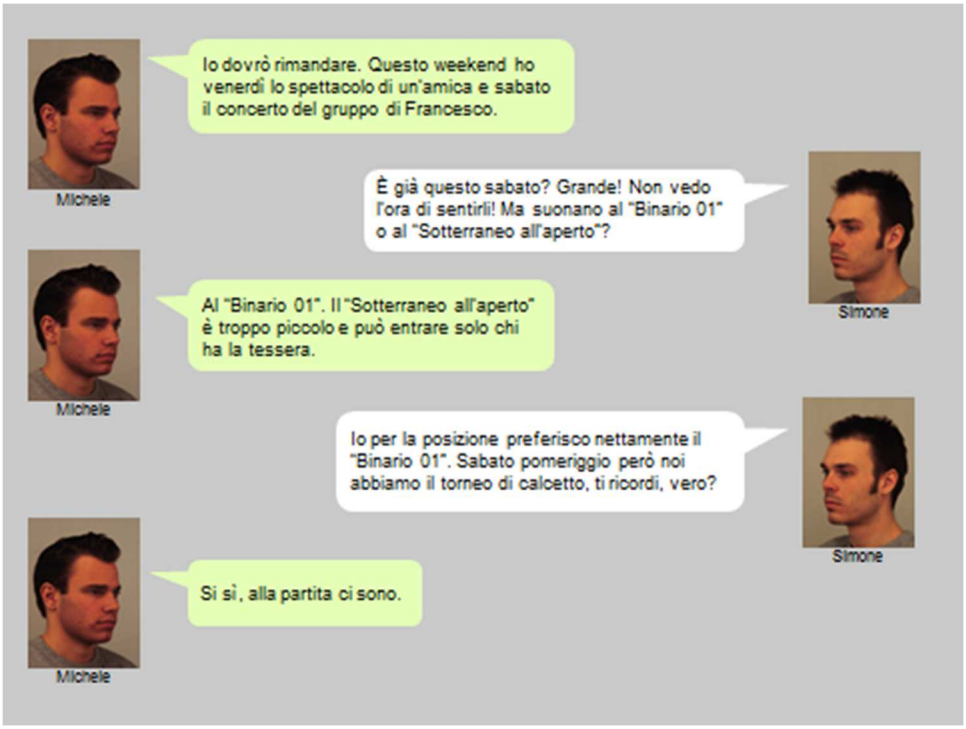
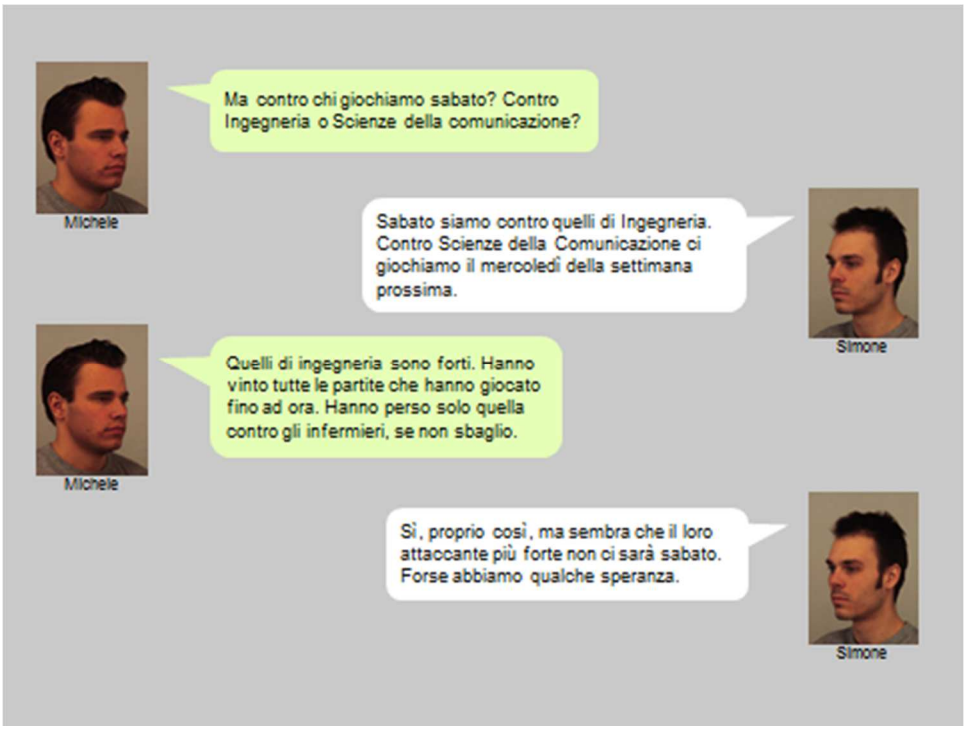
Giorgia
Ah ok, io allora penso che mi avvierò verso casa.
Michela
Ciao Michela!
Giorgia
Ci vediamo presto! Ciao Giorgia!
Michela

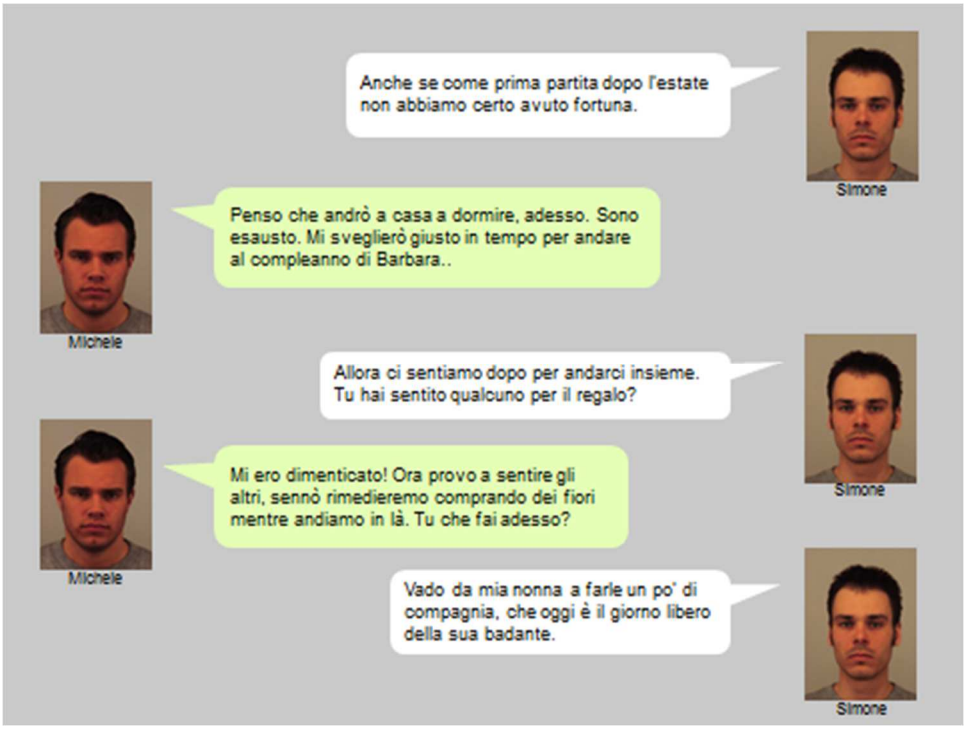
Same-level social comparison scenario – Male version

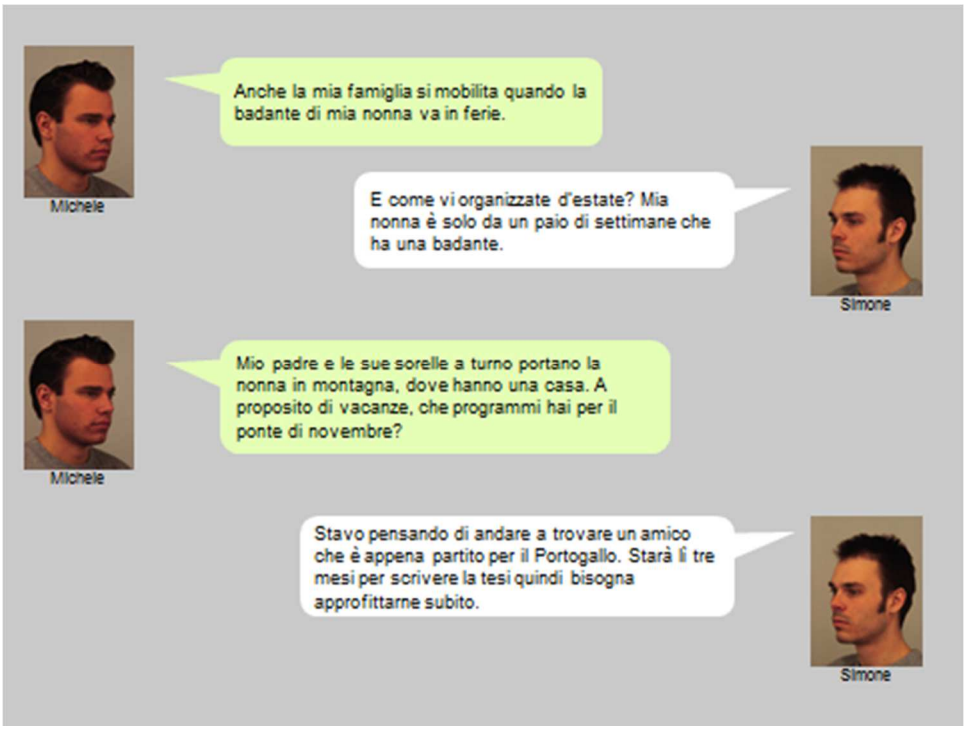


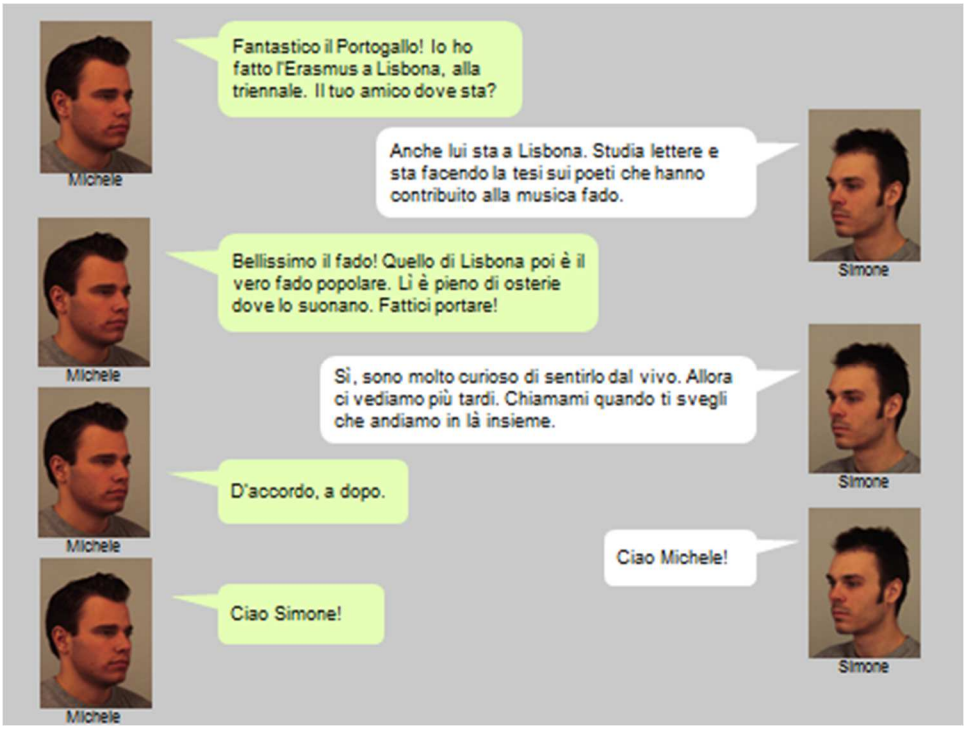

Pensa che non ho nemmeno visto l'ultimo film di Bernardi.
Simone
Neanche io sono ancora andato a vederlo. Anzi, adesso che ci penso è da una vita che non vado al cinema.
Michele
Vabbè, in fondo è ancora estate, e d'estate si sa che non si va al cinema. Le attività da svolgere sono altre.
Simone
Sì è vero. Adesso però ci tornerei volentieri, al cinema. Soprattutto perché dicono tutti che quel film è un vero capolavoro.
Michele
Sì, ho sentito. Infatti pensavo di vederlo questo fine settimana.
Simone


Io dovrò rimandare. Questo weekend ho venerdì lo spettacolo di un'amica e sabato il concerto del gruppo di Francesco.
Michele
È già questo sabato? Grande! Non vedo l'ora di sentirli! Ma suonano al "Binario 01" o al "Sotterraneo all'aperto"?
Simone
Al "Binario 01". Il "Sotterraneo all'aperto" è troppo piccolo e può entrare solo chi ha la tessera.
Michele
Io per la posizione preferisco nettamente il "Binario 01". Sabato pomeriggio però noi abbiamo il torneo di calcetto, ti ricordi, vero?
Simone
Si sì, alla partita ci sono.
Michele

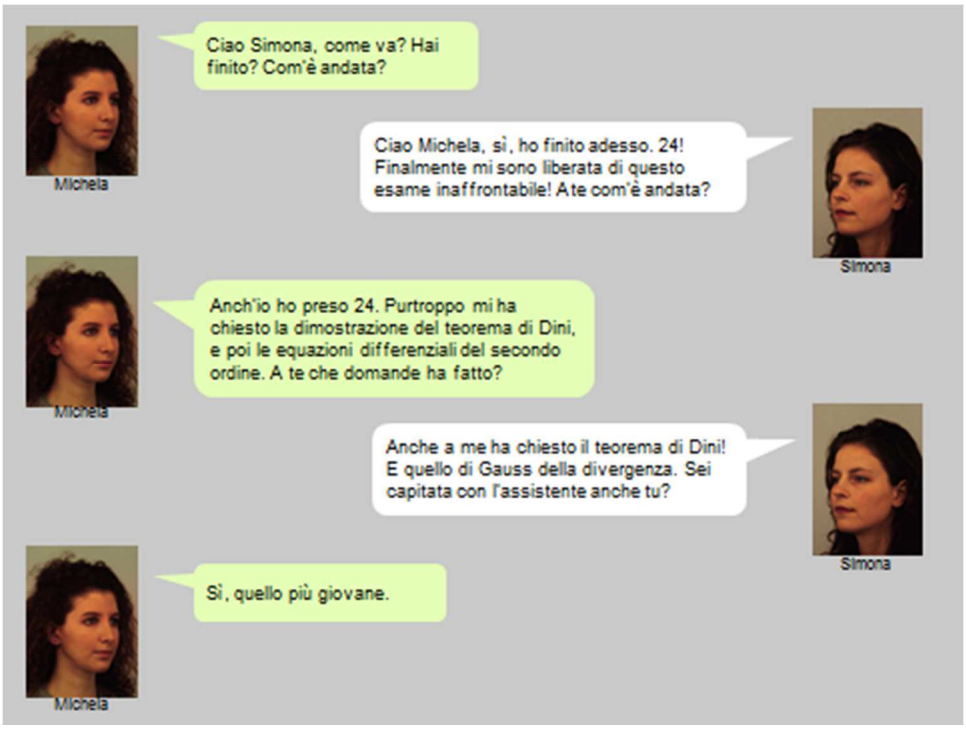

Ma contro chi giochiamo sabato? Contro Ingegneria o Scienze della comunicazione?
Michele
Sabato siamo contro quelli di Ingegneria. Contro Scienze della Comunicazione ci giochiamo il mercoledì della settimana prossima.
Simone
Quelli di ingegneria sono forti. Hanno vinto tutte le partite che hanno giocato fino ad ora. Hanno perso solo quella contro gli infermieri, se non sbaglio.
Michele
Sì, proprio così, ma sembra che il loro attaccante più forte non ci sarà sabato. Forse abbiamo qualche speranza.
Simone

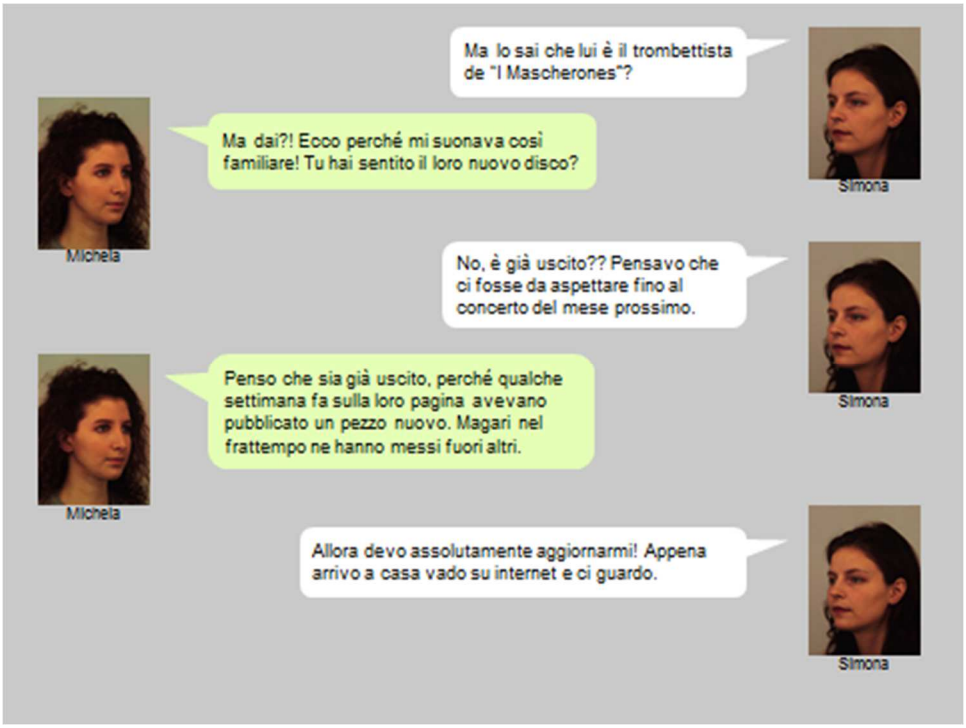

Anche se come prima partita dopo l'estate non abbiamo certo avuto fortuna.
Simone
Penso che andrò a casa a dormire, adesso. Sono esausto. Mi sveglierò giusto in tempo per andare al compleanno di Barbara..
Michele
Allora ci sentiamo dopo per andarci insieme. Tu hai sentito qualcuno per il regalo?
Simone
Mi ero dimenticato! Ora provo a sentire gli altri, sennò rimedieremo comprando dei fiori mentre andiamo in là. Tu che fai adesso?
Michele
Vado da mia nonna a farle un po' di compagnia, che oggi è il giorno libero della sua badante.
Simone

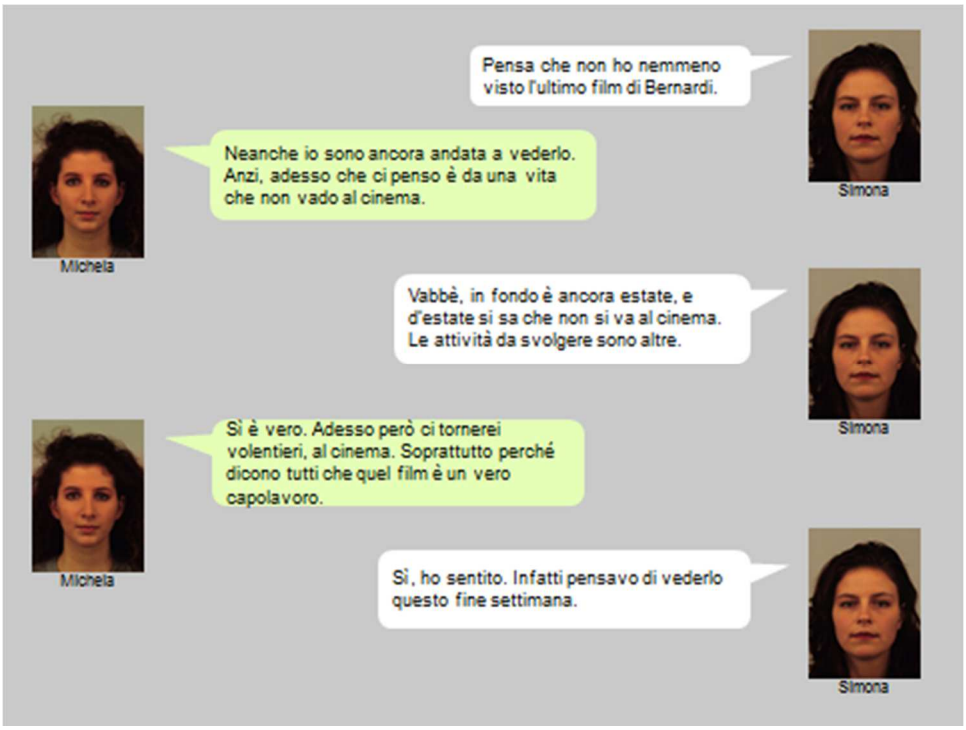

Michele
Anche la mia famiglia si mobilita quando la badante di mia nonna va in ferie.
E come vi organizzate d'estate? Mia nonna è solo da un paio di settimane che ha una badante.
Simone
Michele
Mio padre e le sue sorelle a turno portano la nonna in montagna, dove hanno una casa. A proposito di vacanze, che programmi hai per il ponte di novembre?
Stavo pensando di andare a trovare un amico che è appena partito per il Portogallo. Starà lì tre mesi per scrivere la tesi quindi bisogna approfittarne subito.
Simone

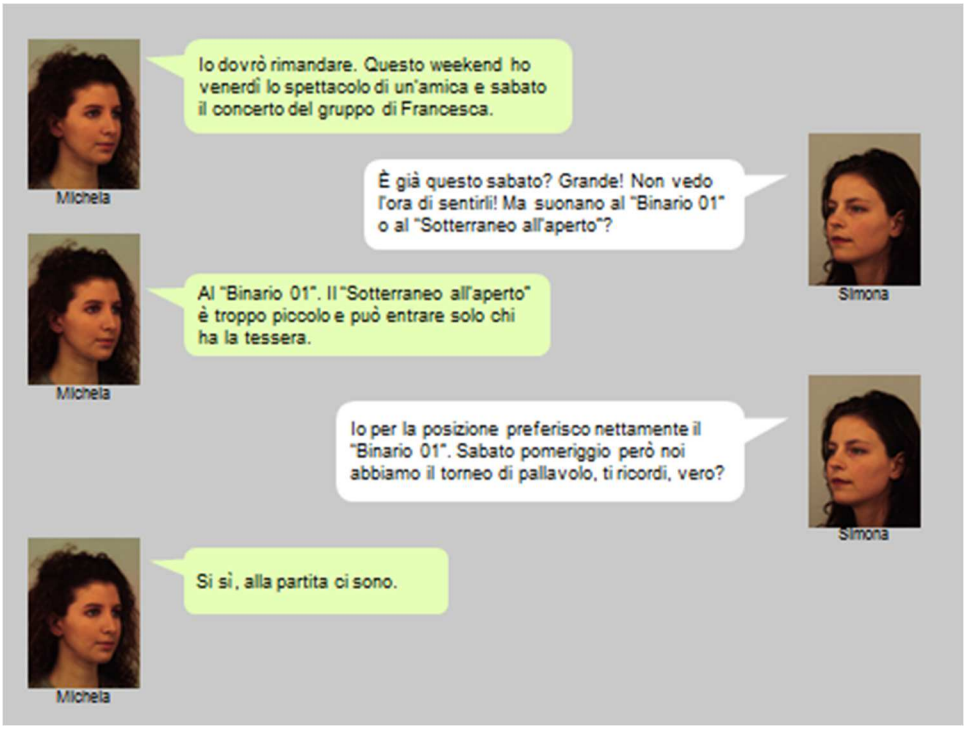

Michele
Fantastico il Portogallo! Io ho fatto l'Erasmus a Lisbona, alla triennale. Il tuo amico dove sta?
Anche lui sta a Lisbona. Studia lettere e sta facendo la tesi sui poeti che hanno contribuito alla musica fado.
Simone
Michele
Bellissimo il fado! Quello di Lisbona poi è il vero fado popolare. Lì è pieno di osterie dove lo suonano. Fattici portare!
Michele
Sì, sono molto curioso di sentirlo dal vivo. Allora ci vediamo più tardi. Chiamami quando ti svegli che andiamo in là insieme.
Simone
Michele
D'accordo, a dopo.
Ciao Michele!
Simone
Michele
Ciao Simone!
Michele

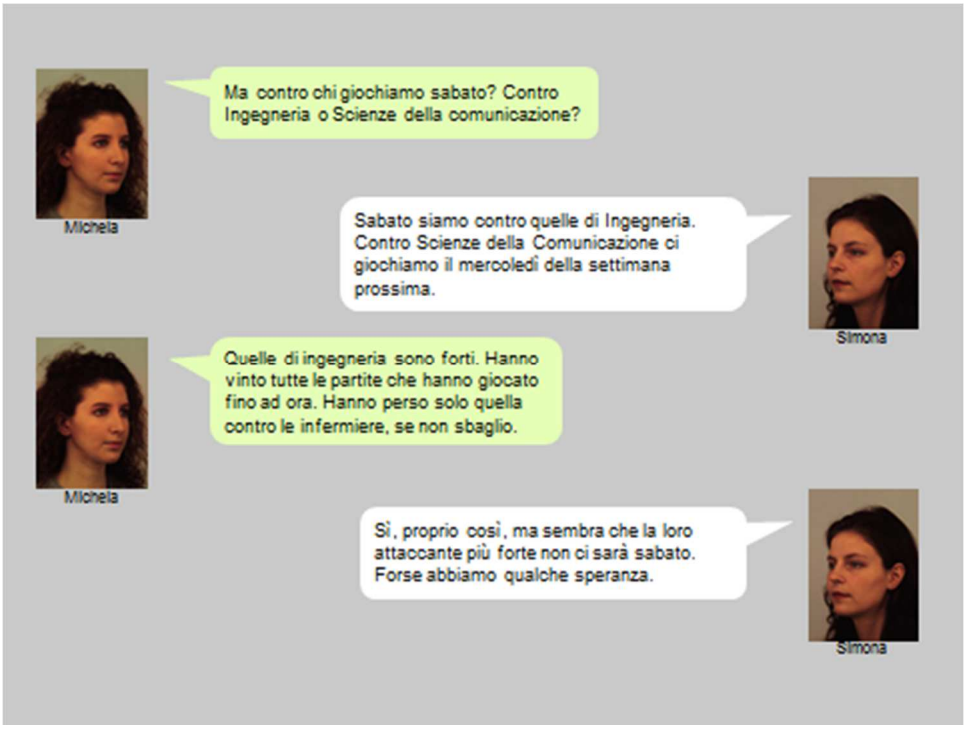
Same-level social comparison scenario – Female version

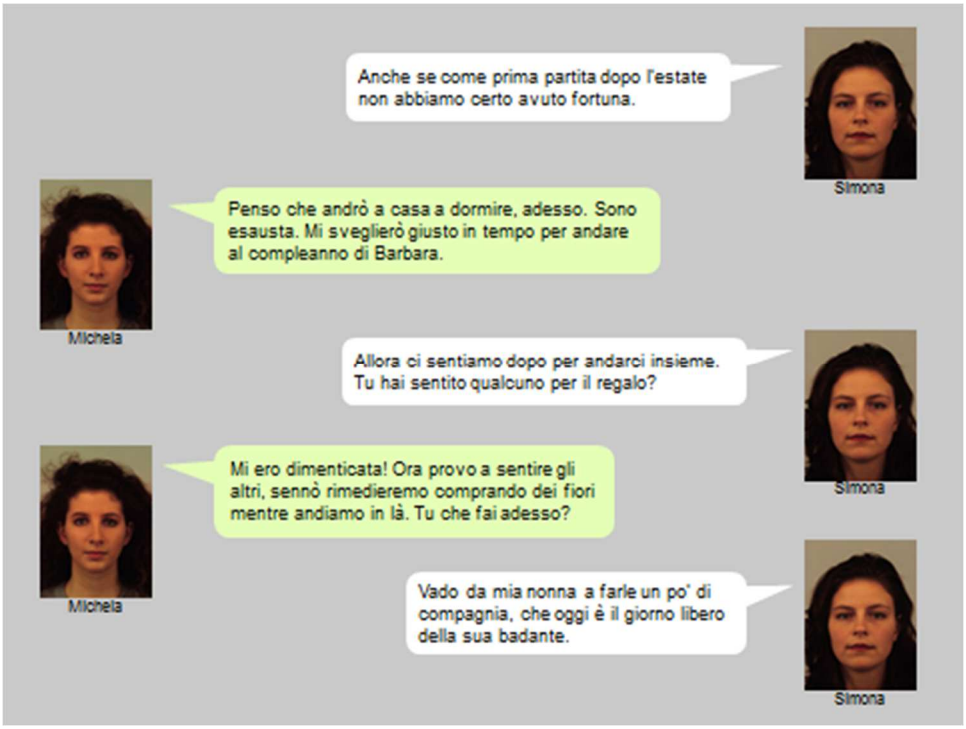


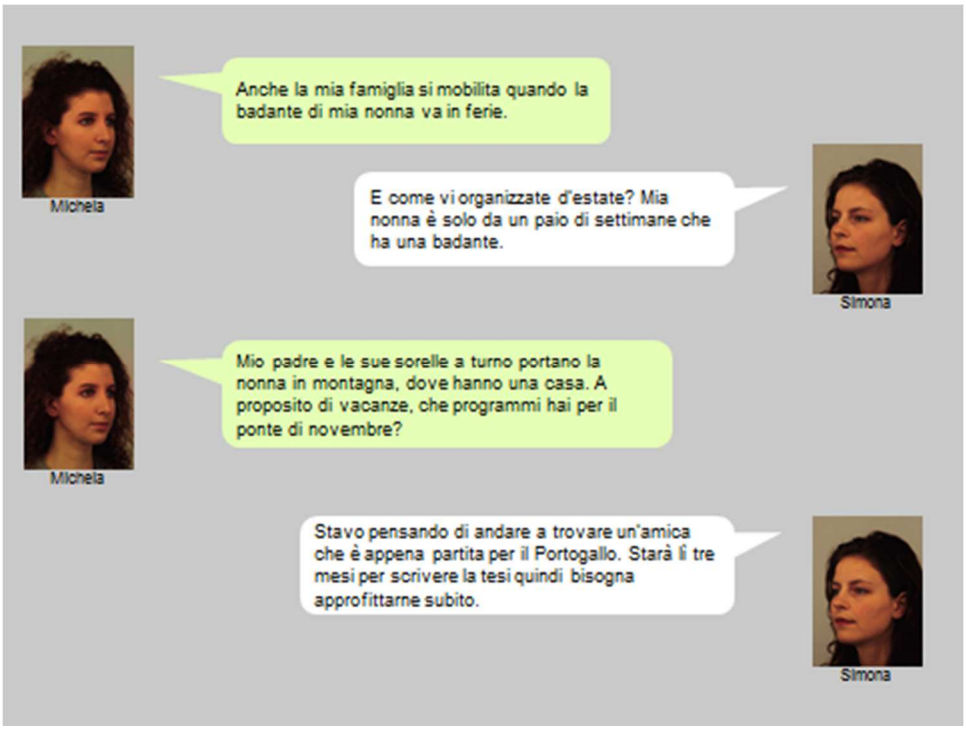


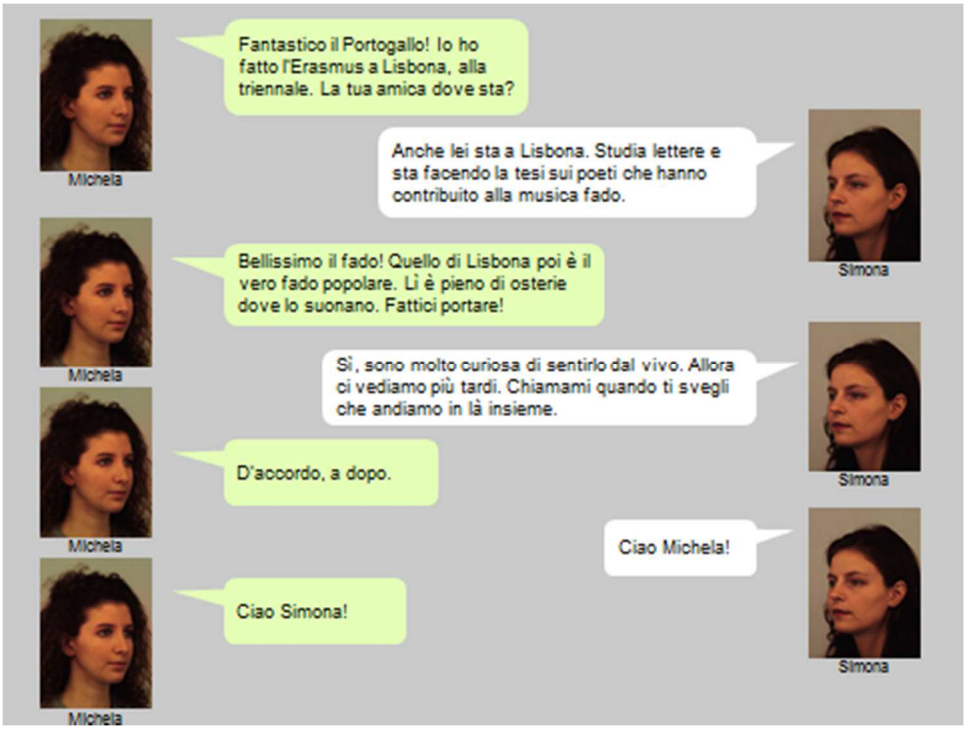

Pensa che non ho nemmeno visto l'ultimo film di Bernardi.
Simona
Neanche io sono ancora andata a vederlo. Anzi, adesso che ci penso è da una vita che non vado al cinema.
Michela
Vabbè, in fondo è ancora estate, e d'estate si sa che non si va al cinema. Le attività da svolgere sono altre.
Simona
Sì è vero. Adesso però ci tornerei volentieri, al cinema. Soprattutto perché dicono tutti che quel film è un vero capolavoro.
Michela
Sì, ho sentito. Infatti pensavo di vederlo questo fine settimana.
Simona


Io dovrò rimandare. Questo weekend ho venerdì lo spettacolo di un'amica e sabato il concerto del gruppo di Francesca.
Michela
È già questo sabato? Grande! Non vedo l'ora di sentirli! Ma suonano al "Binario 01" o al "Sotterraneo all'aperto"?
Simona
Al "Binario 01". Il "Sotterraneo all'aperto" è troppo piccolo e può entrare solo chi ha la tessera.
Michela
Io per la posizione preferisco nettamente il "Binario 01". Sabato pomeriggio però noi abbiamo il torneo di pallavolo, ti ricordi, vero?
Simona
Si sì, alla partita ci sono.
Michela


Ma contro chi giochiamo sabato? Contro Ingegneria o Scienze della comunicazione?
Michela
Sabato siamo contro quelle di Ingegneria. Contro Scienze della Comunicazione ci giochiamo il mercoledì della settimana prossima.
Simona
Quelle di ingegneria sono forti. Hanno vinto tutte le partite che hanno giocato fino ad ora. Hanno perso solo quella contro le infermiere, se non sbaglio.
Michela
Sì, proprio così, ma sembra che la loro attaccante più forte non ci sarà sabato. Forse abbiamo qualche speranza.
Simona


Anche se come prima partita dopo l'estate non abbiamo certo avuto fortuna.
Simona
Penso che andrò a casa a dormire, adesso. Sono esausta. Mi sveglierò giusto in tempo per andare al compleanno di Barbara.
Michela
Allora ci sentiamo dopo per andarci insieme. Tu hai sentito qualcuno per il regalo?
Simona
Mi ero dimenticata! Ora provo a sentire gli altri, sennò rimedieremo comprando dei fiori mentre andiamo in là. Tu che fai adesso?
Michela
Vado da mia nonna a farle un po' di compagnia, che oggi è il giorno libero della sua badante.
Simona


Michela
Anche la mia famiglia si mobilita quando la badante di mia nonna va in ferie.
E come vi organizzate d'estate? Mia nonna è solo da un paio di settimane che ha una badante.
Simona
Michela
Mio padre e le sue sorelle a turno portano la nonna in montagna, dove hanno una casa. A proposito di vacanze, che programmi hai per il ponte di novembre?
Stavo pensando di andare a trovare un'amica che è appena partita per il Portogallo. Starà lì tre mesi per scrivere la tesi quindi bisogna approfittarne subito.
Simona


Michela
Fantastico il Portogallo! Io ho fatto l'Erasmus a Lisbona, alla triennale. La tua amica dove sta?
Anche lei sta a Lisbona. Studia lettere e sta facendo la tesi sui poeti che hanno contribuito alla musica fado.
Simona
Michela
Bellissimo il fado! Quello di Lisbona poi è il vero fado popolare. Lì è pieno di osterie dove lo suonano. Fattici portare!
Michela
Sì, sono molto curiosa di sentirlo dal vivo. Allora ci vediamo più tardi. Chiamami quando ti svegli che andiamo in là insieme.
Simona
Michela
D'accordo, a dopo.
Ciao Michela!
Simona
Michela
Ciao Simona!

APPENDIX E

EFA on EPQ-R-N items– PAF (Promax rotation)

Item	F1	F2
EPQ-R-N 1	.54	.15
EPQ-R-N 2	.57	.02
EPQ-R-N 3	.14	.54
EPQ-R-N 4	.61	-.03
EPQ-R-N 5	.48	.17
EPQ-R-N 6	-.16	.96
EPQ-R-N 7	.47	.09
EPQ-R-N 8	.05	.76
EPQ-R-N 9	.61	-.14
EPQ-R-N 10	.04	.63
EPQ-R-N 11	.54	.03
EPQ-R-N 12	.54	-.02
Explained variance	32.3%	7.7%

EFA on RSES-MOD items– PAF (Promax rotation)

Item	F1	F2
RSES-MOD 1	.79	-.04
RSES-MOD 2	.87	-.09
RSES-MOD 3	.68	-.09
RSES-MOD 4	.55	-.01
RSES-MOD 5 (reversed)	.21	.40
RSES-MOD 6 (reversed)	-.08	.81
RSES-MOD 7 (reversed)	-.02	.67
RSES-MOD 8 (reversed)	-.04	.71
RSES-MOD 9 (reversed)	.51	.28
RSES-MOD 10 (reversed)	.49	.67
Explained variance	34.9%	11.8%

EFA on 2WAYSS-R items– PAF (Promax rotation)

Item	F1	F2
2WAYSS-R 1	.80	-.02
2WAYSS-R 2	.97	-.10
2WAYSS-R 3	.96	-.04
2WAYSS-R 4	.93	.01
2WAYSS-R 5	.63	.25
2WAYSS-R 6	.60	.25
2WAYSS-R 7	.28	.46
2WAYSS-R 13	.01	.84
2WAYSS-R 14	.09	.74
2WAYSS-R 15	-.03	.74
2WAYSS-R 16	-.05	.70
Explained variance	58.6%	7.8%

EFA on the 8-item version of the MCSD-9 – PAF (Promax rotation)

Item	F1	F2
MCSDS-9 1	.31	.12
MCSDS-9 2 (reversed)	-.08	.57
MCSDS-9 3	.49	-.08
MCSDS-9 4 (reversed)	.01	.46
MCSDS-9 5	.38	.01
MCSDS-9 6	.53	-.02
MCSDS-9 8 (reversed)	.04	.35
MCSDS-9	.24	.23
Explained variance	14.4%	5.4%