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## Predictors of mobilizing online coping versus offline coping resources after negative life events<sup>☆</sup>

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### ABSTRACT

This exploratory study drew upon the social compensation/social enhancement hypotheses and weak tie network theory to predict what kind of people supplement offline coping resources with online coping resources more than others. Using a large, representative survey the authors found that low self-esteem, lonely, and socially isolated individuals add more online resources to their mix of preferred coping strategies than their counterparts. These groups benefit from the fact that online coping resources are not as strongly entangled with online social ties as are offline coping resources with offline ties, and from the fact that online coping resources can sometimes be mobilized without any social interactions. In contrast to offline coping, the researchers also found that men mobilize more online coping resources than women. The authors discuss the implications of these findings in terms of the social compensation hypothesis and online weak tie networks.

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## 1. Introduction

The advent of the Internet and social media provides individuals with numerous online resources (via online communities, social media, websites, etc.) which may serve an important function in terms of helping them gain access to additional sources of information and support as well as the ability to develop relationships with others in ways that may be different from or supplement offline support when coping with stressful life events (Damian & Van Ingen, 2014; Mikal, Rice, Abeyta, & DeVilbiss, 2013; Rains & Keating, 2011; Rossetto, Lannutti, & Strauman, 2015; Van Ingen, Utz, & Toepoel, 2015; Wendorf & Yang, 2015; Wright & Rains, 2013a).

Online coping can be defined as thoughts and behaviors facilitated by the Internet that help to manage stressful situations (cf. Folkman & Moskowitz, 2004). There are several indications that the Internet is of rising importance when it comes to dealing with

stressful situations (See Wright & Bell, 2003). Furthermore, scholars have suggested that some of the mechanisms of coping are different online, which implies that more research and theory development in this area is needed. Additionally, it appears that many individuals cope with stressful life events using *both* offline and online social networks (Vergeer & Pelzer, 2009). In the current exploratory study, we attempted to gain a better understanding of factors that predict online versus offline coping.

In addition, previous research that has focused on differences between online and offline coping has tended to examine coping behaviors within specific contexts, such as online support groups or specific Facebook and Twitter groups (See Barak, Boniel-Nissim, & Suler, 2008; Wright & Rains, 2013b). Moreover, these studies have explored a somewhat limited range of coping strategies within these contexts, such as informational or emotional support-seeking. In the current study, the researchers took an exploratory approach to examining how people cope with stressful life events by investigating several dimensions of coping within both online and offline domains. This simultaneous assessment of both online and offline mobilization of resources supporting different coping strategies enabled us to analyze the relative importance of online (versus offline) coping, something that few previous studies have explored. Furthermore, previous studies have tended to focus on specialized populations, such as online communities targeting

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specific health concerns for student populations. In the current study, the researchers were interested in exploring how individuals engage in online and offline coping strategies following stressful life events among members of a more general population.

Although other theoretical frameworks may also explain this phenomenon, the current study drew upon the social compensation/social enhancement hypotheses (Peter, Valkenburg, & Schouten, 2005; 2006; Valkenburg & Peter, 2007b; Zywicki & Danowski, 2008) and weak tie network theory (Granovetter, 1973; 1983) as a starting point to explore online coping. Toward that end, it examines predictors of how individuals from a general population (a randomly selected sample of individuals from the Netherlands) mobilize a broad range of online versus offline coping resources following stressful life events. These include mental disengagement, active coping, seeking social support, and other psychological responses people use to cope with stressful situations. Specifically, the study examines the influence of extraversion, self-esteem, loneliness, social isolation and gender on online and offline coping resource mobilization choices. Although it is unlikely that individuals who are socially disadvantaged will establish the largest online networks and spend most time socializing online, it is likely that they will draw a relatively large share of their coping resources from the Internet. In the next section, we argue that the main reason for this is that online coping resources are less entangled with online social interactions than are offline coping resources with offline social interactions.

## 2. Review of literature

### 2.1. Online and offline coping strategies

The Internet provides a wealth of information about almost every imaginable topic, increased opportunities for connection with others, and access to information related to specific problems or issues (Wright & Bell, 2003). One advantage of using online networks over offline social networks for coping with a stressful life event is that online networks provide access to a larger number of weak ties, many of whom may offer the specific type of support individuals are seeking to help them cope with their situation effectively. This support from weak ties can help make up for deficiencies in terms of support in face-to-face social networks. Moreover, individuals who tend to cope with problems in a certain way, such as seeking additional information or practicing new skills, are more likely to gain access online to individuals who will provide them with the type of support that facilitates their preferred coping style (Wright & Rains, 2013b). Therefore, we contend that online versus offline coping choices are to a large extent trait-like in nature (cf. Seckin, 2013).

### 2.2. Social compensation/social enhancement hypotheses, close and weak-tie support, and (online) coping

The ability to successfully mobilize coping resources, such as information and social support, following a stressful life event has been linked to reductions in mental and physical health symptoms, reduced depression and stress, and increased well-being (Lett et al., 2007). Although only a few studies have applied the *social compensation hypothesis* (Peter et al., 2005; 2006; Valkenburg & Peter, 2007b) to how people mobilize online resources, there are several findings that suggest that this framework may be helpful for understanding how individuals with high levels of social anxiety may mobilize more coping resources if they use computers to replace or supplement their social networks to a greater extent than their peers who do not use computers to replace/supplement their social networks. Studies have found that socially anxious

individuals report they compensate for their social anxiety by engaging in online communication (Baker & Oswald, 2010; Peter, Valkenburg, & Schouten, 2006; Valkenburg & Peter, 2007b). Social interactions that occur online primarily consist of on-screen text (except when individuals use webcams, Skype, and similar applications), and therefore a large amount of visual information typical of traditional face-to-face interactions is concealed during online communication. This has been found to increase relational development in cases where the lack of visual information (especially disconfirming nonverbal cues) leads individuals to develop idealized perceptions of online relational partners (Tidwell & Walther, 2002). Moreover, this can lead to a more comfortable social situation for socially anxious individuals who are coping with a stressful life event in comparison to traditional face-to-face interactions, supporting the case for social compensation.

In contrast to the social compensation hypothesis, the *social enhancement*, or the *rich-get-richer*, hypothesis posits that individuals who already are comfortable in social situations may use the computer, either in person or online, to seek out additional opportunities to socialize with others (Peter et al., 2005; Zywicki & Danowski, 2008). In other words, online communication with others tends to increase the overall number of social interactions a person has rather than replacing more traditional means of interactions.

Online social networks tend to consist of weaker, more heterogeneous network members than are typical of offline, close-tie social networks, and this provides individuals who are coping with stressful events greater opportunities for social comparison, increased sources of social support, and a greater diversity in terms of life experiences and knowledge than what is typically available in offline, face-to-face social networks (Wright & Miller, 2010). These characteristics of online social networks may influence both the social compensation hypothesis and the social enhancement hypothesis depending on individual needs.

In some cases online networks provide opportunities to communicate with others more easily/comfortably. For example, individuals may be reluctant to disclose certain problems or issues with members of their traditional face-to-face social networks in cases where they feel they will be judged by others due to the nature of the problem (e.g. substance abuse, having an affair, divorce, etc.), or if they are coping with a problem that is difficult or embarrassing to talk about (Green-Hamann & Sherblom, 2014; Wright & Miller, 2010).

In an attempt to explain this phenomenon, Granovetter (1973; 1983) proposed that when individuals feel that their close interpersonal ties are unable to provide adequate or satisfying social support, they will be more likely to turn to weak ties for social support. Weak ties are often able to provide greater heterogeneity of information regarding a stressful situation, are less likely to judge an individual due to his or her problems, and make it less risky for people to disclose sensitive information (Wright & Miller, 2010).

In the age of the Internet, the multitude of potential weak-tie relationships online via social media has grown exponentially. Several researchers have found research on weak ties to be applicable to explaining why some individuals prefer to obtain social support online instead of (or in addition to) using traditional offline networks (Green-Hamann & Sherblom, 2014; Wright & Rains, 2013b; Wright & Miller, 2010). When members of traditional offline social networks have limited knowledge about a stressful situation, there is evidence that individuals often turn to online sources of information and social support (Wright & Miller, 2010), despite the fact that they may feel less close relationally to the people with whom they interact online. Coping resources accessed via online networks may be particularly valuable when offline

sources of support are unable or unwilling to help a person with his or her problem. Rains and Keating (2011), for example, found that the health bloggers in their sample who received the least social support from their friends and family most benefited from the support provided by blog readers online.

Social network websites, such as Facebook and Twitter, also appear to replace or extend traditional offline support networks in terms of providing greater access to the increased social capital available in a larger, easier to maintain, network of individuals who are often geographically separated (Ellison, Steinfield, & Lampe, 2007; Van Ingen et al., 2015). These online communities can help individuals in times of stress and transition access new, often more appropriate, networks of support, such as others facing the same or similar transitions and stressors. Of course, online communities and social network sites can also consist of stronger ties (either from a person's offline social network or an initial online relationship that has developed into a strong tie), and people may feel uncomfortable interacting with these strong ties depending on the nature of the problem. However, the majority of the people within such communities tend to be weaker ties rather than strong ties, and these weak ties are more easily accessible via the Internet than would be possible in the face-to-face world.

In some situations, it is even possible to mobilize online coping resources without online interactions or communication. Mo and Coulson (2010) found that – although they were less effective than users who interacted – those who only read messages in online support groups (known as “lurkers”) still found support and information that empowered them in the coping process. In most online support groups once messages are posted – which will often be meant as bilateral support to a person requesting help through the forum – they become a collective good among forum users: everyone can read them and use the information to their advantage. For the socially anxious in need of coping resources this provides opportunities that are virtually absent in the offline world.

In short, some individuals prefer drawing upon online resources and relationships when coping with problems if the characteristics of online support are seen as advantageous compared to what is available in offline social networks or if including online resources/relationships is perceived as better than solely relying on offline resources/relationships. To socially disadvantaged individuals the characteristics of online support look more advantageous, because of the fact that there is – when compared to offline social interactions – less need for strong tie relationships in order to mobilize coping resources. Although previous research has not directly this idea, there is indirect empirical evidence that seems to support it. First, online relationships are often reported to be weaker than offline relationships. For instance, Chan and Cheng (2004) found that offline ties were characterized by more interdependence, depth, and commitment than their online counterparts. Second, several studies have shown that online support often comes from weak ties (Walther & Boyd, 2002; Wright & Rains, 2013a,b). And third, studies have shown that in some cases it is possible to mobilize online coping resources without online communication or interaction (Mo & Coulson, 2010).

In the current study, the researchers attempted to explore these aspects of the social compensation/social enhancement hypotheses as well as weak tie network theory to the mobilization of online resources and by examining the links between multiple participant characteristics and coping resources mobilized from both online and offline social networks.

### 2.3. Extraversion and online/offline coping preferences

Previous research suggests that extraversion is related to several aspects of social relationships. Asendorpf and Wilpers (1998) found

that extraversion was positively associated with the number of peers in students' social network as well as the number of daily social interactions. In addition, individuals with high levels of extraversion have been found to report higher control and higher levels of intimacy in their interactions (Barrett & Pietromonaco, 1997). Extraversion also plays a positive role in coping processes. In a review of the literature on this topic, Carver and Connor-Smith (2010) conclude that “Extraversion predicted more problem solving, use of social support, and cognitive restructuring (one kind of accommodation)” (p.690).

There are good reasons to expect that extraversion is less of an advantage online. Not when it comes the number of online friends (Peter et al., 2005), nor the extent of Facebook interaction (Gosling, Augustine, Vazire, Holtzman, & Gaddis, 2011), but when it comes to the quality of online relationships as well as the extent to which the Internet is used to mobilize support (Baker & Oswald, 2010; Valkenburg & Peter, 2007b; Van Zalk, Branje, Denissen, Van Aken, & Meeus, 2011). In addition, researchers found that introverts scored higher on social compensation motives of Internet usage (Peter et al., 2005). Supportive of the social compensation argument, Van Zalk et al. (2011) found that individuals with low extraversion were the only group that showed longitudinal effects of chatting with “online-exclusive peers” on (lower) depression and (higher) self-esteem. Finally, in a study of shyness (sometimes considered a sub dimension of extraversion, see Asendorpf & Wilpers, 1998) it was found that – contrary to those with low levels of shyness – highly shy individuals showed a positive association between time spent on Facebook and importance of online peers, closeness to online peers, and perceived social support (Baker & Oswald, 2010). Hence we expect that:

**H1.** The effect of extraversion on mobilization of online coping resources is smaller than on mobilization of offline coping resources.

### 2.4. Self-esteem and online/offline coping preferences

Previous research suggests that self-esteem affects social relations and coping processes. Low self-esteem can be a constraint in building a high-quality network of relationships (De Jong-Gierveld, 1998), and it was found to be associated with anti-social behavior, like aggression and hostility (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Phrased more positively, those with high levels of self-esteem are less reluctant to engage in social interactions, and are generally better at maintaining positive, lasting relationships. Those with high self-esteem also cope with their stress more actively and show greater positive reinterpretation and growth, whereas those with low self-esteem are more likely to become preoccupied with distress emotions (Carver, 1997). Aspinwall and Taylor (1992) found that self-esteem caused less avoidance coping and greater seeking of social support (and subsequently, those with high self-esteem also received more social support).

Studies have found that online interaction can lead to increased coping resources among individuals who experience low self-esteem in offline contexts (Shaw & Gant, 2002; Steinfield, Ellison, & Lampe, 2008). These studies suggest that individuals with low self-esteem are drawn to online communication and relationships more than they are to offline communication and relationships. Hence, we formulate the following hypothesis:

**H2.** The effect of self-esteem on mobilization of online coping resources is smaller than on mobilization of offline coping resources.

## 2.5. Loneliness, social isolation, and online/offline coping preferences

Loneliness is a ubiquitous psychosocial problem that is often related to inadequate social support (Hudson, Elek, & Campbell-Grossman, 2000). Most individuals have an innate desire for connection with others, but when they feel disconnected from their social networks, this often results in loneliness. Loneliness is distinct from social isolation (De Jong-Gierveld, 1998); the former is an experienced deficiency in the quality of one's network, the latter is actual disconnectedness. Both the size and quality of one's social network are important determinants of the amount of resources individuals can access (De Jong-Gierveld, 1998).

Studies suggest that people who are lonely or disconnected may use media, including the Internet, for distraction, entertainment, or to escape daily life (Vorderer, Klimmt, & Ritterfeld, 2004). Some lonely individuals are more proactive in their Internet use and try to battle loneliness by searching for new people or socializing with others online (Saunders & Chester, 2008).

Many individuals experience loneliness due to stigmatized health conditions or other problems (especially highly visible issues, such as physical or mental disabilities) that are viewed negatively by society. In such cases, people may perceive that other people in their offline social networks will evaluate them negatively (Barak et al., 2008; Wright & Rains, 2013b). As a result, they may voluntarily withdraw from interacting with members of offline networks, which often leads to an increased sense of loneliness. In attempt to compensate for these issues, many individuals turn to social media to reduce feelings of loneliness and social isolation. However, other lonely individuals may cope with social isolation in other ways, by seeking sources of distraction both online and offline, such as reading books, watching television, or passing time by searching the Internet for websites that appeal to their specific interests (Vergeer & Pelzer, 2009).

Since the mechanisms connecting social isolation and loneliness to online versus offline coping choices are different (actual lack of certain resources in the offline network versus experienced problems when connecting to the offline network), we formulate two hypotheses:

**H3.** The effect of loneliness on mobilization of online coping resources is less negative than on mobilization of offline coping resources.

**H4.** The effect of being socially isolated on mobilization of online coping resources is less negative than on mobilization of offline coping resources.

## 2.6. Gender and online/offline coping preferences

Previous research has found that men and women have different offline social networks. Women generally have more strong ties in their network (Moore, 1990), they spent more time socializing informally (maintaining their strong ties), and mobilize more emotional support from their network (Van Emmerik, 2006). Men have been found to be more reluctant to seek lay support for mental health issues such as feelings of distress and depression (Oliver, Pearson, Coe, & Gunnell, 2005). Women typically have more strong ties they can turn to for social support when faced with problems, while men tend to rely exclusively on their partner as their sole source of emotional support (Harrison, Maguire, & Pitceathly, 2005). Vergeer and Pelzer (2009) found that women in their study possessed a larger offline social network than men and used it more intensively than men.

There is some evidence that suggests that women also mobilize

more online support. In several online support group studies, women significantly outnumber men in terms of participating in online support groups (Mo, Malik, & Coulson, 2009; Wright & Bell, 2003). In terms of coping differences, several researchers have found that women who use online support groups prefer receiving emotional support while men are more likely to prefer informational support (Mo et al., 2009). Nonetheless, if our assertion about the loose connection between online social interactions and online coping resources is correct, it follows that:

**H5.** The difference between men and women in mobilization of online coping resources is smaller than the difference in mobilization of offline coping resources.

## 2.7. Summary

We assert that the mobilization of coping resources online is less intertwined with online social interactions and relationships than the mobilization of offline coping resources is with offline social interactions and relationships. The strength of the ties that provide support online is generally weaker than the strength of the offline ties that provide support and in some cases the Internet offers opportunities to mobilize coping resources without social interactions. The common denominator of the explanatory variables we study is that they signal a reduced ability to maintain strong tie networks. On the Internet those who suffer from these reduced abilities are less disadvantaged or not disadvantaged at all, and therefore the share of online coping resources they mobilize when confronted with a negative life event is likely larger than is the case among their counterparts.

## 3. Data & methods

The Longitudinal Internet Studies for the Social sciences (LISS) is a panel study that is representative of the (16+) population of the Netherlands. Refreshment samples are drawn to maintain the representativeness of the panel. Questionnaires are answered online, and households have been equipped with a computer and/or Internet access when necessary. Monthly surveys are conducted lasting 15–30 min.

In January 2014 a questionnaire about online coping was administered to the panel, with a response rate of 83%. In the questionnaire the coping items were preceded by questions about five types of (negative) life events in the past three years (see below). Subsequently, respondents who suffered from such an event or problem were asked how they coped with it. In other words, the questionnaire is about *actual* rather than *hypothetical* coping. The share of the sample that mentioned at least one event was 44%, which boils down to a sample size of 2544 respondents. To assess potential differences between those who registered an event and those who did not we performed a logistic regression with the selection variable (0 = no; 1 = yes) as outcome, and the following independent variables: age, time spent using a computer (hours/week), income, education, gender, and partner status. The only variable that tested significant was age, but its effect was very small (odds ratio = 1.007). The (pseudo-) explained variance was <1%.

### 3.1. Online and offline coping

Our measures of *online coping* are an adaptation of Carver's well-known COPE inventory (Carver, 1997; Carver, Scheier, & Weintraub, 1989) to the context of the Internet. Seven dimensions of this inventory have meaning on the Internet, the other ones (e.g. substance use or denial) were left out. Since we had to deal with



restricted questionnaire space, we used the brief version of the COPE inventory (Carver, 1997), which includes two items per dimension. The full set of items is listed in the Appendix (see \*author citation\* for more information about the development of the scale). The items had four answer categories: (0) This doesn't apply to me at all, (1) This applies to me a little bit, (2) This applies to me a medium amount, (3) This applies to me a lot. Table 1 summarizes the correlations between the most important variables in our study.

The *offline coping* items were retrieved from Carver's brief COPE inventory (Carver, 1997). In order to avoid confusion, respondents were clearly instructed that the items did not include online activities. The offline coping items were part of a (random) split-run in the questionnaire, answered by half the sample.

### 3.2. Independent variables

Most of our independent variables are measured on a yearly basis in the panel. In our models we used the measures from before the period of the negative life events (2010). Missing values were substituted by values from adjacent waves.

*Extraversion* is one of the “big-five” personality traits (Goldberg, 1992) and was measured by 10 items. The resulting scale was internally consistent (Cronbach's alpha = .87).

*Self-esteem* was measured by Rosenberg (1965) self-esteem scale (10 items), which includes items like “I feel that I have a number of good qualities”. The scale had excellent internal consistency (Cronbach's alpha = .89).

*Loneliness* (Cronbach's alpha = .81) was measured by the 6-item version of the De Jong Gierveld loneliness scale (De Jong-Gierveld & Van Tilburg 2006), which includes items like “I miss having people around me” (no; more or less; yes).

*Socially isolated* is a dummy variable that takes the value of 1 when respondent mentioned having no one “to discuss important things with”.

Finally, the dummy variable *women* captures gender differences in our analyses (46% men; 54% women).

### 3.3. Control variables

The *age* of our respondents ranged from 16 to 93 years. Many older individuals (particularly those above the age of 80) were likely socialized to cope with stressful situations and seek social support prior to the advent of the Internet, which increases the chance that they will prefer to cope with their problems by seeking information and support in traditional, offline, face-to-face social networks (Wagner, Hassanein, & Head, 2010). In addition, age is related to some of our independent variables as well.

*Type of event* is a categorical variable which includes (1) physical health problems, (2) mental health problems, (3) involuntary job loss, (4) divorce or widowhood, and (5) other, similar events.

*Severity of event* was measured by the question “To what extent

did this event change your daily activities?” (five categories).

*Education* was measured using six categories, ranging from primary education to university degree.

### 3.4. Analytical strategy

We use structural equation models to test our hypotheses. We employ maximum likelihood with missing values (MLMV; Stata 13) to deal with missing data, in order to ensure that as much information as possible is used in our analyses.

To test our hypotheses we compare the standardized effects of our explanatory variables on online coping versus offline coping. Fig. 1 depicts our analytical setup. We estimate a latent online and offline coping factor (both 14 items). The measurement part of the model showed reasonable model fit (RMSEA .067; CFI .872). A model with separate coping dimensions demonstrates better model fit, but our theoretical interest in the current paper is in explaining general differences in on- versus offline coping. We allow errors between indicators of the same dimension and between the on- and offline version of a certain item to correlate. The errors of the latent on- and offline dimensions are allowed to correlate as well. To test our hypotheses we analyze whether the difference between  $\beta_1$  and  $\beta_2$  (Fig. 1) is significantly different from zero.

## 4. Results

Physical health problems were the most common negative life events in our data (42%), followed by job loss (20%), and the end of a (romantic) relationship (17%). Events that are reported less often were: mental health problems (9%) and “other events” (11%).

It is relatively common to mobilize at least some type of online resource after experiencing a negative life event: 61% indicated to have used the Internet for some form of coping. Offline coping was more popular, which should come as no surprise: 97% indicated to have mobilized at least some type of offline coping resource.

The majority of our respondents who registered a negative life event combined online and offline resources (61%). Mobilizing online resources exclusively was very rare (1%), as was mobilizing no coping resources (3%). The remaining 36% mobilized offline resources exclusively. Among those who combined online and offline resources, the latter had greater weight in most cases: only 3% mobilized more online than offline coping resources; 3% mobilized an equal amount; and 94% mobilized more offline than online coping resources. These explorative analyses show that a preference for online resources should be interpreted in a relatively sense: compared to other people some put more online resources in the mix. This does not mean they mobilize more online than offline resources in an absolute sense. Hence, if we refer to “online versus offline” this should be interpreted as a gradual rather than a categorical distinction.

Table 2 shows the main findings of our study. The effects of our

**Table 1**  
Bivariate correlations.

	Online coping	Offline coping	Extraversion	Self-esteem	Loneliness	Social isolation	Gender
Online coping	1						
Offline coping	.36	1					
Extraversion	(.03)	.16	1				
Self-esteem	-.08	.08	.30	1			
Loneliness	.11	-.08	-.23	-.36	1		
Social isolation	(-.04)	-.15	-.06	(-.02)	.06	1	
Gender	-.04	.17	(.02)	-.12	(.01)	-.11	1

Note. Correlations within parentheses are non-significant; the other correlations are significant at the  $p < .05$  level (two-tailed).

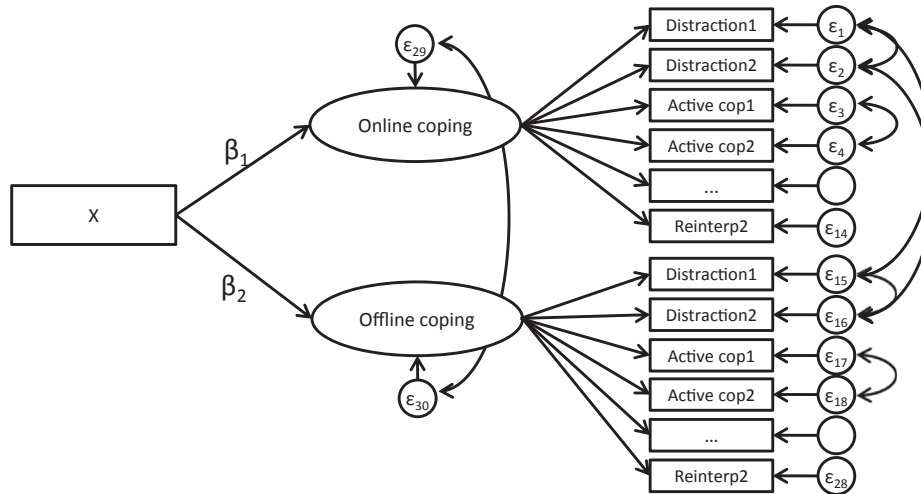


Fig. 1. Model of online versus offline coping.

Table 2  
Standardized path coefficients (standard errors in parentheses) and difference tests.

Exogenous variable	Online coping		Offline coping		Difference $\chi^2(1) = \dots$
Extraversion	.058*	(.026)	.103**	(.033)	1.52
Self-esteem	-.039	(.027)	.071*	(.035)	8.18**
Loneliness	.095**	(.028)	-.056	(.037)	13.26**
Social isolation	-.040	(.024)	-.115**	(.031)	4.64*
Women	-.084**	(.021)	.176**	(.028)	69.32**
<b>Control variables</b>					
Age	-.168**	(.023)	.031	(.034)	24.67**
Education	.004	(.024)	.097**	(.031)	7.30**
Severity of event	.104**	(.021)	.185**	(.028)	6.61*
Event: mental health <sup>a</sup>	.020	(.022)	.175**	(.030)	21.00**
Event: job loss <sup>a</sup>	.080**	(.024)	.044	(.032)	1.00
Event: partner loss <sup>a</sup>	.058*	(.024)	.170**	(.032)	9.64**
Event: other <sup>a</sup>	.055*	(.022)	.104**	(.030)	2.07

\*p < .05; \*\*p < .01. (two-sided test). N = 2535.

<sup>a</sup> Reference = physical health event.

exogenous variables were estimated simultaneously, in one model. The effect of extraversion on online coping ( $\beta = .058$ ) was positive and significant, as was the effect of extraversion on offline coping ( $\beta = .103$ ). The final column of Table 2 contains a test of the difference between the two standardized path coefficients. Although the effect of extraversion on online coping was smaller in the sample, the difference was not significantly different from zero. This means that hypothesis 1 is not supported. In order to make sure that this finding was not caused by potential mediation effects by loneliness and social isolation, we also estimated a model without those variables (not shown). This led to a similar conclusion, although the difference between the two coefficients was close to being significant ( $\chi^2(1) = 3.51$ ;  $p = .061$ ).

The effect of self-esteem on online coping (Table 2) was non-significant and the effect on offline coping was positive. The difference between the online versus offline effects was significant. In other words, those with low self-esteem are disadvantaged offline, but not online, which is in line with hypothesis 2.

The difference between the effects of loneliness on mobilization of online versus offline coping resources was clearly significant. In contrast to the previous variables, the sign of the effect is reversed. Not only were those with high levels of loneliness less disadvantaged on the Internet, they are actually more advantaged: loneliness was associated with mobilizing more online coping resources. Strictly speaking this supports hypothesis 3 (although the reversal

of the sign of the effect was unanticipated).

Social isolation – in the sense of having no one to talk to about important matters – had no significant effect (at the  $p < .05$  level) on online coping. However, it did have a significant, negative effect on offline coping and the difference between the two coefficients was significant. This supports hypothesis 4.

In correspondence with previous studies, we found women to mobilize more offline coping resources after a negative life event. As predicted by hypothesis 5, the gender difference was smaller online. Somewhat surprisingly, we found the effect to be reversed online: men mobilized more online coping resources than women.

The bottom block of Table 2 shows the effects of our control variables, and several of them had a different effect on online versus offline coping. Younger individuals mobilized more online coping resources whereas no age differences were found in the amount of mobilized offline coping resources. The higher educated mobilized more offline coping resources but this was not true for online coping. Finally, the more severe the event the more coping resources mobilized (both on- and offline), but the effect on offline coping was stronger.

The interpretation of the event effects is less straightforward, since the reference category of a physical health event is arbitrary. However, our results suggest that in the case of job loss, partner loss, and “other” negative life events respondents mobilized more online coping resources than after physical and mental health

events. After mental health events and partner loss they mobilized more *offline* coping resources compared to the other events (especially physical health events and job loss).

Finally, as a check of the robustness of our results, we ran our models on three separate dimensions of coping (see Appendix A2). *Mental disengagement* is a strategy in which individuals try to forget about their problems and find distraction; *problem-focused coping* is a strategy in which individuals try to solve or reduce their problem; and *socioemotional coping* refers to attempts - especially through interacting with others - to deal with the psychological consequences of the negative life event (see Van Ingen, et al. (2015) for more information about these strategies and models). Although these different dimensions were not the focus of the current paper, our analyses on the aggregate level might conceal important underlying differences across different dimensions. The results (Table A2) show that the compensation effects are strongest for socioemotional coping strategies, followed by problem-focused coping strategies. In the case of mental disengagement there were few compensation effects (only for gender). These findings are in line with our reasoning. Social skills and abilities are less needed when mobilizing disengagement resources and most needed when mobilizing socioemotional coping resources.

## 5. Discussion & conclusions

The purpose of the current study was to examine predictors of how individuals from a general population mobilize a broad range of online versus offline coping resources following stressful life events. With these analyses, we have tried to extend work on the social compensation hypothesis and weak tie network theory, by drawing upon these frameworks to help explain the mobilization of resources rather than to social interactions or social networks. Furthermore, using a random sample from the Netherlands general population likely provided a higher degree of external validity than was realized with samples in previous work that were based on limited populations such as adolescents (Valkenburg & Peter, 2007a; 2007b) or online support group members (Wright & Rains, 2013b).

Our data show that the vast majority of individuals do not mobilize online resources as an alternative for offline resources but rather to supplement their offline resources. For example, some individuals (like those with low self-esteem, the lonely and the socially isolated) appear to utilize online coping resources to a greater extent (to supplement offline resources) than people who are not coping with these issues. The findings are consistent with the social compensation hypothesis if that idea is framed in terms of resources rather than interactions or networks. Individuals who are socially disadvantaged can mobilize online resources from a limited number of online social interactions (even if they are weak ties) or mobilize online resources without any online social interactions. As a result, these individuals are less disadvantaged online.

Our findings have implications for the debate about the social consequences of online communication, or more specifically the discussion on the validity of the social enhancement hypothesis versus the social compensation hypotheses (Valkenburg & Peter, 2007a). The empirical evidence so far has been somewhat ambiguous but in favor of the former (Vergeer & Pelzer, 2009). However, our findings clearly support the latter. One important distinction here might be the difference between *online interactions* and *mobilized online resources*. We have shown that those who are less well-connected offline are less disadvantaged online or even compensate their disadvantage online. This does not mean that they should also be the ones who spend most time on social network sites, have the largest online social network etc.

The compensation seems to be about quality rather than quantity, and in this sense the rich-get-richer and social-compensation hypotheses do not contradict each other: some (disadvantaged) groups may mobilize more resources from fewer online contacts. Even though the less well-connected offline are likely to have fewer social connections online too, these contacts are considerably more valuable. This is in line with previous findings that show that socially anxious individuals show more self-disclosure online, contributing to relationship quality (Valkenburg & Peter, 2007a).

A few limitations of our research need to be discussed. First, our data stem from retrospective questions in a survey, going back three years. And as we know, the human memory is not perfect. In other words, it is unlikely that respondents were able to reconstruct what happened and how they coped with the situation perfectly. On the other hand, these questions are about major life events, which should be among the easiest things to remember. In a worst case scenario, some respondents' answers are biased by their more recent behavior. In that case, their answers reflect how they usually cope with problems rather than how they coped with the particular life event they reported. This is still highly relevant information and it should not be a threat to the validity of our conclusions. Second, our research cannot completely rule out reversed causality, i.e. the idea that successful mobilization of coping resources may reduce social isolation or enhance self-esteem. Our exogenous variables were measured before the events and the online coping occurred, but that is only true if respondents accurately recall when the event occurred. Nonetheless, we think our research design is an important improvement over studies that are purely cross-sectional.

The current findings have important implications for individuals who face psychological restrictions in their offline social lives. They imply that with the rise of the Internet, there appear to be many opportunities for these individuals to mobilize help when dealing with stressful events in ways that appear to level the playing field in terms of opportunities for coping. Although some individuals may initially desire to cope with problems in the offline world, they may gravitate toward the use of online coping strategies if they perceive that there are problems relying on members of their offline social networks to help them cope with problems. For example, Wright and Rains (2013a,b) found that people living with stigmatized health conditions who perceived that members of their offline social network did not possess useful information about their health problem, or if they felt judged by them (due to the social stigma attached to the problem), were more likely to prefer coping by using online networks. Future research would benefit by assessing whether individuals initially prefer to cope with problems offline versus online, the conditions that may lead them to choose one network over the other, and their level of satisfaction with the network they ultimately choose (i.e., offline versus online) to help them cope.

We believe our findings provide reason to pay more attention to the social compensation hypothesis. We have demonstrated theoretically that the social compensation hypothesis can be applied to the mobilization of resources, and showed that it is more predictive of variation in the utility rather than the volume of social interactions. Furthermore, we have shown that the social compensation mechanism potentially has more applications than previously assumed.

Given the current study findings that self-esteem, loneliness, social isolation, and gender affected online versus offline coping choices, future research would benefit from studying the effects of other personal characteristics on online/offline coping choices, such as shyness, social anxiety, and stigmatization.

## Appendix

**Table A1**  
Dimensions of coping, online and offline items

Dimension	Online version	Offline version <sup>a</sup>
Distraction	1. I turned to the Internet to take my mind off things 2. I did something online to think about it less, such as playing games or visiting websites	I turned to work or other activities to take my mind off things I did something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping
Active Coping	1. I used the Internet to do something about the situation 2. I used the Internet to take action to make the situation better	I concentrated my efforts on doing something about the situation I was in I took action to try to make the situation better
Planning	1. I consulted the Internet to come up with a strategy about what to do 2. With aid of the Internet I thought hard about what steps to take	I tried to come up with a strategy about what to do I thought hard about what steps to take
Emotional Support	1. I got emotional support from others through the Internet 2. I received comfort and understanding from someone through the Internet	I got emotional support from others I got comfort and understanding from someone
Instrumental Support	1. I asked people who had similar experiences on the Internet what they did <sup>b</sup> 2. I got help and advice from other people through the Internet	I tried to get advice or help from other people about what to do I got help and advice from other people
Venting of Emotions	1. I said things on the Internet to let my unpleasant feelings escape 2. I expressed my negative feelings on the Internet	I said things to let my unpleasant feelings escape I expressed my negative feelings
Positive Reinterpretation	1. With aid of the Internet I tried to see things in a different light, to make it seem more positive 2. With aid of the Internet I looked for something good in what happened	I tried to see it in a different light, to make it seem more positive I looked for something good in what happened

<sup>a</sup> Carver's brief COPE (Carver, 1997).

<sup>b</sup> See data & methods for an explanation of the difference in wording.

**Table A2**  
Standardized path coefficients (standard errors in parentheses) and difference tests for three dimensions of coping

Exogenous variable	Online coping	Offline coping	Difference $\chi^2(1) = \dots$
<b>Mental Disengagement</b>			
Extraversion	.013 (.028)	.100* (.046)	2.86
Self-esteem	-.034 (.029)	.049 (.048)	2.40
Loneliness	.156** (.030)	.065 (.053)	2.55
Social isolation	-.027 (.025)	-.118** (.043)	3.41
Women	-.054* (.024)	.131** (.038)	16.52**
<b>Problem-Focused Coping</b>			
Extraversion	.081** (.026)	.149** (.034)	2.82
Self-esteem	.020 (.026)	.109** (.036)	4.27*
Loneliness	.123** (.027)	.003 (.040)	7.04**
Social isolation	-.048* (.023)	-.122** (.032)	3.77
Women	-.063** (.021)	.122** (.029)	26.79**
<b>Socioemotional Coping</b>			
Extraversion	.070* (.026)	.109** (.033)	.93
Self-esteem	-.056* (.028)	.063 (.035)	7.76**
Loneliness	.098** (.028)	-.088* (.039)	16.74**
Social isolation	-.042 (.023)	-.141** (.031)	6.80**
Women	-.053* (.021)	.171** (.028)	41.41**

\* $p < .05$ ; \*\* $p < .01$ . (two-sided test).  $N = 2535$ . Note. Models are controlled for age, education, type of event, and severity of event.

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