



Investigating the negative-cognitive-triad-hypothesis of news choice in Germany and South Korea: does depression predict selective exposure to negative news?

Sebastian Scherr ^a, Florian Arendt ^b, Michael Prieler ^c, and Youngkee Ju ^c

^aDepartment of Communication, Texas A&M University, College Station, TX, USA; ^bDepartment of Communication, University of Vienna, Vienna, Austria; ^cDepartment of Communication, Hallym University, Chuncheon, South Korea

ABSTRACT

Research has constantly revealed that depressive symptoms usually include negative cognitions about the world, the future, and the self, termed the negative cognitive triad. More recently, research on the stress generation hypothesis found that depressed individuals self-select themselves into situations that resonate with their depressive symptoms. In the present study, we combined these two discoveries, applied them to everyday news selection, and questioned whether measures of depression explain news choices related to negative vs. positive news about the self, the world, and the future. We tested this idea in two independent selective exposure studies in Germany ($N = 395$) and South Korea ($N = 225$). Analyses indicated that explicit (not implicit) measures of depression were associated with news choice in favor of negative news in both countries. We discuss the implications of these findings for both selective exposure research and the understanding of depression.

Are we always aware of the reasons why we chose a particular news article? Probably not. In fact, news consumers, and that is virtually all of us, can select news items in both conscious and unconscious ways. Stated differently, we can make news choice decisions above or below our 'radar' of conscious awareness. Guided by this idea, recent research on selective exposure not only reflects upon more deliberate conscious strategies of news selection (Knobloch-Westerwick, 2015a), but also considers the use of heuristics (Wojcieszak & Garrett, 2018), and even the role of subconscious automatic impulses (Arendt et al., 2016).

Importantly, news decisions can reinforce pre-existing beliefs and attitudes (Bennett & Iyengar, 2008), which in turn can shape future news selection, and, therefore, spark a reinforcing spiral process (Slater, 2015). Such a pattern in which individual predispositions and selected predisposition-consistent news items reinforce each other, is of utmost importance especially from a mental health perspective, the context of the present study. In fact, disposition-congruent news choices may strengthen mental disorders such as depression: Individuals suffering from depression may tend to select depression-consistent news items which in turn reinforce their depressive symptoms.

Despite its relevance for the mental health domain, studies on selective exposure in the communication field usually do not include mental disorders into conceptualizations. This is unfortunate given their paramount influence on human cognitions. Given the high prevalence of depressive disorders – the World Health Organization estimates that 300 million people, which is 4.4% of the world's population suffer from depressive disorders (WHO, 2017) –, we believe that a conceptual integration of a clinical perspective into the field of communication, particularly selective exposure

research, is not only relevant for the mental health literature (Scherr et al., 2019), but would also complement and extend the literature on news selection.

Specifically, we look at a well-established notion from clinical psychology and psychiatry that conceptualizes depressed individuals as to view (1) the world around them, (2) their future, and (3) themselves in a negative fashion – the so called *negative cognitive triad* (Beck, 1987, 2008). Depression is also often accompanied by difficulties disengaging from negative information, and an increased processing of negative information (Gotlib & Joormann, 2010). Therefore, given self-affirmative tendencies in news selection (Knobloch-Westerwick, 2015a, 2015b), the present study investigated in how far depressive symptoms would be linked to selecting news that is congruent with depressogenic cognitions (i.e., cognitions that cause or maintain depression), the *negative-cognitive-triad-of-depression hypothesis of news choice*.

The present study touches early findings on mood management and selective exposure to media in non-clinical contexts (Zillmann, 1988a, 1988b), but also links with clinical depression as a predictor of selective exposure to information about the self (Hammen, 1977). In fact, we use clinical measures of depression (Patient Health Questionnaire (PHQ-9); Kroenke et al., 2001) to predict depression-congruent news items and thus test the cognitive-triad-of-depression hypothesis of news choice. Finally, we cross-validated our theoretical ideas in two independent selective exposure studies in Germany ($N = 395$) and South Korea ($N = 225$) following the call for replication (Open Science Collaboration, 2015). The two countries share a similar history and also have a similar point-prevalence of depression (Kocalevent et al., 2013; Shin et al., 2017), but are at the same time culturally different. We thereby acknowledge the currently discussed replication crisis, and aim at offering stronger-than-usual evidence, increasing our confidence into the generalizability of our findings.

News selection

We make decisions about news all the time, consciously and unconsciously – in fact, we have to, given that we just cannot consume all the available news (Zillmann, 1988a, 1988b). Following recent work in this area of research (see Arendt et al., 2017; Knobloch-Westerwick, 2015a), we conceptualize news selection as motivated (Kunda, 1990) and stimulated by different desires of which reaching self-reflection and the reduction of dissonance through like-minded information (Festinger, 1957; Knobloch-Westerwick, 2015a) are most relevant in the present context. Selective exposure is usually driven by conservative defense motivations to confirm what has already been there, and this selective information seeking can directly affect beliefs about ‘the self, other people, and the world – that is, the selection of declarative knowledge structure’ (Kunda, 1990, p. 487).

Of particular interest here are conceptualizations of self-related and affect-based selective exposure (Knobloch-Westerwick, 2015a; Zillmann & Bryant, 1985). We built our theorizing on selective exposure on the SESAM model, proposing that ‘media users select messages to manage and regulate their self-concept along with affective and cognitive states and behaviors’ (Knobloch-Westerwick, 2015b, p. 965). News selection is therefore conceptualized to be driven by the available media content that resonates with self-concepts, affective states, and anticipated exposure effects. These concepts in turn determine the selection and interpretation of the media content (Knobloch-Westerwick, 2015b). Importantly, the SESAM model proposes concepts that reciprocally influence each other (see also Slater, 2015): the more accessible attitudes, cognitions, and affect related to the self are, the more relevant they become for individual judgments and decision making (Bargh et al., 2001); the dynamic self includes the self in the past, the present, and in the future (Markus & Wurf, 1987). Hence, momentary self-representations become particularly relevant in the SESAM model: some aspects of the self can be triggered by external information and thereby become more salient and temporarily accessible (Higgins, 1996), and thus, over time, get more easily re-activated by an intensified chronic accessibility (Knobloch-Westerwick, 2015b).

Importantly, under clinical conditions where self-cognitions and affect states shift drastically (Beck, 1967), these processes might vehemently intensify. Therefore, we assume that the dynamic nature of the processes theorized in the SESAM model are of particular relevance in mental disorders. Particularly, research in the domain of self-conceptions and self-knowledge, i.e., how individuals think about themselves, their potential, and about their future, relies heavily on self-perceptions that are negatively biased in depression. In this case, the so called ‘possible selves’ (Markus & Nurius, 1986) are characterized by feelings of worthlessness, incompetence, or failure. Beck (1987) assumed that depressed individuals would develop such self-conceptions from relatively stable, depressive mental schemata. Hence, we believe this is worth a closer look in the following paragraphs.

Beck’s cognitive triad of depression

From a clinical perspective, Beck’s cognitive triad (Beck, 1987, 2008), often also referred to as the negative triad, describes the irrational and pessimistic belief system of a person suffering from depression, an affective disorder. The negative triad refers to automatic negative biases in thoughts about the world, the future, and the self (Beck, 2008). Specifically, people suffering from depression, tend to believe that nobody would value them (negative world view), that negative things would keep happening to them and their future would be hopeless (negative view on future), and that they would be worthless (negative view on self). According to Beck (2008), the negative cognitive triad often comes in combination with dysfunctional cognitive distortions such as overgeneralizations of negative events, selective abstractions from singular negative aspects to general negative patterns, or the internal attribution of the responsibility for negative events. It is assumed that depressive symptoms are strongly linked to the negatively biased information processing system that includes the negative, self-referential biases and dysfunctional schemas (= negative attitudes and beliefs about the future, the world, and oneself). Despite all conceptual progress, there are at least two major routes of how information can be processed that are in line with the major symptoms of depression (see Figure 1).

Figure 1 shows that depression can be linked with tendencies to *overgeneralize* negative events, i.e. over-interpreting their impact on oneself in the future, and to *internalize*, i.e., to attribute the fault of negative events to oneself and lesser to the circumstances in which they occurred. However, this theorizing has only been very limitedly explored across different cultures.

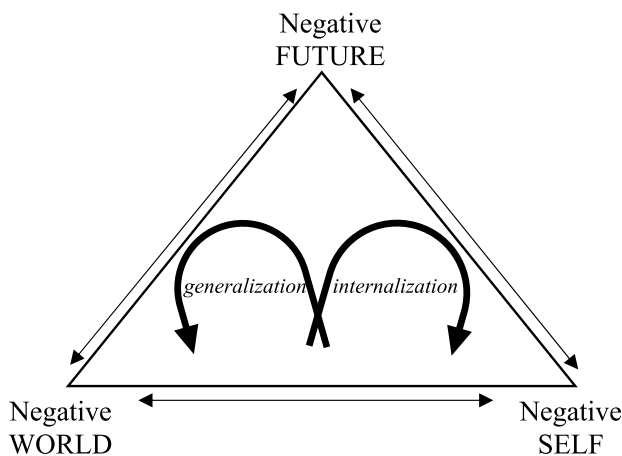


Figure 1. Negative cognitive triad according to Beck (1987). The circular model stipulates that in depression, negative thoughts refer to the world, the future, and the self. Given the circular model is unclear about its starting point and relevance among elements, two directions are plausible depressogenic thought patterns (Tung & Verbeke, 2010), namely negative *generalization* (i.e., self → future → world) and negative *internalization* (i.e., world → future → self).

Importantly, the dysfunctional cognitive schemata, in turn, are theorized to strongly influence the selection and interpretation of social information (Clark & Guyitt, 2016). However, despite the omnipresence of traditional mass and ‘new’ social media, these important assumptions have not yet been thoroughly applied to news selection. The repeated activation of dysfunctional schemas, however, may contribute to a hypersalient ‘depressive mode’ (Beck, 2008, p. 972) of information seeking with negative appraisals of information about the world, the future, and the self ultimately reinforcing each other (see the similarity to the notions made by the SESAM model and the reinforcing spiral assumption outlined above). Such maladaptive information processing patterns eventually become routinized, and therefore, more resistant to future change, and ultimately require only little external trigger in order to operate (Clark & Guyitt, 2016; LeMoult & Gotlib, 2019; Pössel, 2017).

Beck’s schema concept has been extensively tested empirically yielding tremendous conceptual progress (Jacobs et al., 2008; LeMoult & Gotlib, 2019). However, a test in the media context is still missing. More recent trends towards integrative models of depression (Disner et al., 2011) largely ignore the abundance and omnipresence of media use in everyday life (Vorderer & Kohring, 2013). For example, one study by Greening et al. (2005) looked into the structure of the three cognitive dimensions in a longitudinal study with two waves that were four months apart and used two adolescent samples with a different ethnic background. However, despite the paramount relevance of (social) media in this age group, the study only briefly mentions the potential role of media portrayals for developing and maintaining negative thought patterns. The present study aims at overcoming such conceptual and empirical shortcomings.

Cross-cultural context of the present study

Against this background, we follow the call for a cross-cultural comparisons of Beck’s cognitive model that acknowledges the role of media as a source of social information in everyday life and replicated the same study with two larger, independent samples in Germany and South Korea. Importantly, news preferences are a stable individual-level characteristic, but also shift over time and context (see e.g., Bachleda et al., 2020). In the present study, we assessed the context dependency of depressogenic news choices. We chose countries that share similarities (see Anckar, 2008) with regard to their historical development, their political and socioeconomic system, and that have similar point-prevalences of depression [5.6% in Germany (Kocalevent et al., 2013) vs. 6.7% in South Korea (Shin et al., 2017)]. At the same time, both countries sufficiently differ in their depressive cognitions (Chentsova-Dutton & Tsai, 2009) and depressogenic attributional styles (Abela & D’Alessandro, 2002) – related to the focal phenomenon. Thus, a cross-cultural comparison should provide us with a better understanding of 1) how the three components of Beck’s cognitive triad play together, 2) what potential role the media can play for the development and maintenance of negative thought patterns, and 3) how such mechanisms replicate across cultures.

Study 1: evidence from Germany

The first study tested the negative-cognitive-triad hypothesis in Germany. Based on the theorizing outlined above, we hypothesized that indicators for depression would predict the selection of negative news related to the world (H1a), the self (H1b), and the future (H1c). In order to test this hypothesis, we conducted a study to explore news choice decisions in Germany.

Method

Participants and procedure

We relied on a nonrepresentative, convenience sample of $N = 395$ individuals (58.5% female, $M_{age} = 42.77$, $SD_{age} = 15.64$, 23.0% students) in Germany recruited through *SoSci Panel* (Leiner, 2016). In the sample, females and higher educated people were overrepresented in contrast to the general

population. Of these individuals, 44.6% reported to have experienced limitations through the prevalence of depressive symptoms in the past two weeks. Individuals were invited to participate in a web-based study, in which they were exposed to pairs of news headlines. Per trial, individuals saw two headlines and were asked which of the two articles they would rather read. The two alternative news headlines were either clearly positive or negative in tone and focused on either the *self*, the *world* or the *future* in line with the dimensions of Beck's cognitive triad. For each of the three dimensions, participants saw five pairs of news headlines, in which a media person known to a large, international public was either centered or clearly referred to. We used headlines instead of full articles, because they are relevant for news choice decisions across different media channels. All headlines were developed in English and then translated into German and were presented in random order. Translation difficulties were discussed among co-authors until an agreement was reached.

Measures

Explicit depression. An established measure for depression was used to assess the frequency of 9 depressive symptoms as captured by the PHQ-9 (Kroenke et al., 2001). Using translated versions of the PHQ-9, participants in Germany indicated on a four-point scale (0 = *not at all* to 3 = *nearly every day*) to what extent they experienced depressive symptoms such as 'feeling down, depressed or hopeless', 'little interest or pleasure in doing things', or 'feeling tired or having little energy', which all referred to the previous 2 weeks. The nine items were then transformed into a sum index. A higher score indicates a higher level of depression (Germany: $M = 5.45$, $SD = 4.81$, Cronbach's $\alpha = .86$) according to the PHQ Manual (Kroenke et al., 2001).

Implicit depression. Additionally, we created an implicit measure for depression that reflects upon more automatically activated cognitive schemas, including negative thoughts about the self and the future (see Meites et al., 2008). We followed the general logic of implicit association tests (Greenwald et al., 1998) and assessed associations between depression-related mood with a person's self-concept. Meites et al. (2008) were the first who adapted this reaction-time procedure for the implicit measurement of depression in English. We followed the general test logic but developed our own measures both in German and Korean. The association test was administered online after explicit depression (headline choice task) had been measured. In line with Greenwald et al. (1998), there were seven trials (five training blocks and two test blocks [Test Block 4 and Test Block 7]). Test Block 4 assessed the strength of the automatic association between the categories 'me/sad' and "others/happy", while Test Block 7 assessed the reverse association strength (i.e., "others/sad" and "me/happy"). A full list of words for all categories used on the depression IAT can be found in the Appendix. We relied on the recommended 'improved scoring algorithm' (Greenwald et al., 2003), in which higher values are indicative of a stronger association between 'self' and 'happy' ($M = -.495$, $SD = .380$). Thus, the IAT test indicated a moderately strong, automatic association between 'self' and 'sad' as an implicit measure for depression. The reliability of the implicit test procedure (i.e., correlation between the improved d-scores from the training and test phase) was acceptable, $r = .483$, $p < .001$. The implicit measure showed a 'moderately strong' correlation with the PHQ-9 measure, $r = .275$, $p < .001$.

News choice decisions. A total of 15 news choice trials were used. In each trial, participants were exposed to two headlines. One pair of headlines always contained a positive and a negative headline. Negative headlines related to the *self* were either written in the first person or conveyed the negative meta-message 'I am worthless, and nobody loves me'. The present tense was used in order to stress the meta-message's relevance in the here and now. Negative *future* headlines were written in the third person and either used the future tense or described the future as a clear reference point with the meta-message 'things can only get worse!'. Finally, negative *world* headlines were designed to resonate with the notion that the world (or the social environment; in the present context a larger group of relevant others) is unfair, conveying the meta-message 'people ignore me all the time' and

‘it is impossible to have a good day,’ and included clear references to ‘the whole world’, ‘friends’, or ‘everyone’. A full list of all headlines can be found in the Appendix.

For each news decision, choosing the negative headline was coded as 1 and choosing the positive headline was coded as 0 with all decisions being summed up so that higher values of the sum index were indicative of a stronger preference for negative news related to *world* ($M = 2.92$, $SD = 1.26$), the *future* ($M = 2.83$; $SD = 1.26$), and the *self* ($M = 2.62$, $SD = 1.50$). In addition, we generated used an overall negative news choice measure, calculated as the sum of all three dimensions ($M = 8.38$, $SD = 3.25$, $range = 0-15$).

Controls. We included age, sex, student status, and a general preference for negativity in the news into all models. The latter was assessed using brief news headlines designed to not resonate with any of the other dimensions along the lines of Beck’s cognitive triad (e.g., ‘Study successful: vaccine promising.’ [positive] vs. ‘Experiment failed: drug unusable.’ [negative]). The full list of items can be found in the Appendix. The preference for negativity in the news was neither correlated with explicit depression ($r = .086$, $p = .088$) nor with implicit depression ($r = .034$, $p = .507$) in Germany.

Results

On average participants in Germany chose more than half of the negative headlines ($M = 8.38$, $SD = 3.25$). More specifically, slightly less negative headlines related to the self were chosen as compared to headlines related to the future, $t(394) = 2.86$, $p = .005$, $d = .152$, or the world, $t(394) = 4.19$, $p < .001$, $d = .217$. However, negative news about the future or the world did not differ, $t(394) = 1.45$, $p = .149$, $d = .071$.

Regression analyses in Table 1 show that the explicit depression measure (PHQ-9) was associated with overall negative news choice ($B = .170$, $p = .001$) as well as when news was related to the self ($B = .174$, $p = .001$) and the world ($B = .132$, $p = .013$). We observed a marginal association for news choice related to the future ($B = .098$, $p = .066$). In contrast, the implicit measure of depression was not related to any negative news choice decisions.

Discussion

This study extends Beck’s cognitive triad for a content-specific perspective, when selecting everyday news: In a German Sample, as suggested by Beck’s negative cognitive triad, depression was associated with a slightly increased selection to negative news related to the world and the self. However, this is only true for explicit, not for implicit indicators of depression. Moreover, depression was not related to the selection of news related to the future. Therefore, this study provides evidence that Beck’s clinical observations about patients’ cognitions and information processing related to environmental information at least to some extent also apply for news selection.

However, given the oftentimes criticized lack of replicating such findings (Meites et al., 2008), particularly across cultures, and specifically for theories about depression such as Beck’s negative cognitive triad (Greenwald et al., 1998), we replicated Study 1 in South Korea. In the following sections we will describe the replication study with a special focus on the commonalities and differences across the two studies.

Study 2: evidence from South Korea

We used the same methodology as in Study 1, with the only difference being the translations of the survey questions and the headlines into Korean.

Method

Participants and procedure

We relied on convenience (student) samples recruited in classes at a University in South Korea and invited them to participate in an online survey. A total of $N = 225$ participants was recruited in South Korea (70.7% female, $M_{age} = 22.94$, $SD_{age} = 3.51$, 97.8% students), and 56.4% of the participants reported to have experienced limitations through the prevalence of depressive symptoms in the past two weeks. The sample was younger, and females and students were overrepresented as compared to the general population.

The news headlines from Study 1 were translated into Korean were performed by an esteemed colleague and native speaker of Korean. The Korean translations were supervised by one co-author (MP) using back translations. Translational issues were discussed among all co-authors based on their English translations, and also involved two native speakers of Korean who are fluent in English. As in Study 1, headline choices were made at the beginning of the survey, and depression was assessed afterwards. The less heterogeneous Korean sample (particularly with regard to age and student status) as compared to the sample from Germany, has to be taken into consideration when interpreting the results and marks an important limitation to this study even though influences of these variables were controlled for.

Measures

Explicit depression. Depression was assessed using the Korean version of the self-report depression measure suggested by Kroenke et al. (2001). The Korean version of the PHQ-9 captures on a four-point scale (0 = *not at all* to 3 = *nearly every day*) to what extent participants experienced depressive symptoms in the previous 2 weeks. The nine items were then transformed into a sum index (South Korea: $M = 7.78$, $SD = 5.33$, Cronbach's $\alpha = .85$).

Implicit depression. Additionally, we used the same implicit measure for depression as in Study 1 after having it translated by native speakers of Korean and dissolved any translational conflicts by discussing them among all authors in English until a solution was reached. On average, the Korean sample reached $d = -.482$, $SD = .333$, which is indicative of a moderately strong, automatic association between 'self' and 'sad' as an implicit measure for depression. The reliability of the implicit test procedure (i.e., correlation between the improved D-scores from the training and test phase) was somewhat lower in Korea relative to the German sample, $r = .372$, $p < .001$. The implicit measure showed a somewhat smaller correlation with the PHQ-9 measure, $r = .132$, $p = .028$.

News choice decisions. were captured as in Study 1 by monitoring news choice decisions using translations of the Study 1 headlines within an online survey.

Controls. The same controls as in Study 1 (age, sex, student status, and a general preference for negativity in the news) have been included in Study 2. A preference for negativity in the news was neither correlated with explicit depression ($r = .038$, $p = .579$) nor with implicit depression ($r = .029$, $p = .678$).

Results

On average participants in South Korea also chose more than half of the negative headlines (South Korea: $M = 8.96$, $SD = 3.37$, $range = 0-15$). In contrast to the German sample, negative news related to the future ($M = 2.75$; $SD = 1.39$) were not chosen more or less frequently than news related to the self ($M = 2.91$, $SD = 1.38$), $t(211) = 1.609$, $p = .109$, $d = 0.116$. However, negative news about the world ($M = 3.29$, $SD = 1.36$) were chosen significantly more frequently than news about the self ($t(211) = 4.422$, $p < .001$, $d = .277$) or the future ($t(211) = 5.369$, $p < .001$, $d = .393$). This descriptive

Table 2. Number of selected negative news related to the self, the world, and the future in Germany and South Korea.

	Germany		South Korea		<i>t</i> (605)	<i>p</i>	Cohen's <i>d</i>	95% <i>CI</i> of <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Self	2.62	1.50	2.92	1.38	2.407	.016	.200	[.033, .367]
World	2.92	1.26	3.29	1.36	3.255	.001	.284	[.116, .451]
Future	2.83	1.26	2.75	1.39	0.659	.510	.058	[-.225, .109]

information also including the German outcomes are reported in Table 2. Interestingly, negative news related to the world, $t(605) = 3.255$, $p = .001$, $d = .284$, and to the self, $t(605) = 2.407$, $p = .016$, $d = .200$, were more frequently chosen in South Korea than in Germany. For negative news related to the future, however, there were no significant differences between both countries, $t(605) = 0.659$, $p = .510$, $d = .058$.

Regression analyses in Table 3 show that in the South Korean sample depression was neither related to an overall negative news choice ($B = .040$, $p = .571$) nor to news related to the world ($B = .052$, $p = .453$), the future ($B = .052$, $p = .469$), or the self ($B = -.005$, $p = .954$).

Similar to the findings in the German sample, the included implicit measure of depression was not associated with negative news choice decisions. Apparently, the explicit measure for depression (PHQ-9) operated differently across both samples. In order to address these discrepancies, we finally merged both datasets, and included the interaction terms between country and the different indicators for depression as moderators. This integrative country-moderation analysis is depicted in Table 4.

Indeed, a moderation effect of country was revealed for the association between explicit measure for depression and the choice of negative news related to the self. In South Korea, the explicit measure of depression (PHQ-9) was less strongly associated with the choice of negative news than in Germany ($B = -.300$, $p = .046$).

Discussion

The replication study using a South Korean sample yielded important similarities and differences that we would like to discuss here. Participants chose slightly more negative than positive news, especially those related to the world, which supports the notion of a negativity bias in news choices (see e.g., Bachleda et al., 2020; Soroka et al., 2019; Trussler & Soroka, 2014). Participants in South Korea chose relatively fewer negative headlines related to the future, and more negative headlines related to the self. Neither explicit nor implicit indicators of depression were associated with negative news choices, which needs to be carefully discussed, also in light of the findings from Study 1 that could not be replicated in Study 2.

General discussion

The two studies presented here used an established theory from clinical psychology and psychiatry, namely Beck's negative cognitive triad that assumes that the processing of information from the environment is negatively biased in depression. Negative thoughts about the self, the world, and the future are theorized to develop over time, and thereby evoke and/or maintain depressive symptoms. These assumptions are until today used as part of cognitive behavioral therapy of depression, where one therapy goal is to 'adjust' such negative cognitions about the self, the world around us, and our future by e.g., offering positive counterexamples to patients. However, the negative thought patterns are robust in depression and require the patients to collaborate with their therapists in order to effectively change these thought patterns.

Table 3. Hierarchical regression analysis of implicit and explicit indicators for depression predicting the selection of negative news related to the self, the world, and the future in South Korea (N = 225).

Overall Negative News	B	SE	p	Negative News Related to World	B	SE	p	Negative News Related to Future	B	SE	p	Negative News Related to Self	B	SE	p
<p>1. Step: Controls $F(4, 211) = 20.69$, $\Delta R^2 = .272$, $p < .001$</p>															
Age	-0.012	0.071	0.864	Age	0.011	0.031	0.711	Age	-0.036	0.031	0.244	Age	0.012	0.03	0.030
Gender (1 = female, 2 = male)	-0.395	0.473	0.404	Gender (1 = female, 2 = male)	-0.332	0.204	0.106	Gender (1 = female, 2 = male)	0.045	0.204	0.828	Gender (1 = female, 2 = male)	-0.108	0.202	0.202
Student (1 = student, 2 = no student)	-0.889	1.604	0.580	Student (1 = student, 2 = no student)	-1.827	0.693	0.009	Student (1 = student, 2 = no student)	0.824	0.694	0.236	Student (1 = student, 2 = no student)	0.114	0.686	0.686
General negativity	1.358	0.152	0.001	General negativity	0.361	0.066	0.001	General negativity	0.492	0.066	0.000	General negativity	0.505	0.065	0.065
<p>2. Step: Explicit Depression $F(5, 211) = 16.49$, $\Delta R^2 = .003$, $p < .001$</p>															
Age	-0.014	0.072	0.840	Age	0.009	0.031	0.770	Age	-0.037	0.031	0.228	Age	0.014	0.031	0.650
Gender	-0.379	0.477	0.428	Gender	-0.316	0.206	0.127	Gender	0.056	0.206	0.787	Gender	-0.119	0.204	0.561
Student	-0.837	1.619	0.606	Student	-1.775	0.699	0.012	Student	0.859	0.7	0.221	Student	0.079	0.692	0.909
General negativity	1.356	0.153	0.001	General negativity	0.359	0.066	0.000	General negativity	0.491	0.066	0.000	General negativity	0.506	0.065	0.000
Explicit depression (PHQ-9)	0.01	0.038	0.783	Explicit depression (PHQ-9)	0.01	0.016	0.523	Explicit depression (PHQ-9)	0.007	0.016	0.663	Explicit depression (PHQ-9)	-0.007	0.016	0.660
<p>3. Step: Implicit Depression $F(6, 211) = 13.79$, $\Delta R^2 = .002$, $p < .001$</p>															
Age	-0.011	0.072	0.878	Age	0.009	0.031	0.776	Age	-0.035	0.031	0.256	Age	0.015	0.031	0.617
Gender	-0.376	0.478	0.433	Gender	-0.316	0.207	0.128	Gender	0.058	0.206	0.780	Gender	-0.118	0.204	0.566
Student	-0.792	1.622	0.626	Student	-1.778	0.701	0.012	Student	0.887	0.7	0.207	Student	0.099	0.694	0.887
General negativity	1.36	0.153	0.001	General negativity	0.359	0.066	0.000	General negativity	0.493	0.066	0.000	General negativity	0.508	0.066	0.000
Explicit depression (PHQ-9)	0.014	0.038	0.714	Explicit depression (PHQ-9)	0.01	0.017	0.536	Explicit depression (PHQ-9)	0.009	0.017	0.573	Explicit depression (PHQ-9)	-0.006	0.016	0.735
Implicit depression (IAT)	-0.421	0.603	0.485	Implicit depression (IAT)	0.024	0.261	0.928	Implicit depression (IAT)	-0.259	0.26	0.320	Implicit depression (IAT)	-0.186	0.258	0.472
<p>1. Step: Controls $F(4, 211) = 14.40$, $\Delta R^2 = .203$, $p < .001$</p>															
<p>2. Step: Explicit Depression $F(5, 211) = 11.52$, $\Delta R^2 = .004$, $p < .001$</p>															
<p>3. Step: Implicit Depression $F(6, 211) = 9.76$, $\Delta R^2 = .000$, $p < .001$</p>															
<p>1. Step: Controls $F(4, 211) = 15.01$, $\Delta R^2 = .210$, $p < .001$</p>															
<p>2. Step: Explicit Depression $F(5, 211) = 12.00$, $\Delta R^2 = .003$, $p < .001$</p>															
<p>3. Step: Implicit Depression $F(6, 211) = 10.07$, $\Delta R^2 = .002$, $p < .001$</p>															

Table 4. Country-moderation analysis of implicit and explicit indicators for depression predicting the selection of negative news related to the self, the world, and the future in Germany (N = 395) and South Korea (N = 225).

Overall Negative News	B	SE	p	Negative News Related to World	B	SE	p	Negative News Related to Future	B	SE	p	Negative News Related to Self	B	SE	p
1. Step: Controls															
	$F(5, 606) = 37.09$			$F(5, 606) = 19.00$			$F(5, 606) = 23.89$			$F(5, 606) = 28.88$					
	$\Delta R^2 = .229, p < .001$			$\Delta R^2 = .129, p < .001$			$\Delta R^2 = .159, p < .001$			$\Delta R^2 = .187, p < .001$					
Age	0.009	0.011	0.405	0.006	0.005	0.177	0.002	0.005	0.628	0.002	0.005	0.628	0.001	0.005	0.890
Gender (1 = female, 2 = male)	0.236	0.250	0.346	-0.168	0.105	0.111	0.174	0.104	0.094	0.174	0.104	0.094	0.230	0.114	0.044
Country (1 = Germany, 2 = Korea)	-0.0280	0.355	0.432	-0.043	0.150	0.773	-0.323	0.147	0.029	-0.323	0.147	0.029	0.087	0.162	0.592
Student (1 = student, 2 = no student)	-0.648	0.412	0.116	-0.479	0.174	0.006	-0.154	0.171	0.367	-0.154	0.171	0.367	-0.015	0.188	0.937
General negativity	1.160	0.088	0.000	0.312	0.037	0.000	0.388	0.037	0	0.388	0.037	0	0.460	0.040	0.000
2. Step: Explicit Depression															
	$F(6, 606) = 32.19$			$F(6, 606) = 16.86$			$F(6, 606) = 20.19$			$F(6, 606) = 24.96$					
	$\Delta R^2 = .007, p < .001$			$\Delta R^2 = .007, p < .001$			$\Delta R^2 = .001, p < .001$			$\Delta R^2 = .005, p < .001$					
Age	0.010	0.011	0.354	0.007	0.005	0.150	0.002	0.005	0.596	0.002	0.005	0.596	0.001	0.005	0.828
Gender	0.286	0.250	0.253	-0.148	0.105	0.160	0.184	0.104	0.077	0.184	0.104	0.077	0.250	0.114	0.029
Country	-0.295	0.354	0.405	-0.049	0.149	0.741	-0.327	0.147	0.027	-0.327	0.147	0.027	0.081	0.162	0.617
Student	-0.523	0.413	0.206	0.430	0.174	0.014	-0.128	0.172	0.457	-0.128	0.172	0.457	0.034	0.189	0.857
General negativity	1.147	0.088	0.000	0.306	0.037	0.000	0.385	0.037	0.000	0.385	0.037	0.000	0.455	0.040	0.000
Explicit depression (PHQ-9)	0.059	0.024	0.014	0.024	0.010	0.020	0.012	0.010	0.214	0.012	0.010	0.214	0.023	0.011	0.034
3. Step: Implicit Depression															
	$F(7, 606) = 27.55$			$F(7, 606) = 14.54$			$F(7, 606) = 17.35$			$F(7, 606) = 21.43$					
	$\Delta R^2 = .001, p < .001$			$\Delta R^2 = .001, p < .001$			$\Delta R^2 = .001, p < .001$			$\Delta R^2 = .001, p < .001$					
Age	0.010	0.011	0.358	0.007	0.005	0.144	0.002	0.005	0.609	0.002	0.005	0.609	0.001	0.005	0.842
Gender	0.287	0.250	0.252	-0.150	0.105	0.157	0.185	0.104	0.075	0.185	0.104	0.075	0.251	0.114	0.028
Country	-0.300	0.355	0.398	-0.041	0.150	0.783	-0.333	0.148	0.024	-0.333	0.148	0.024	0.074	0.162	0.647
Student	-0.525	0.413	0.204	-0.426	0.174	0.015	-0.131	0.172	0.448	-0.131	0.172	0.448	0.031	0.189	0.868
General negativity	1.147	0.088	0.000	0.306	0.037	0.000	0.385	0.037	0.000	0.385	0.037	0.000	0.456	0.040	0.000
Explicit depression (PHQ-9)	0.061	0.025	0.014	0.022	0.010	0.036	0.014	0.010	0.174	0.014	0.010	0.174	0.025	0.011	0.028

(Continued)

Table 4. (Continued).

Overall Negative News	B	SE	p	Negative News Related to World	B	SE	p	Negative News Related to Future	B	SE	p	Negative News Related to Self	B	SE	p
Implicit depression (IAT)	-0.073	0.331	0.825	Implicit depression (IAT)	0.116	0.139	0.406	Implicit depression (IAT)	-0.093	0.138	0.498	Implicit depression (IAT)	-0.096	0.151	0.526
4. Step: Country Interaction															
$F(10, 606) = 19.94, \Delta R^2 = .003, p < .001$															
Age	0.011	0.011	0.320	Age	0.007	0.005	0.138	Age	0.002	0.005	0.598	Age	0.002	0.005	0.749
Gender	0.301	0.229	0.229	Gender	-0.144	0.106	0.172	Gender	0.193	0.104	0.063	Gender	0.252	0.114	0.028
Country	-0.934	0.811	0.250	Country	-0.325	0.343	0.344	Country	-0.789	0.337	0.02	Country	0.180	0.371	0.628
Student	-0.480	0.414	0.246	Student	-0.417	0.175	0.018	Student	-0.122	0.172	0.479	Student	0.058	0.189	0.757
General negativity	0.711	0.264	0.007	General negativity	0.179	0.112	0.109	General negativity	0.175	0.110	0.112	General negativity	0.357	0.121	0.003
Explicit depression (PHQ-9)	0.156	0.075	0.037	Explicit depression (PHQ-9)	0.036	0.032	0.249	Explicit depression (PHQ-9)	0.029	0.031	0.346	Explicit depression (PHQ-9)	0.090	0.034	0.008
Implicit depression (IAT)	0.636	0.997	0.524	Implicit depression (IAT)	0.408	0.422	0.334	Implicit depression (IAT)	0.219	0.415	0.598	Implicit depression (IAT)	0.010	0.456	0.983
General negativity * country	0.326	0.187	0.082	General negativity * country	0.095	0.079	0.229	General negativity * country	0.158	0.078	0.043	General negativity * country	0.073	0.085	0.392
Explicit depression * country	-0.067	0.049	0.176	Explicit depression * country	-0.010	0.021	0.624	Explicit depression * country	-0.011	0.021	0.603	Explicit depression * country	-0.046	0.023	0.042
Implicit depression * country	-0.576	0.719	0.423	Implicit depression * country	-0.229	0.304	0.451	Implicit depression * country	-0.245	0.299	0.413	Implicit depression * country	-0.102	0.328	0.757
4. Step: Country Interaction															
$F(10, 606) = 15.57, \Delta R^2 = .003, p < .001$															

Importantly, the theoretical background includes all kinds of environmental information and does not explicitly exclude the media, but surprisingly, the model (Beck, 1987) has neither been used to complement existing theorizing from communication science about media choices related to affect, mood, and cognitions (e.g., Arendt et al., 2017, 2016; Knobloch-Westerwick, 2015a; Zillmann, 1988a, 1988b) nor has it been integrated with the general human tendency toward negativity in the news selection domain (see e.g., Bachleda et al., 2020; Soroka et al., 2019; Trussler & Soroka, 2014). Similar to Bachleda et al. (2020), we conceptualized depression as an individual-level predictor of a preference for negativity in the news.

In order to bridge this gap and to conceptually integrate these fields in one study, we designed a study to test news choice decisions in relation to both explicit and implicit indicators for depression. We used the well-established PHQ-9 self-report measure for depression (Kroenke et al., 2001) and combined it with an implicit association test that captures the strength of the automatic associations between the concept 'self' and 'sad' as an implicit indicator for depression (Meites et al., 2008). We replicated our study conducted in Germany through collaborative efforts with colleagues in South Korea. Taken together, both studies show that there are country-specific differences in the preference for negative news content with a different focus (self, world, and future) that links with Beck's cognitive triad and typical depressogenic thought patterns. Therefore, both studies have important 1) content-specific, 2) conceptual, and 3) methodological implications.

Overall, with regard to the predicted associations of depression indicators and negative news choice decisions following the suggested logic of a cognitive triad (Beck, 1987), the two studies show that explicit indicators for depression were more associated with negative news choices than implicit measures as captured using an IAT test procedure (Greenwald et al., 1998, 2003). Explicit depression indicators were significantly associated with the choice of negative news related to the world and the self in Germany, but not in South Korea. Additional country moderation analyses showed that cultural influences seem to be particularly relevant when explicit indicators for depression are used to predict the choice of negative news related to the self.

From a content-specific perspective, participants in South Korea chose more negative news overall than their counterparts in Germany. In Germany, negative news about the world and the future were chosen more frequently, whereas in South Korea, negative news related to the self were chosen more frequently. This descriptive finding adds to the notion of negativity in the news (Engesser et al., 2014; Lengauer et al., 2012). Existing conceptualizations of negativity in the news include e.g., an overall negative tonality, a pessimistic outlook presented in the news story, or stresses the incapability of an individual political actor, but do not differentiate between how audience members could refer such negative news to themselves. While a general preference for negativity in the news helped explaining news choice, explicit (not implicit) depression predicted a smaller portion of news choice decisions specifically related to the self and the world (not the future) at least in Germany. Our study thereby points to the distinct role of depression as an individual-level factor that resonates with the choice of a specific news content feature – above and beyond message tone and with some cultural differences. For example, Bachleda et al. (2020) also observed individual-level variance within the cultural boundaries of three Western democracies in the preference for negative (vs. positive) news, and discuss whether more nuanced news content variations would have helped explaining the observed variance in negativity bias. Across studies, there is implicit agreement that news selection operates independent from some news dimensions (i.e., the topic), but not from all (e.g., a negative presentation style; see Reinemann et al., 2012). Our studies show that the focus dimension (i.e., news with a perspective that focuses on the world, the future, the self) might as well resonate with individual decisions about news selection among some audience members. This reflects upon the multidimensional character of the news content and offers a framework to design news headlines for future studies that would allow the field to move forward from Bachleda et al. (2020) claim for 'more nuanced variation in tone' (p. 9). Future studies on negativity biases in news selection might not just look at negative message styles across topics, but also consider the focus of the news that can resonate with audience members. Specifically,

informed by Beck (1976) arguing for depressed patients, internalizing mechanisms seem to be the case here, and negative news are therefore likely to be related to an audience member's self, their world and their future. By considering both indicators for depression and these three aspects that negative news can be referred to, our study speaks to the subjective relevance of a content-based conceptualization as presented by Lengauer et al. (2012). Importantly, uncovering country-specific differences in choosing negative news related to these dimensions between Germany and South Korea also speaks to the predominance of a Western focus in such conceptualizations. Content analyses that are able to speak to the relevance of our observations (i.e., the extent of negative news related to the world or the self in South Korea and other Asian countries) would therefore be very important in the future.

From a conceptual perspective, Beck's model remains silent about both a hierarchy among the three model elements and any specific order. Is it negative thoughts about the future and the world that make negative thoughts about the self more likely as some sort of internalizing mechanism, or is it a negative focus on the self that consequently makes the world and the future appear more negative as part of a negative generalization (see also Figure 1)? Our findings from two countries contribute empirical evidence showing that in the German sample the relative importance of concepts related to the self and the world are stronger related to explicit indicators of depression than in South Korea where such differences remained unobservable. There might be cultural differences in the way news are consumed, particularly among the young and highly educated South Korean sample. For instance, while the German news audience is still somewhat faithful to traditional media (Mangold & Bachl, 2018), online news consumption through domestic platforms such as Naver and Daum that function as both search engines and news aggregators surpass traditional media use in South Korea (Newman et al., 2018). The platforms pay publishers for access to content, while restricting publishers' direct access, and their news recommendation principles by human editors has been criticized for being biased and manipulative. Moreover, trust in news has been reported to be the lowest in South Korea in a 37 country comparison report (Newman et al., 2018). In South Korea, news recommendation is largely based on computerized algorithms, and there are large concerns about poor journalism and fabricated stories. Selective media use has been discussed for its relevance for political polarization by creating attitude consistent 'echo chambers' among users (Jamieson & Cappella, 2008; Wallsten, 2005) for a while. Importantly, platform algorithms might re-enforce it if like-minded individuals are kept being exposed to views similar to their own point of view online (Pariser, 2011) with possibly reinforcing and further polarizing effects on e.g., political attitudes (Garrett, 2009). Although concerns could be raised that platforms might reinforce depressive thoughts by algorithmically displaying attitude-consistent news to their users, our findings would only support this view for Germany, not South Korea. Among Koreans, asking always about decisions in favor of two similar headlines might have triggered already existing concerns about the influence of algorithms and fabricated news stories and therefore have influenced the study findings. Future studies will have to follow-up on this observation.

Methodologically, it would also be worthwhile to look closer at the different dynamics implied by the model that could explain the cross-sectional findings presented here. Depressive cognitions come and go, are stronger and weaker and vary with the depressive symptomatology. Furthermore, these dynamics might be individually different as well. Hence, several interpretations may be plausible at the same time given the individual cognitive patterns in depression. Moreover, different observations can be compatible with Beck's model that remains silent about any specific starting points and orders of the negative cognitive triad. Given the lack of cross-cultural replications of findings related to depressive cognitions (Cardemil et al., 2005), our findings are among the very few that actually shed light on such cultural discrepancies, and allow looking at these dynamics more in detail by separating all three elements of Beck's cognitive triad in a mediated context. The present study should therefore be more seen as a starting point in this direction. For instance, from an analytical perspective it might be relevant to not only look at the initial amount of selected negative (vs. positive) news, but also to consider the order of selecting positive and negative news more in detail,

and addressing the question of whether internalizing or generalizing dynamics seem more in line with the suggestions by Beck.

Finally, the observed country differences between Germany and South Korea might reflect cultural differences as well. For instance, the relative importance attributed to negative (vs. positive) news related to the oneself in relation to others might be considered more relevant in more collectivist (i.e., South Korea) vs. more individualist (i.e., Germany) cultures – despite all conceptual and methodological concerns (Tung & Verbeke, 2010). Thus, the South Korean participants' higher preference for negative news about the self and world could reflect higher collectivist cognitions characterized by a relatively higher importance of the individual as part of a collective that makes these two aspects in conjunction more relevant. Future studies should therefore inspect a cross-cultural perspective more thoroughly in order to find explanations for the descriptive differences across countries.

Limitations

This study has important limitations that have to be considered when interpreting the findings. First, we only look at two samples from two countries and measure depression and news choices at one point in time. Both depression and news choice might vary over time, and also influence each other as assumed in Beck's cognitive triad. This limitation could be addressed by future research not only by collecting longitudinal data with several measurement point over time but also using analytical strategies that are more reflective of the dynamics involved here. Second, other aspects that explain tendencies for generalization vs. internalization of environmental information in conjunction with depression should be included in future studies, since these might help explaining some of the findings presented here. In fact, it could be that such preferences vary with depression (Beck, 1987) and across individuals. More complex data modelling could address this. One could also criticize us for our samples. In both studies, participants were young and not representative of the general population. Future studies could also use e.g., quota sampling to address this important omission. Also, the headlines included people who could have been more recognized by a Western audience, for whom South Koreans in general are likely to feel less familiar with. However, we consider this only as a minor limitation, given that each headline choice task presented two headlines featuring the same person, and that both headlines only differed in tone as suggested by the negative cognitive triad. And finally, we captured news choice decision based on headline choices. Although this procedure has been successfully employed in other contexts of media choices (Arendt et al., 2017, 2016), one could also consider more elaborate selective exposure designs that include full-length articles with more information, different facets on a topic, and more nuances.

Conclusion

In the present study we transferred Beck's prominent model about depressogenic cognitions to a media choice situation. Beck postulates a *negative cognitive triad* and assumes that cognitions in depression are 1) predominantly negative and 2) related to the self, the world, and the future. Given depression-specific thought patterns and the omnipresence of routinely used media in our everyday lives, we made an argument that Beck's negative cognitive triad would translate to news choice decisions (i.e., a preference for negative rather than positive news that relate to the self, the world, or the future). These assumptions were tested in a first study in Germany as well as in a replication study in South Korea using an identical study design, multiple news choice decisions, and both implicit and explicit measures for depression. While Beck's negative cognitive triad seems useful to explain news choices related to the world and the self in Germany, cultural differences might explain why such findings did not replicate in South Korea. Both studies thereby underline the importance of replication studies: Replicating findings is not only substantial for theoretical and methodological progress, also not replicating findings has important implications for future research. Apparently,

there are complex technological factors hindering the German observations from being replicated in South Korea that need to be explored more in detail. These might not only be limited to cultural differences but also include technological developments, media preferences, and individual news diets.

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ORCID

Sebastian Scherr  <http://orcid.org/0000-0003-4730-1575>

Florian Arendt  <http://orcid.org/0000-0003-1107-8682>

Michael Prieler  <http://orcid.org/0000-0002-7851-8016>

Youngkee Ju  <http://orcid.org/0000-0001-8228-4825>

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