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Discrimination between hopes and expectancies for nonvolitional outcomes: psychological phenomenon or artifact?

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Abstract

Despite the large literature concerning the impact of hope and expectancy on various outcomes (e.g., nonvolitional), less is known about the constructs of hope and expectancy themselves. In a recent study, Montgomery et al. (2003) demonstrated that hopes and expectancies are separate but related constructs; however, because both hopes and expectancies were measured within the same context, it is possible that these findings were simply a methodological artifact. Furthermore, it is unknown whether these data would generalize to other populations. Taking into account the importance of this distinction for both the expectancy and hope literatures, the present study sought to: (1) Determine if the distinction between hope and expectancy is a general and reliable phenomenon by using a culturally different sample (i.e., Romanian sample); and (2) Examine the robustness of this distinction by controlling for the context effect. One hundred-twenty five volunteers completed items in regard to 10 nonvolitional outcome scenarios in one of five measurement contexts. The results revealed that hope and expectancy were distinct constructs ($p < 0.0001$), and that this distinction is both general and robust across contexts. Implications for theory and research are discussed.

Keywords

Hope; Expectancy; Context effect; Nonvolitional outcomes

1. Introduction

A review of hope (e.g., Snyder, 1994, 2000; Snyder et al., 1997; Snyder, Simpson, Ybasco, Borders, & Babyak, 1996) and response expectancy (e.g., Kirsch, 1999) assessment literatures revealed at least two main limitations.

First, the assessment of hopes in both children (Snyder et al., 1997) and adults (Snyder et al., 1996) seems to lack distinction from expectancies. For example, examination of the leading hopes scale for adults (Snyder et al., 1996) reveals that individuals are asked to report on what they think in regard to future behavioral outcomes rather than on what they hope. Even if such assessment methods have been quite productive for the prediction of behavior (see Snyder, 2002; Snyder, Simpson, Michael, & Cheavens, 2001), these practices may inadvertently

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further obfuscate the distinction between hopes and expectancies in regard to various outcomes (e.g., nonvolitional outcomes).

Second, despite the growing literature on the powerful effects of response expectancy in a variety of contexts, less is known about the components of the construct itself. Response expectancies are defined as anticipations of one's own nonvolitional reactions to situations and behaviors (Kirsch, 1999; Montgomery & Bovbjerg, 2003). For example, expecting to feel anxious can often lead one to feel anxious (e.g., Montgomery, Weltz, Seltz, & Bovbjerg, 2001). Kirsch (1985) was perhaps the first to explicitly theorize on relations between what individuals expect and their experiences of seemingly automatic responses. He termed such beliefs concerning nonvolitional outcomes, "response expectancies," and explicitly hypothesized that response expectancies are: sufficient to cause nonvolitional outcomes; not mediated by other psychological variables; and self-confirming while seemingly automatic. Since that time, the literature has grown to support the strong role of response expectancies as a psychological mechanism for producing nonvolitional outcomes in three areas of research: (1) placebo effects (Montgomery & Kirsch, 1996, 1997; Price et al., 1999); (2) the effects of hypnotic interventions (e.g., Montgomery et al., 2001); and (3) the effects of pharmacological agents (Kirsch & Rasadino, 1993; Lansky & Wilson, 1981; Montgomery et al., 1998; Montgomery & Bovbjerg, 2000, 2001; Roscoe, Hickok, & Morrow, 2000). Additional evidence has suggested that response expectancies influence memory reports, pain perception, responses to psychotherapy, sexual arousal, asthmatic responses, and mood (Kirsch, 1990, 1999). However, despite this growing literature, it is not known whether individuals' hopes contribute to their response expectancies. Determination of the relations between these two constructs is a necessary first step to be taken before the relative contributions of hopes and response expectancies to nonvolitional outcomes should be explored.

In a more recent study, Montgomery, David, DiLorenzo, and Erblich (2003) addressed some of these problems. They investigated whether people can discriminate between hope and expectancy for nonvolitional outcomes and found that individuals can indeed discriminate between these two constructs. The overall pattern of the data indicated that expectancies and hopes were independent but related constructs (e.g., expectations and hopes were correlated for 9 out of 10 nonvolitional outcome scenarios assessed). They also found that both stable individual characteristics and prior experience were associated with individuals' hopes and expectations (Montgomery et al., 2003). These data suggest that the pursuit of hope as a separate construct may potentially add to predictive models of various outcomes (e.g., nonvolitional outcomes).

Before further research can directly exploit these findings, it is fundamental to demonstrate the reliability, generalizability, and the robustness of this effect. For example, it is possible that the apparent distinction between hopes and expectancies as relating to nonvolitional outcomes is only a byproduct/artifact of the procedure used in Montgomery et al.'s (2003) study. Indeed, self-report measures have been shown to be strongly influenced by features of the assessment instruments, including context of administration (Schwarz, 1999). Respondents' interpretation of a question has been shown to be influenced by the content of adjacent questions; in this way, the context effect may either inflate or underestimate the association and/or the distinction between various variables (Schwarz, 1999). For example, Council, Kirsch, and Hafner (1986) found that hypnotic suggestibility was correlated with absorption only if the absorption scale was administered in a context that was clearly associated with the subsequent test of hypnotic suggestibility. When the measures were administered in apparently "separate" contexts, there was no correlation. Thus, the relation between absorption and hypnotic suggestibility may be a result of the context effect (Kirsch, 1990). Examination of Montgomery et al.'s (2003) procedure reveals that hopes and expectancies were measured in the same

context; this procedure might have “forced” participants to artificially differentiate between hope and expectancy.

Moreover, recent studies also suggest the role of culture in shaping hope and expectancy. For example, Chang (1996) found that the generalized expectations of optimism and pessimism (constructs similar to the ones studies here) are different in Asian Americans and Caucasian Americans. Thus, it is possible that specific measures of expectancies and hopes (as those used in Montgomery et al.'s study) may be also affected by cultural differences. Romanians for example, have also been shown to differ from Caucasian Americans on a variety of psychological variables (i.e., aspiration; well-being) that reflect cultural-specific indicators (Frost & Frost, 2000). These variables may be related to the hope-expectancy distinction for nonvolitional outcomes. Thus, to assess the generalizability of previous results established with an American sample (Montgomery et al., 2003), we selected a Romanian sample for this study.

Therefore, additional research on the distinction between hope and expectancy is needed. It should be shown that the distinction between hope and expectancy is not an artifact of the context effect specifically (for more details about the context effect on the measurements, see Schwarz, 1999) or cultural bias (i.e., Caucasian Americans). Such a study will have both theoretical and practical implications. *From a theoretical point of view*, the study will add to the understanding of the relationship between hopes and expectancies. Indeed, despite a growing literature on the powerful effects of hopes and expectancies in a variety of contexts, less is known about the components of the constructs themselves. To date, only one study investigating this aspect as relating to nonvolitional outcomes exists (i.e., Montgomery et al., 2003), and its results should be replicated. *From a practical point of view*, a replication of the generalizability and robustness of Montgomery et al.'s (2003) results across contexts would offer empirical support for future research including hope as a potential independent predictor of nonvolitional outcomes.

The primary aims of the present study were to: (1) determine if participants can distinguish between response expectancies and hopes as related to nonvolitional outcomes, a replication of Montgomery et al.'s (2003) results; (2) demonstrate the generalizability of this phenomenon by using a culturally different sample (i.e., Romanians); and (3) investigate the robustness of this phenomenon by studying the impact of context effects on the distinction between hopes and response expectancies.

2. Method

2.1. Participants

Participants were 100 female and 25 male Romanian undergraduate student volunteers from the first author's (DD) university (Babes-Bolyai University). They ranged in age from 18 to 24 years (mean age=21.52, SD=1.19). The sample was 100% Caucasian, and 8% of the sample was married. Participants were asked to complete a brief questionnaire at the conclusion of a lecture. Study participation was on a strictly voluntary basis; participants were not reimbursed for participation in the study. Participation took about 20 min. Prior to participation, volunteers signed a consent form, and following study completion, they were debriefed about the aims of the study. There were no significant differences in age, marital status, and gender ratio between this sample and the sample used in the previous study (Montgomery et al., 2003).

2.2. Measures

Consistent with Montgomery et al.'s (2003) procedure, participants' hopes and response expectancies were assessed with 10-cm visual analogue scales for ten scenarios involving events with associated nonvolitional outcomes (e.g., drinking caffeinated coffee, drinking alcohol, smoking a cigarette, upcoming surgery, exercising, taking an exam, and eating

chocolate). Assessment of expectancy was consistent with previously published methodology (Montgomery et al., 1998; Montgomery & Bovbjerg, 2000; Montgomery et al., 2003). Specifically, participants were asked to report their expectancies for nonvolitional outcomes (e.g., how anxious do you expect to feel?) in specific scenarios (e.g., when taking an exam). Analogously, for each item they were also asked to report their hopes for nonvolitional outcomes (e.g., how anxious do you hope to feel?) in specific scenarios (e.g., when taking an exam). Participants marked to the left of the line if they felt absolutely no anxiety at all (coded as zeros); otherwise, the distance in millimeters from the left end of the line provided the anxiety score (range=0–100). There were four positive valence outcome scenario items (e.g., feeling relaxed after smoking a cigarette) and six negative valence items (e.g., feeling anxious prior to an exam). The order of the scenario items was randomly determined. That is, both positive and negative items were mixed and not given as a block to avoid order effects. All participants completed the items in the same order. Cronbach's Alpha for expectancy and hope items in each experimental group (see Procedure for descriptions of the groups) demonstrated satisfactory internal consistency: Group 1: Expectancy=0.73; Hope=0.68; Group 2: Expectancy =0.65; Group 3: Hope=0.69; Group 4: Expectancy=0.76; Hope=0.74; Group 5: Expectancy =0.73; Hope = 0.76.

2.3. Procedure

The participants were randomly divided into five groups. The context of measurement was manipulated for hope and expectancy for various outcomes across the groups. Specifically, for the first group (Group 1) the measures of hopes and expectancies were administered for each of the scenarios on the same page (i.e., the same context), with a separate page for each scenario, following exactly the methodology of Montgomery et al. (2003). The second group (Group 2) followed the same procedure as Group 1, except that only measures of hopes (not expectancies) were administered. The third group (Group 3) completed only measures of expectancies (not hopes). The fourth group (Group 4) was administered the measures of hopes first, and after a period of five minutes, the measures of expectancies for the same scenarios. The fifth group (Group 5) received the measures of expectancies first, and then after a period of five minutes, the measures of hopes.

3. Results

The analyses of effects of gender on hope and expectancy were not significant ($p > 0.5$), and therefore, gender was not included as a variable in subsequent analyses. Also, there were no significant differences relating to demographic characteristics (i.e., age, gender, marital status) between the five groups (all $p > 0.50$).

Between group comparisons showed that there were no statistically significant differences regarding expectancies across the four groups which completed those items [$F(3, 96) = 0.22$, $p = 0.88$]. Similarly, there were no between group differences for hopes across the four groups which completed those items [$F(3; 96) = 1.03$, $p = 0.34$]. Because these analyses did not reveal between-groups differences for both hopes and expectancies, subsequent analyses were based on combined data from the three experimental groups which completed measures of both hopes and expectancies (Groups 1, 4, and 5). These analyses (with Groups 1, 4, and 5 combined as these groups complete both the expectancy and hope items) revealed significant differences between hopes and expectancies [$t(74) = 4.36$, $p = 0.0001$]. For a direct analysis of the distinction between hope and expectancy the Delta method was used (Groups 1, 4, and 5 combined). Basically, we subtracted each expectancy score from the corresponding hope score for the same scenario. Negative difference scores were multiplied by -1 to obtain the absolute difference for each subject. If one did not multiply by -1 , then individual subjects rating hopes and expectancies very differently could cancel each other out (i.e., sum to zero), potentially

masking differences. Next, we checked if the difference between expectancies and hopes (mean absolute Delta) was significantly different from zero for each scenario. If the mean absolute Delta is significantly different from zero, then we can assume that hopes and expectancies scores are different and that hope and expectancy may represent two different constructs. If the mean absolute Delta is not significantly different from zero, then it is possible that the two measures refer to the same underlying construct. As seen in Table 1, the difference between hopes and expectations was significantly greater than zero in each case. Furthermore, mean absolute Delta scores between Groups 1, 4 and 5 did not differ from each other ($p > 0.10$), but each individually was greater than zero ($p's < 0.0001$).

Fig. 1 represents graphically the differences between hopes and expectancies for each scenario.

4. Discussion

The results of the present study revealed that individuals are able to make a distinction between hope and expectancy as relating to both positive (e.g., relaxed) and negative (e.g., anxious) nonvolitional outcomes in both positive (e.g., exercise) and negative (e.g., surgery) situations.

These present results replicated the previous findings of Montgomery et al. (2003) in a different cultural sample (i.e., Romanians); replication in a culturally different sample supports the generalizability of this phenomenon.

Psychological literature has warned that some self-report measures might be influenced by the context of measurement (e.g., interpretation of a question is influenced by the content of the adjacent question) and therefore, many outcomes could be interpreted as methodological artifacts rather than real psychological phenomena (Schwarz, 1999). However, the context effect-related statistical analyses showed no effect of the five measurement contexts on the distinction between hope and expectancy in the present study; it strongly suggests that the distinction between hope and expectancy is not an artifact of the methodology but a robust psychological phenomenon manifested across various five measurement contexts.

The present study has three main limitations. First, although the present sample differs from that of Montgomery et al. (2003) (Romanians vs. Caucasian Americans), it was not heterogeneous. Frost and Frost (2000) have found that Romanians and Caucasian Americans differ in some important psychological variables (e.g., aspirations) however, they are also similar in other ways (e.g., community feelings/well being). Therefore, to further establish generalizability of the distinction across cultures, additional cultural samples should be studied. The second limitation is related to the lack of a prospective nonvolitional outcome. Such a prospective study is clearly the next step in this line of research, as the distinction between hope and expectancy proved to be a robust phenomenon; however, to do so before formally establishing hopes and expectancies as separate constructs would have been premature. Third, it is possible that the significant differences from zero using the Delta method as described here may merely reflect measurement error. Differences between the two sets of ratings (i.e., hopes and expectancies), due to measurement error would contribute to observing absolute differences between the variables. However, in the present study such a possibility should be ruled out because the pattern of the results was consistent across Groups 1, 4 and 5. That is, if measurement error was the source of the difference, then we would anticipate greater differences (Delta scores) in Groups 4 and 5 than in Group 1 where the items were administered on the same page. This was not the case. All groups demonstrated absolute Delta scores greater than zero, and not significantly different from each other.

In conclusion, the present study together with Montgomery et al. (2003)'s study demonstrated that hope and expectancy were separate psychological constructs. This conclusion was supported in both US and Romanian samples, supporting the generalizability of the

phenomenon. Also, because the context effect does not seem to affect the distinction between hope and expectancy, one may argue that the present data support the robustness of this phenomenon. However, one should take note that while hope and expectancy were independent constructs, they are not unrelated. These new findings in the area of hope and expectancy research strongly suggest that the pursuit of hope as a separate construct may add to the predictive models of various outcomes (e.g., nonvolitional). More generally, it should be stated that these data do not detract from previously established response expectancy and hope effects in the literature, but suggest a conceptualization of hope as a separate (but related) construct from expectancy. Future studies should use experimental research paradigms to test the sources of expectancy and hope, as well as to establish whether hope adds to predictive models of volitional and nonvolitional outcomes once expectancies have been incorporated.

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Fig. 1.
Mean absolute delta by outcome scenario.

Table 1

Mean absolute delta and statistical tests for differences from zero for each outcome scenario

Outcome	Mean delta	SD	<i>P</i> value
Anxiety about an exam	22.82	23.61	$p < 0.0001$
Tired following exercise	16.61	16.43	$p < 0.0001$
Upset about surgery	20.82	24.44	$p < 0.0001$
Pain following surgery	23.01	23.57	$p < 0.0001$
Craving a cigarette	6.49	10.43	$p < 0.0001$
Craving chocolate	16.14	18.34	$p < 0.0001$
Relaxed following coffee	15.74	15.30	$p < 0.0001$
Energized following coffee	14.89	16.43	$p < 0.0001$
Happy following alcohol	15.08	18.08	$p < 0.0001$
Relaxed following a cigarette	8.97	14.59	$p < 0.0001$

Note: Delta was calculated by subtracting expectancy from hope scores and then taking the absolute value for each scenario.