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1 Running Head: Empathy-Distress and Helping Behavior

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5 I Feel so Sorry! Tapping the Joint Influence of Empathy and Personal Distress on Helping

6 Behavior.

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Abstract

Observing a person in need usually provokes a compound and dynamic emotional experience made up of empathy and personal distress which, in turn, may influence helping behavior. As the exclusive use of rating scales to measure these two emotions does not permit the analysis of their concurrent evolution, we added the Analogical Emotional Scale (AES) in order to measure how these two emotions evolve throughout the emotional experience, from its onset to its conclusion. Therefore, in two studies, the concurrence of empathy and personal distress was induced, both rating scales and AES were used, and participants were given an unexpected opportunity to help. Two effects were found. First, the helping behavior was lower when personal distress prevailed over empathy at the end of the experience (Studies 1 and 2). Second, this “end” effect was coherent with the nature of the different motives evoked by personal distress and empathy – directed to increasing either one’s own welfare (egoistic) or the victim’s welfare (altruism) (Study 2). These results support the usefulness of combining the rating scales and the AES for gaining a better understanding of the nature and behavioral consequences of complex, compound and dynamic emotional experiences.

Keys words: empathy, personal distress, helping behavior.

1 I Feel so Sorry! Tapping the Joint Influence of Empathy and Personal Distress on Helping  
2 Behavior

3 Can we feel both empathy and personal distress together? Yes, we can. Research has  
4 consistently shown that these two emotions (a) are elicited by the situation of perceiving a person  
5 in need, (b) are usually reported in rating scales as occurring simultaneously, and (c) may lead to  
6 an increase in helping behavior (for a review, see Batson, Fultz, Schoenrade & Paduano 1987).  
7 However, our initial question is not altogether irrelevant; while previous studies have shown that  
8 the response to another's relatively severe and unexpected need involves the emotional  
9 experiences of empathy and distress, distinguishing between these two emotional reactions has  
10 been highlighted as important, and for two reasons: they are easily confused with one another  
11 (Batson, Early & Salvarani, 1997) and they have a powerful effect on helping behavior (for a  
12 review see Batson, 1991; Batson, 2011).

13 Focusing on both their usual misidentification and their impact on helping behavior,  
14 researchers have warned that empathy and personal distress are two emotions with very different  
15 natures. For example, Batson and collaborators claim that empathy is an *other-oriented* emotion  
16 that evokes the altruistic motivation to reduce the other's need, whereas personal distress is a  
17 *self-oriented* emotion that evokes the egoistic motivation to reduce one's own aversive arousal  
18 (Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Batson, O'Quin, Fultz, Vanderplas, &  
19 Isen, 1983). This claim has been tested through experimental procedures which typically include  
20 the manipulation of two variables: empathy/distress prevalence and the possibility of escaping  
21 from the situation. The empathy/distress prevalence is usually manipulated by asking participants  
22 to maintain a specific perspective while observing the person's suffering (e.g., try to imagine  
23 how she feels vs. try to image how you would feel in her situation), while the escape

1 manipulation consists in leading participants to believe that they can (or cannot) easily get away  
2 from noticing the person's suffering. In a 2 x 2 factorial design, then, the predictions are as  
3 follows: when it is difficult to escape people will help because helping is the only way to  
4 alleviate the other's suffering (prevalence of empathy) or their own discomfort (prevalence of  
5 personal distress); however, when it is easy to escape only those oriented to alleviate the other's  
6 suffering (prevalence of empathy) will still help, whereas those oriented to alleviate own  
7 discomfort (prevalence of personal distress) will not help because they believe that such  
8 discomfort is not going to last (i.e., physical or psychological escape). According to this  
9 reasoning, it is expected that the lowest percentage of helping will be found when the personal  
10 distress prevails over empathy in a situation in which is easier to escape from the other's  
11 suffering: the 1-vs-3 pattern (Batson, Bolen, Cross, & Neuringer-Benefiel, 1986; Stocks,  
12 Lishner, & Decker, 2009; Toi & Batson, 1982).

13 *A Compound and Dynamic Emotional Experience*

14         The fuzzy boundaries that characterize the distinctions between emotions in general  
15 (Russell & Fehr, 1994; Russell & Feldman Barrett, 1999), and empathy and personal distress in  
16 particular, bring an additional complication when they are being measured. For example, factor  
17 analytic studies usually show a two-factor solution; with ratings on sympathetic, softhearted,  
18 warm, compassionate, tender or moved loading in the first factor, and ratings on distressed,  
19 disturbed, upset or worried loading in the second factor. However, the scales formed by the  
20 ratings corresponding to these two factors usually present high correlations; indeed, when a one-  
21 component solution is required all the ratings making up the empathy and distress scales present  
22 high loads in that component (see Batson et al., 1997).

1           The problem concerns not only how to separate empathy and personal distress, but also,  
2 and importantly, how these two emotional experiences co-evolve throughout a specific emotional  
3 episode. The rating scales typically used may be accurate in tapping and differentiating between  
4 empathy and personal distress; however, they require participants to summarize a continuous  
5 experience in a single value, without allowing them to describe the changes in intensity an  
6 emotion may undergo during the brief period in which it is experienced. Rating scales do not  
7 reveal to researchers how these two emotions –different in valence, arousal, focus of attention  
8 and other dimensions– change over time in relation to one another. As an alternative, in this  
9 research we suggest that the experience resulting from observing another person’s suffering can  
10 be addressed as a *dynamic* and *compound* emotional experience formed by the coexistence of  
11 empathy and personal distress. Focusing on the *dynamic* quality raises an important question  
12 regarding the structure of the emotional experience; namely, the rating scales typically used  
13 consistently show that participants report some intensity for both empathy and personal distress;  
14 however, these rating scales provide no insight into how these two emotions evolve throughout a  
15 specific emotional episode which has a beginning, a middle and an end. Focusing on the  
16 *compound* quality raises another important question regarding how these two emotions relate to  
17 each other over the emotional episode; that is, which one prevails at the beginning, the middle,  
18 and the end of such emotional episodes?

19           The objective of this work is to *test how the emotional experience influences helping*  
20 *behavior as this emotional experience occurs in the natural stream of events: a dynamic,*  
21 *compound emotional experience formed by the co-evolution of empathy and personal distress*  
22 *over a given period of time.* We address this objective in two ways.

1           First, we combine the use of rating scales with the use of the Analogical Emotional Scale  
2 (AES). Previous research (Carrera & Oceja, 2007; Oceja & Carrera, 2009) has shown that the  
3 AES enables both participants and researchers to discriminate between reports about different  
4 patterns of experiencing two coexisting emotions. Specifically, participants are first trained in the  
5 use of the AES by giving them instructions (see Appendix) explaining that they will see one  
6 stimulus (e.g., an advertisement) and subsequently be asked to represent their subjective  
7 emotional experience in a space defined by two dimensions: duration and intensity. The  
8 horizontal duration dimension presents the three moments related to the course of the emotional  
9 experience (beginning, middle and ending), and the vertical intensity dimension presents five  
10 levels ranging from *very low* to *very high*. Therefore, on this two-dimensional graph, participants  
11 represent how these emotions change over a period of time by drawing two lines in a space, one  
12 for each emotion. Previous research has shown that analogical measures such as the AES  
13 (Carrera & Oceja, 2007; Oceja & Carrera, 2009), moving dials or pushing buttons (Larsen &  
14 Fredrickson, 1999; Larsen, McGraw, Mellers, & Cacioppo, 2004), or drawing diagrams on the  
15 computer screen (Sonnemans & Frijda, 1994) provide a more accurate estimation of the  
16 evolution of the emotions involved in a compound and dynamic emotional experience.

17           Second, regarding the potential effect of the compound and dynamic emotional  
18 experience formed by empathy and personal distress on helping behavior, we provoke it by  
19 presenting participants with a feasible case of need, measure it through the combined use of  
20 rating scales and the AES, and finally give the participants an opportunity to help. We can thus  
21 test whether the prevalence of one emotion over the other influences helping behavior and, as we  
22 expect, whether the moment at which such prevalence occurs (i.e., at the beginning, middle or  
23 end of the emotional experience) is an aspect that should be taken into account.

1           To summarize, the AES proved to be a valid and useful measure for discriminating  
2 different patterns formed by the flow of two emotions over a discrete period of time. Empathy  
3 and personal distress are two emotions that (a) usually, if not always, occur together, and (b) may  
4 influence helping behavior. We therefore reasoned that the combined use of AES and rating  
5 scales permits better tracking of the concurrent evolution of these two vicarious emotions  
6 following exposure to a person in need.

7 *The Present Research*

8           In everyday situations, observing a person in need usually provokes the coexistence of  
9 empathy and personal distress, and researchers are interested in analyzing their influence on  
10 helping behavior. We claim that the exclusive use of rating scales causes leads to a dilemma for  
11 researchers: either they can previously manipulate the prevalence of one emotion over the other,  
12 whereby they are consequently altering the natural coexistence involved in the compound,  
13 dynamic emotional experience; or they can let such coexistence occur naturally in order to  
14 subsequently analyze the separate predictive power of each emotion, and therefore have to deal  
15 with the problem raised by their high correlation in the prediction of helping behavior.  
16 Furthermore, regardless of the solution preferred, the rating scales do not permit analysis of the  
17 concurrent evolution of empathy and personal distress.

18           We thus carried out two studies in which the coexistence of the two emotions is  
19 provoked, and then both rating scales and AES were used to analyze whether measuring the  
20 concurrent evolution of those emotions allows a more accurate estimation of the effect of  
21 empathy and personal distress, and their associated motives (altruistic vs. egoistic), on helping  
22 behavior. In Study 1, we used the rating scales to measure the general prevalence of one emotion  
23 over the other, and the AES to measure such prevalence over the course (i.e., beginning, middle



1 and end) of the compound and dynamic experience formed by the two emotions; furthermore, we  
2 used both rating scales and AES to test the effect of the empathy-distress prevalence on helping  
3 behavior. In Study 2, we tested whether the influence of the pattern of prevalence as measured by  
4 the AES on helping behavior is coherent with the different motives theoretically elicited by  
5 empathy and personal distress – that is, directed to increasing either the victim’s welfare  
6 (altruism) or one’s own welfare (egoistic).

7 Study 1

8 In Study 1 participants were presented with a person in need who may elicit both  
9 empathy and personal distress, and were then given the opportunity to help that person. In order  
10 to test how the coexistence of empathy and personal distress influences the prosocial decision,  
11 before knowing about the opportunity to help, participants completed a Feelings Questionnaire  
12 made up of 14 rating scales (see below), and the AES. Based on the research on the empathy-  
13 altruism hypothesis (Batson, 1991, 2011), we expected that helping behavior would be higher  
14 when empathy prevails over personal distress. However, we know that empathy and personal  
15 distress as measured by rating scales provide two single values that are highly correlated, and  
16 this limits the analysis of their influence on helping behavior. We then reasoned that adding the  
17 AES allows us to test whether it is important that empathy prevails over personal distress during  
18 the whole emotional experience, or just at either the beginning or the end of that experience.

19 Method

20 *Participants.* In this Study 77 students participated (13 men and 64 women, with an  
21 average age of 18.76,  $SD = 1.98$ ), all of them from a first-year Psychology degree course at the  
22 Universidad Autónoma of Madrid.

1           *Procedure.* Participants were asked individually by a research assistant to participate in a  
2 study about perception. Those who agreed were escorted to an individual cubicle. They were  
3 then left alone to read an introduction explaining the purpose of the study and to complete the  
4 informed consent document. The introduction explained that the study was being conducted for  
5 the university's student newspaper, so that they would be asked to read one article selected from  
6 one of two proposed columns, "Student Achievements" and "News from the Personal Side." The  
7 research assistant then came into the room carrying a folder containing the article randomly  
8 selected (always the "News from the Personal Side" column). This article included a picture of a  
9 university student named Isabel Toledo and a text which described that she was struggling to  
10 take care of her younger siblings and complete school following the death of her parents in a car  
11 crash. This case was adapted from the one originally created by Batson and colleagues (Batson et  
12 al., 1989; Batson, Early & Salvarani, 1997) and it was used because our past research showed  
13 that it provokes moderately high empathy and moderate personal distress (e.g., Oceja, López-  
14 Pérez, Ambrona, & Fernández, 2009; Studies 2 and 3). Participants spent around 2 minutes  
15 reading the story and looking at the picture.

16           *Rating scales.* After reading the article, participants completed a Feelings Questionnaire  
17 in which they rated on a 7-point scale (1 = *not at all*, 4 = *moderately*, 7 = *extremely*) to what  
18 extent they experienced a set of emotional reactions while reading the article. The empathy index  
19 was formed by averaging the ratings on 8 terms: five words (*warm, compassionate, softhearted,*  
20 *tender, and moved*) and three sentences ("I feel very sorry for her, about the way she's feeling,"  
21 "I feel pity for her over what has happened", and "I feel sympathy for her"). The personal  
22 distress index was formed by averaging the ratings on 6 terms: *worried, distressed, disturbed,*  
23 *upset, troubled, and agitated.* These two indexes were recently adapted and validated to the

1 Spanish context<sup>1</sup> (Oceja & Jiménez, 2007; Oceja, 2008) from those typically used by Batson and  
2 colleagues for assessing these two emotions (e.g., Batson et al., 1983). The Cronbach's alphas  
3 were equal .79 and .78 for empathy and personal distress index, respectively.

4 *The Analogical Emotional Scale.* After completing the emotions questionnaire,  
5 participants were asked to complete the AES. As mentioned previously, in this instrument  
6 participants are asked to represent their subjective emotional experience by drawing two lines in  
7 a space defined by two dimensions (intensity and duration). Each line referred to one of the two  
8 emotions whose evolution over a period of time we wanted participants to indicate. At the  
9 beginning of the study, before presenting the material, a modified version of the AES was used  
10 for explaining how it should be completed (see Appendix). This version was basically the AES  
11 but with blank spaces instead of the emotional terms, and the assistant used it to demonstrate to  
12 participants the idea of the instrument and the completion process. The assistant was trained to  
13 explain this modified version of the AES without suggesting any particular emotional  
14 experience. Two objectives were addressed with the use of these instructions: first, to familiarize  
15 participants with the AES, and second, to ensure that they completed it correctly after reading the  
16 case of the person in need and completing the rating scales<sup>2</sup>.

17 Therefore, after reading the article and completing the rating scales, participants  
18 completed the AES, in which they were required to represent, by drawing two lines on the two-  
19 dimensional graph, how much they had felt empathy and personal distress<sup>3</sup> over a given period  
20 of time. In this way, the AES allows each participant to describe and the researchers to analyze  
21 which emotion prevails over the other at the beginning, middle, and end of the emotional  
22 experience<sup>4</sup>.

1           *Helping Decision.* After reading the article and completing the rating scales and the AES,  
2 participants opened the door and the assistant came into the room and gave them an envelope,  
3 saying “I almost forget that the lead researcher asked us to give this envelope to the participant  
4 who read this article. Please, before completing this questionnaire open the envelope and read the  
5 letter inside.” The letter explained that the participant was offered the opportunity to help Isabel  
6 Toledo by assisting her in mailing as many letters as possible to different institutions for  
7 requesting financial support. The letter concluded by saying that the decision was confidential,  
8 and participation in the experiment did not oblige the participant to accept the proposal to help.  
9 Attached to the letter was the Helping Form, in which participants read that if they wanted to  
10 help Isabel they had only to specify the number of hours they were willing to offer, give their  
11 telephone number, put the Form back in the envelope, and seal it. On the form it was explicitly  
12 stated that participation in the study in no way implied an obligation to help, so that those who  
13 decided not to commit themselves should simply leave it blank.

14           Once participants had made their decision, they opened the door and the research  
15 assistant went in and debriefed them. All participants were given the opportunity to change their  
16 decision after being told about the study, but none of them did so.

### 17 Results and Discussion

18           *Rating scales.* The article elicited higher empathy ( $M = 4.61, SD = 1.03$ ) than personal  
19 distress ( $M = 3.20, SD = 1.20$ ),  $t(76) = 11.39, p < .0001$ ; and empathy and personal distress  
20 significantly correlated with each other,  $r(75) = .54, p < .0001$ . There were no differences  
21 between men and women in empathy ( $M_s = 4.21$  and  $4.69$ , respectively) and personal distress  
22 ( $M_s = 2.83$  and  $3.27$ , respectively),  $t_s(75) < 1.53, p_s > .13$ . For the sake of simplicity, unless  
23 otherwise stated the statistical tests are reported two-tailed, even for directional predictions.

1           Regarding the helping decision, both empathy and personal distress significantly  
2 correlated with the number of hours offered to help Isabel ( $\log_{10}$  transformed);  $r_s(75) = .26$  and  
3  $.25$ , respectively,  $ps < .03$ . When the reports of these two emotional experiences were included in  
4 the regression equation as predictors of the helping behavior, the equation significantly predicted  
5 such helping behavior [ $R^2_c = .06$ ,  $F(2, 74) = 3.42$ ,  $p < .04$ ], but neither empathy nor personal  
6 distress reached a significant beta weight ( $\beta_s = 0.17$  and  $0.16$ , respectively,  $ps > .20$ ). We  
7 repeated the analyses with only the two items of the rating scales used as references in the AES  
8 (*moved* and *distressed*). These items significantly correlated with each other,  $r(75) = .57$ ,  $p <$   
9  $.0001$ ), and with the helping decision;  $r_s(75) = .26$  and  $.27$ , for *moved* and *distressed*,  
10 respectively,  $ps < .03$ . Furthermore, when they were included in the regression equation as  
11 predictors of the helping behavior, the model was once again significant [ $R^2_c = .06$ ,  $F(2, 74) =$   
12  $3.60$ ,  $p < .04$ ] but not the predictors ( $\beta_s = 0.16$  and  $0.17$ , for *moved* and *distressed*, respectively,  
13  $ps > .20$ ). Therefore, the results obtained through rating scales showed that overall empathy and  
14 personal distress significantly predicted the helping behavior, but their mutual correlation did not  
15 make it possible to accurately assess their separate influence on helping behavior.

16           We also tested whether the predominance of one emotion over the other as obtained  
17 through the rating scales influenced helping behavior. Two groups were created by subtracting  
18 the two indexes (i.e., those who reported higher empathy than distress, and the opposite); nobody  
19 presented equal levels of empathy and personal distress in these indexes. The results did not  
20 show significant differences for the percentage of people who accepted to help within each  
21 group: 41 out of 66 (62.1%) for higher-empathy and 8 out of 11 (72.7%) for higher-distress,  $\chi^2$   
22  $(1, 77) = 0.45$ ,  $p > .49$ . Nor were there significant differences for the average hours offered by

1 each group:  $M_s = 0.77$  and  $0.73$  for higher-empathy and higher-distress, respectively,  $F(1, 75) =$   
2  $0.041, p > .84$ .

3 *Analogical Emotional Scale.* The two lines drawn on the two-dimensional graph (i.e.,  
4 intensity and duration) included in the AES indicate how one emotional reaction prevails over  
5 the other at the beginning, middle, and end of the emotional experience. In order to obtain these  
6 data, for each of these three points in the course of the emotional experience, two judges, blind to  
7 the hypothesis, coded the data in three categories: no clear prevalence of one emotion over the  
8 other (i.e., the two lines drawn were at the same level on the vertical axis of intensity), and a  
9 clear prevalence of either empathy or personal distress (i.e., lines at different level of intensity).  
10 Inter-judge reliability of these two coders was significant (Cohen's Kappa =  $.92, p < .001$ ), and  
11 the few disagreements were solved by subsequent discussion. Additionally, in order to test the  
12 coherence between the information offered by the rating scales and the AES about the intensity  
13 of the two emotions, we obtained the correlations of the two values of empathy and personal  
14 distress indexes (rating scales) with the average value of moved and distressed across the three  
15 temporal moments (AES). These correlations were significant,  $r(71) = .57$  for empathy  
16 index/average moved and  $r(71) = .81$  for personal distress index/average distressed,  $ps < .001$ .

17 The aim of using the AES was to analyze whether considering the three moments of the  
18 emotional experience (beginning, middle, and end) provides a better understanding of the  
19 influence of empathy and personal distress on helping behavior. Therefore, for each of the three  
20 moments of the emotional experience, we divided those 73 participants who completed the AES  
21 (see Note 2) into the three prevalence groups, and analyzed the proportion of those who decided  
22 to help within each group. Table 1 presents the results of this analysis. The Chi-square tests did  
23 not reveal a significant effect for such prevalence either at the beginning [ $\chi^2(2, 73) = 2.68, p >$

1 .26] or in the middle of the experience [ $\chi^2(2, 73) = 1.08, p > .58$ ], but they did reveal a  
 2 significant effect at the end of the experience [ $\chi^2(2, 73) = 8.35, p < .02$ ]. Specifically, regarding  
 3 this significant effect, higher proportions of helping behavior were found among those  
 4 participants whose drawings showed that *moved* either equaled (.83) or prevailed over *distressed*  
 5 (.69) than among those participants whose drawings showed that *distressed* prevailed over  
 6 *moved* (.37). The Chi-square tests showed that the groups of “prevalence of *moved*” and “no  
 7 prevalence” did not significantly differ from each other [ $\chi^2(1, 57) = 1.26, p > .26$ ], but they both  
 8 significantly differed from the “prevalence of *distressed*” group [ $\chi^2(1, 55) = 4.76$  and  $\chi^2(1, 34) =$   
 9  $7.53, ps < .03$ ].

10       Very similar results were found when the number of hours offered for helping Isabel was  
 11 used as dependent variable ( $\log_{10}$  transformed). Regarding the end of the experience, the  
 12 ANOVA showed that when *moved* either equaled or prevailed over *distressed*, then significantly  
 13 more hours were offered ( $M = .24, SD = .16$ ) than when *distressed* prevailed over *moved* ( $M =$   
 14  $.13, SD = .18$ ),  $F(1, 71) = 5.47, p < .03, \eta^2 = .072$ . Regarding the beginning and the middle of  
 15 the experience, the ANOVAs did not reveal significant differences between these patterns of  
 16 prevalence;  $F(1, 71) = 2.52$  and  $0.08, ps > .11$ , respectively. Furthermore, the prevalence  
 17 patterns as measured through the rating scales did not show significant differences:  $M = .22$  and  
 18  $SD = .17$  when empathy either equaled or prevailed over distress, whereas  $M = .17$  and  $SD = .19$   
 19 when distress prevailed over empathy,  $F(1, 75) = 0.50, p = .48$ .

20                                   PLEASE INSERT TABLE 1

21       To summarize, the results of Study 1 show that obtaining data through the AES allows  
 22 the tapping of a significant effect that was overlooked by the rating scales: helping behavior was  
 23 lower among those participants who reported that *distressed* prevailed over *moved* *at the end of*

1 *their emotional experience*. This result shows the relevance of measuring the emotional  
2 experience as formed by two emotions (compound) whose pattern of prevalence may change  
3 over the course (beginning, middle, end) of the experience (dynamic).

4 Study 2

5 Regarding the analysis of the differences between empathy and personal distress, as  
6 shown in Study 1, AES allows the person to provide a better description of an experience that  
7 involves the presence of two emotions over a specific period of time. Therefore, the AES adds  
8 the advantage of providing a richer measure of both the coexistence and prevalence of two  
9 closely related but different emotions. Indeed, the results of Study 1 suggest that the  
10 predominance of one emotion over the other at the end of experience significantly influences  
11 helping behavior.

12 The objective of Study 2 was to test whether such influence of the pattern of prevalence  
13 at the end of the experience is coherent with the nature of the motive evoked by empathy and  
14 personal distress; that is, directed to increasing either the victim's welfare (altruism) or one's  
15 own welfare (egoistic). To this end, we presented participants with a case of clear need,  
16 manipulated the (psychological) escape, measured the emotional experience through both rating  
17 scales and AES, and offered an unexpected opportunity to help the person in need. Therefore,  
18 instead of following the usual strategy of manipulating the quality of the emotional experience  
19 (i.e., prevalence of empathy vs. personal distress), we provoked the compound and dynamic  
20 emotional experience formed by empathy and personal distress, measured it by using both the  
21 rating scales and the AES, and subsequently compared those who reported opposite patterns of  
22 prevalence: personal distress over empathy vs. empathy over personal distress. Guided by the  
23 results of Study 1 and based on the aforementioned previous research about the different motives



1 evoked by these two emotions, our hypothesis was that the lowest percentage of helping will be  
2 found when (a) personal distress prevails over empathy at the end of the emotional experience,  
3 and (b) it is relatively easier to escape from the situation.

4 Method

5 *Participants.* In this Study 95 students participated (15 men and 80 women with an  
6 average age of 20.31,  $SD = 5.26$ ) from a first-year Psychology degree course at the Universidad  
7 Autónoma of Madrid. Three participants were excluded and replaced because they either showed  
8 doubts about the procedure during the debriefing or did not adequately complete the measures  
9 (see Note 2). A random 48 participants (8 men and 40 women) were assigned to the easy escape  
10 condition and 47 participants (7 men and 40 women) to the difficult escape condition.

11 *Procedure.* The procedure in Study 2 was similar to that in Study 1, except that the  
12 stimuli were presented as pilot broadcasts created by the Foundation Quality of Life, the need  
13 situation was different, and a manipulation of easiness of escape was included. Participants were  
14 run individually. Once they had read the Introduction and signed the consent statement, they all  
15 received a letter describing the same target in the same need situation. The letter described a 7-  
16 year-old boy, Pedro, who was suffering from a genetic neurological defect, and detailed his  
17 struggle living with the condition and his parents' attempt to secure appropriate medical  
18 treatment. Straight after reading the letter, the information about Pedro's experience was  
19 presented by a broadcaster who introduced a brief clip of an audio interview (1 minute and 45  
20 seconds) in which Pedro personally described his situation to a female interviewer.

21 *Manipulation of escape.* In the easy escape condition, participants listened to a version of  
22 the interview in which Pedro described the symptoms of his illness (e.g., intense headaches and  
23 often vomiting) and finished by saying that "Right now I do not feel that bad. I can play soccer

1 with my friends and go out skating. I hope everything goes fine.” In contrast, in the difficult  
2 escape condition, participants were presented with an X-ray image of Pedro’s head while they  
3 listened to the interview of Pedro. Stocks, Lishner, and Decker (2009) recently showed the  
4 relevance of considering the perceived ease of psychological escape, instead of just the physical  
5 escape; that is, the extent to which the observers perceive that their awareness of the victim’s  
6 suffering would remain after leaving the situation. We thus reasoned that presenting the visual,  
7 vivid information would increase participants’ expectations of the extent to which they will  
8 remain thinking about Pedro’s case after leaving the study.

9 *Measuring emotional reaction and Helping Decision.* After listening to the broadcasting,  
10 participants completed a questionnaire that contained the 7-point (1 = *not at all*, 4 = *moderately*,  
11 7 = *extremely*) rating indexes used in Study 1, the 8-item empathy index ( $\alpha = .88$ ) and the 6-item  
12 personal distress index ( $\alpha = .88$ ), together with the Analogical Emotional Scale (AES). After  
13 completing these measures, participants were presented with the unexpected opportunity to help  
14 Pedro. Regarding these aspects, the procedure was identical to that described in Study 1.

15 *Manipulation checks.* Once they had made their decision participants were asked to  
16 complete one last questionnaire that included measures about their perception of the interview:  
17 “How interesting was the broadcast?”, “How serious was the problem presented?”; “How  
18 [vulnerable, likeable, innocent] was the victim?”, together with a final question about their  
19 expectation of the extent to which they will think about Pedro’s case after leaving the study. The  
20 objective of these questions was to check that participants in both conditions differed only in the  
21 manipulated variable: perceived ease of psychological escape.

22 *Hypothesis.* We predicted a 1-vs-3 pattern, which involves three hypotheses. First, that  
23 those participants who reported a prevalence of personal distress and were in the easy-escape

1 condition would show a percentage of helping significantly lower than the other three conditions  
2 taken together. Second, that the pattern of empathy-distress prevalence would not lead to  
3 significant differences in the difficult escape conditions because helping is the only way to  
4 alleviate the other's suffering (prevalence of empathy) or their own discomfort (prevalence of  
5 personal distress). Third, that the escape manipulation would not lead to significant differences  
6 because the goal is to increase the victim's welfare (altruism). Furthermore, using both rating  
7 indexes and the AES allowed us to compare the sensitivity of each measure to tap this 1-vs-3  
8 pattern.

### 9 Results and Discussion

10 *Effectiveness of the escape manipulation.* The last questionnaire contained a set of  
11 questions related to the perception of the situation. All the questions were answered on a 7-point  
12 scale. As intended, our escape manipulation (easy vs. difficult) did not produce significant  
13 differences in relation to interest level of the broadcast ( $M_s = 4.83$  and  $5.11$ ) or seriousness of the  
14 problem ( $M_s = 5.96$  and  $5.98$ ), or how vulnerable ( $M_s = 5.52$  and  $5.50$ ), likeable ( $M_s = 5.46$  and  
15  $5.50$ ) and innocent ( $M_s = 6.00$  and  $5.93$ ) the victim was;  $t_s(90) < 1.05$ ,  $p_s > .25$ . Nevertheless, in  
16 line with our manipulation, participants in the difficult-escape condition reported that they  
17 "expected to think about Pedro's case after leaving the study" to a higher extent ( $M = 3.22$ ,  $SD =$   
18  $1.67$ ) than did participants in the easy-escape condition ( $M = 2.59$ ,  $SD = 1.48$ ),  $t(90) = 1.91$ ,  $p <$   
19  $.03$  (one-tailed).

20 Importantly, the difficult vs. easy escape manipulation did not generate significant  
21 differences in the reported empathy ( $M_s = 5.05$  and  $4.87$ , respectively,  $t < 1$ ) or the personal  
22 distress ( $M_s = 3.04$  and  $3.23$ , respectively,  $t < 1.10$ ). These two indexes significantly correlated

1 with each other in both the difficult and easy escape conditions:  $r(45) = .29$  and  $r(46) = .49$ ,  $ps <$   
2  $.05$ .

3 *Emotional Experience and Helping Decision.* Overall, participants felt moderate-high  
4 empathy and moderate-low personal distress ( $Ms = 4.96$  and  $3.14$ ;  $SDs = 1.06$  and  $1.33$ ), with a  
5 significant difference between the two,  $t(94) = 13.30$ ,  $p < .001$ . Actually, most participants (88  
6 out of 95, 92.6%) reported a higher value in the empathy index than in the personal distress  
7 index. Men and women did not significantly differ in empathy ( $Ms = 4.52$  and  $5.04$ ,  $t(93) = 1.79$ ,  
8  $p > .05$ ) and personal distress ( $Ms = 2.79$  and  $3.20$ ,  $t(93) = 1.79$ ,  $p > .25$ ).

9 We tested the relationship between the emotional reaction and the decision to help Pedro  
10 using both the rating scales and AES. Regarding the rating scales, regression analyses, including  
11 as criteria the number of hours offered ( $\log_{10}$  transformed), and as predictors the indexes of  
12 empathy and personal distress calculated from rating scales, were not significant:  $R^2_c = .048$  and  
13  $.074$ ,  $F(2, 44) = 2.02$  and  $F(2, 45) = 2.86$  in difficult and easy escape conditions, respectively,  $ps$   
14  $> .05$ . We then created a prevalence index by subtracting personal distress from empathy, and  
15 again the results showed that this new index did not significantly correlate with the helping  
16 decision in the difficult and easy escape conditions,  $\beta_s = -0.10$  and  $-0.21$ ,  $ts < 1.50$ ,  $ps > .15$ .  
17 Therefore, the rating scales did not show a significant influence of the two emotions on the  
18 helping decision within each condition, either taken separately or analyzing the prevalence  
19 pattern. We then turned our attention to the data obtained through the AES.

20 As was shown in the analyses of Study 1, the AES allows participants to describe how  
21 the two relevant emotions (i.e., distressed and moved) evolve over the course of the compound  
22 emotional experience. Regarding the information obtained through the AES about the intensity  
23 of the two emotions, once again the correlations between empathy index/average moved and

1 personal distress index/average distressed were significant,  $r_s(90) = .41$  and  $.45$ , respectively,  
2  $p_s < .001$ . Therefore, by coding the data through the same procedure as described in Study 1, we  
3 were able to divide the sample into two groups: those 26 participants whose drawings showed  
4 that *at the end of their emotional experience* they felt more distressed than moved, and those 69  
5 participants whose drawings showed that *at the end of their emotional experience* they felt more  
6 moved than distressed<sup>5</sup>. Table 2 presents the percentages of participants from each group who  
7 helped in the difficult and easy escape conditions. As can be seen, in line with the predicted 1-vs-  
8 3 pattern, the lowest percentage was found in the prevalence-distressed/easy-escape cell (14%, 2  
9 of 14). The Log-linear analysis showed that this cell significantly differed from the other three  
10 taken together,  $z = 2.06$ ,  $p < .04$ . Furthermore, a Chi square test showed that within the difficult  
11 escape condition the percentages of helping in the prevalence-distressed and prevalence-empathy  
12 were not significantly different (42% vs. 57% ,  $\chi^2(1, 47) = 0.86$ ,  $p > .35$ ); nor were there  
13 differences within the prevalence-empathy conditions between the easy- and difficult-escape  
14 conditions (41% vs 57%,  $\chi^2(1, 69) = 1.75$ ,  $p > .18$ ). Regarding the effect of gender on helping,  
15 the Log-linear analysis showed that it did not have a main effect ( $z = 1.24$ ) or interaction with the  
16 emotional prevalence and escape variables,  $z_s < .70$ .

17         The planned comparison of the 1-vs-3 pattern using as dependent variable the number of  
18 hours offered ( $\log_{10}$  transformed) paralleled the aforementioned results, showing that the  
19 prevalence-distressed/easy-escape participants offered a number of hours ( $M = .18$ ,  $SD = .40$ )  
20 that was significantly lower than the number offered in the other three other conditions taken  
21 together ( $M_s = .45$ ,  $.48$  and  $.53$ ;  $SD_s = .65$ ,  $.59$  and  $.78$ ;  $M_{\text{average}} = .48$ ,  $SD_{\text{average}} = .64$ );  $t(29.26) =$   
22  $2.19$ ,  $p < .05$  according to the different variances between conditions). Finally, no significant  
23 effects were found when this 1-vs-3 planned comparison was carried out for each of the other

1 two temporal moments:  $ts < 1.15$ ,  $ps > .25$ , at the beginning and in the middle of the emotional  
2 experience, respectively).

3 PLEASE INSERT TABLE 2

4 To summarize, the exclusive use of the rating scales would have led us to conclude that  
5 the situation merely provoked a prevalence of empathy over personal distress. Nevertheless, in  
6 line with our hypothesis, the use of AES showed that helping decreases *when the situation allows*  
7 *an easy escape and personal distress prevails over empathy at the end of the emotional*  
8 *experience (middle and end)*. As mentioned previously, this pattern obtained through the AES is  
9 coherent with the results obtained in previous research on motivation and helping.

10 General Discussion

11 Taken together, the results of these two studies support three conclusions. First, besides  
12 considering empathy and personal distress as two separate and different emotional experiences, it  
13 can also be fruitful to take a more holistic perspective by considering the entire compound and  
14 dynamic emotional experience they make up. Second, the design and use of the AES reveal that  
15 empathy and personal distress may co-evolve very differently over the course of such an  
16 emotional experience. Third, being able to measure such co-evolution (from the beginning to the  
17 end of the experience) may allow tapping processes that might be overlooked when only rating  
18 scales are used.

19 The use of the AES to measure an emotional experience elicited by presenting a person in  
20 clear need allowed us to tap two effects. First, the results of Study 1 showed that helping  
21 behavior is lower when, over the course of the compound and dynamic emotional experience,  
22 personal distress ends up prevailing over empathy. Second, in line with previous research on the  
23 nature of the motive evoked by each emotion (Batson, 2011 for a review), the results of Study 2

1 suggest that this lower value is due to the egoistic motive elicited by personal distress; that is, if  
2 personal distress prevails over empathy the ultimate goal will be to alleviate one's own  
3 discomfort, so that helping will be high if the situation leads us to think that the discomfort will  
4 last unless we help (difficult escape); however, helping will be low we think that the discomfort  
5 will just vanish by leaving the situation (easy escape). On the other hand, if empathy prevails  
6 over personal distress the ultimate goal will be to alleviate the victim's suffering, so that helping  
7 will not be affected by the perceived ease of psychological escape. Regarding this effect, in the  
8 present work, in which the prevalence of one emotion over the other was led to occur naturally,  
9 the summary of continuous experiences resulting from rating scales showed that the victims  
10 (Isabel and Pedro) elicited moderately high empathy and moderately low personal distress.  
11 Additionally, when participants were given the opportunity to describe better their compound  
12 and dynamic emotional experience, the data obtained through the AES in Study 1 and 2 showed  
13 that finding out whether empathy or personal distress prevailed *at the end of the emotional*  
14 *experience* emerged as a key factor for predicting helping behavior. Moreover, in line with  
15 previous research on the altruistic and egoistic motives that these emotions elicit (Batson, 2011),  
16 the results of Study 2 showed that another key factor is the extent to which the situation leads us  
17 to perceive that is easy to escape psychologically from the situation (Stocks et al., 2009).

#### 18 *Limitations and Future Directions*

19 It is important to stress that we do not reject the use of rating scales as a useful and  
20 necessary measure. On the contrary, we think that the two types of measures can and should  
21 complement each other with a view to improving our understanding of compound and dynamic  
22 emotional experiences. There are at least four pending tasks with regard to this issue. First, the  
23 lines drawn by participants on the AES show different patterns of the concurrent evolution of

1 empathy and personal distress that can be analyzed more thoroughly. For instance, does personal  
2 distress begin by prevailing over empathy to end up being overpowered by it? Does empathy  
3 start by prevailing over personal distress, but in the end the two are at the same level? Do the two  
4 start at the same level and one ends up prevailing over the other? Previous research (Oceja &  
5 Carrera, 2009) has shown that the AES allows the discrimination of at least four patterns in  
6 relation to the co-evolution of two emotions: sequential, prevalence, inverse and highly  
7 simultaneous. In the present research we focused on analyzing whether consideration of (a) the  
8 moment of the emotional episode at which one emotion prevails over the other, and (b) the  
9 motive elicited by such prevalence are relevant factors for the prediction of helping behavior.  
10 Future research should address whether considering the different patterns of how two emotions  
11 flow through the emotional episode can improve such predictions.

12         Second, the lines drawn by participants on the AES show that each emotion presents “ups  
13 and downs” on the (vertical) dimension of intensity as it flows along the (horizontal) dimension  
14 of duration. In this research we focused on the qualitative relationship between the two emotions  
15 – which one prevails over the other; future research should address changes in intensity and their  
16 association with the global evaluations that participants provide through the corresponding rating  
17 scale. Transforming lines into numbers is not an easy task, especially when they present high and  
18 low peaks (for a precedent in this kind of analysis, see Sonnemans and Frijda, 1994), but it is  
19 also a challenging and promising one that may shed new light on the behavioral consequences of  
20 a compound and dynamic emotional experience.

21         Third, the AES as a paper-pencil measure is a low-cost procedure which offers interesting  
22 data about the emotional changes over a period of time. These promising results found from  
23 working on prevalence patterns mean that we can recommend it for future research on complex



1 emotions. However, we should point out that the use of graphic measures may involve  
2 substantial difficulties related to the process of translating continuous drawn lines into discrete  
3 quantitative data. Future research should combine analogical measures and technology in order  
4 to offer new procedures for collecting and analyzing dynamic data.

5       Finally, the results of the two studies concur in showing the special relevance of the  
6 prevalence pattern at the end of the emotional episode. On the one hand, as mentioned above,  
7 previous research has already shown that empathy and personal distress are two distinct  
8 emotions that elicit different motives (altruism vs. egoism), so that the predominance of one over  
9 the other may influence helping behavior. On the other hand, regarding the relevance of the *end*  
10 *of the experience*, previous studies have shown that people's global evaluations of past affective  
11 episodes can be well predicted by either the highest affect during the episode or the affect  
12 experienced at the end of the episode ("peak and end rule" proposed by Fredrickson, 2000);  
13 however, to the best of our knowledge, there is as yet no theory that adequately explains the  
14 behavioral effect found for the end of the emotional experience. One could hypothesize that the  
15 person's motivational state closest to the moment at which the decision is made will be the most  
16 influential, but future research should test this hypothesis thoroughly. Although the present  
17 research cannot provide answers to all of these questions directly, it does lay the foundations for  
18 future research in which the combined use of rating scales and analogical measures can help us  
19 to broaden the study of the compound and dynamic emotional experience formed by empathy  
20 and personal distress.

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1

2 Notes

3 <sup>1</sup> For the reader's convenience the terms were translated into English. The original terms in  
4 Spanish were: afectuoso, compasión, bondadoso, ternura, conmovido, Siento mucho como lo  
5 puede estar pasando, Me da pena lo que le ha ocurrido, Tengo simpatía por esta persona (for  
6 empathy); molesto, estresado, incómodo, enfadado, irritado y agitado (for distressed).

7 <sup>2</sup> In Studies 1 and 2, only 4 out 77 (5%) and 3 of 95 (3%) participants failed to complete the  
8 AES.

9 <sup>3</sup> As empathy and personal distress are two technical terms with which participants may not be  
10 familiar, we selected *moved* (conmovido) and *distressed* (estresado) to refer to the emotions they  
11 were asked to represent on the AES. In Spanish, these two terms are widely used in common  
12 language; moreover, previous research shows that they usually present the highest correlations  
13 with the empathy and personal distress indexes. This was actually the case in Study 1 [ $r_s(75) =$   
14  $.62$  and  $.69$ , respectively] and Study 2 [ $r_s(93) = .74$  and  $.75$ , respectively] of this research.

15 <sup>4</sup> It is worth bearing in mind that our interest is not focused on the specific levels of intensity  
16 presented by each separate emotion over a given period of time. Such information could be  
17 obtained by offering participants the rating scales at three time points in the course of the  
18 emotional experience (i.e., its beginning, middle, and end). However, this procedure differs from  
19 ours in two aspects: it breaks at three time points the spontaneous feeling of the compound  
20 emotional experience, and it focuses on the intensity of each emotion at three specific moments,  
21 rather than on how they flow over the continuous course of the emotional experience. Instead of  
22 focusing on the intensity, we focused on which emotion prevails over the other at the beginning,  
23 in the middle and at the end of the emotional experience.

1 <sup>5</sup>In order to overcome the problem of Log-linear analyses with several expected values below 5,  
2 we opted for a 2 (escape: easy vs. difficult) x 2 (prevalence: empathy vs. personal distress)  
3 design. Therefore, we did not include the no-prevalence pattern in the coding instructions;  
4 instead, for each participant's report on the AES we asked the coders to indicate which emotion-  
5 line was above the other at the beginning, in the middle and at the end. Inter-judge reliability of  
6 these two coders was significant (Cohen's Kappa = .95,  $p < .001$ ).

7

8

1 Table 1. Percentage (and number) of participants who decided to help (Study 1).

	Empathy over Personal Distress	No Prevalence	Personal Distress over Empathy
Beginning	67 (27 of 40)	76 (13 of 17)	50 (8 of 16)
Middle	71 (27 of 38)	58 (14 of 24)	64 (7 of 11)
End	69 (27 of 39)	83 (15 of 18)	37 (6 of 16)

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1 Table 2. Percentage (and number) of participants who helped in each condition (Study 2).

	Easy Escape	Difficult Escape
Prevalence of Distress %	14 (2 of 14)	42 (5 of 12)
Prevalence of Empathy %	41 (14 of 34)	57 (20 of 35)

2 Note. The two “emotion” groups correspond to the end of the emotional experience as measured

3 by AES.

4



1

Appendix

2 (Part I)

3

4 If you have felt both the emotions of xxxxx and xxxxx, please represent your emotional  
5 experience as follows:

6

7 - The emotion of XXXXX will be represented by a solid line ( ————— )

8 - The emotion of XXXXX will be represented by a dotted line ( ..... )

9 - In the figure presented below, the horizontal dimension refers to the duration of the emotion  
10 and the vertical dimension refers to the intensity of that emotion.

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20 If RAIN were the solid line and SUN the dotted line, the following weather situation could be  
21 represented as follows:

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23 Situation 1: It started to rain a lot but it ended up easing off until the sun started to shine slightly.

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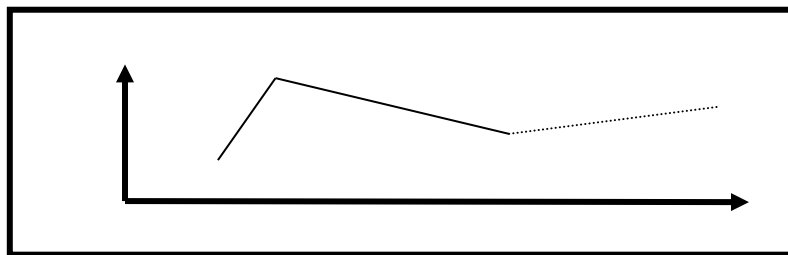
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30 Situation 2: It was raining a little for a long time while the sun was shining intensely.

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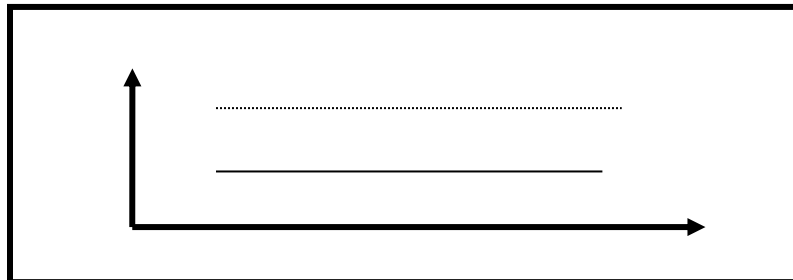
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Empathy-Distress and Helping Behavior

1 (Part II)


2

3 If you have felt both the emotions of moved and distress, please now represent (draw) your  
4 emotional experience:

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6 - The emotion of MOVED will be represented by a solid line 

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8 - The emotion of DISTRESSED will be represented by a dotted line 

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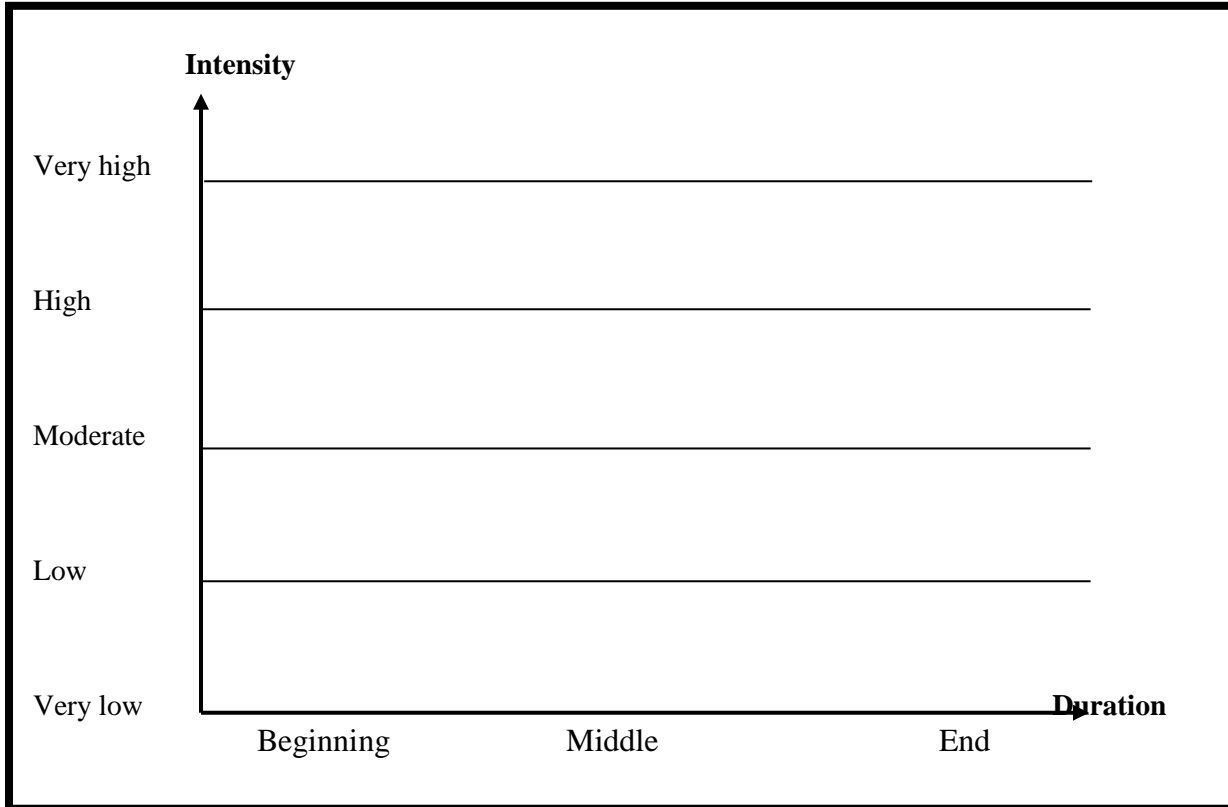
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