Measuring general dispositions to feeling empathy and distress

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The Vicarious Experience Scale (VES) is a new measure aimed at measuring the disposition to feeling empathy and personal distress. In Study 1, participants completed the VES along with the classic measure of Interpersonal Reactivity Index (IRI). In Studies 2 and 3, participants observed the case of a person in need and subsequently reported the elicited emotions of empathy and personal distress; participants filled in the VES either a few minutes later (Study 2) or three months before the presentation of the case (Study 3). The results supported both the convergent validity of the VES and its capacity in a specific situation.

Midiendo la disposición general a sentir empatía y estrés. La Escala de Experiencias Vicarias (VES) es un nuevo instrumento diseñado para medir la disposición personal a sentir empatía y estrés. Los participantes del Estudio 1 completaron el VES junto con la medida clásica del Interpersonal Reactivity Index (IRI). A los participantes de los Estudios 2 y 3 se les presentó el caso de una persona que había sufrido un grave problema, y posteriormente informaron del grado en que dicho caso les había provocado empatía y estrés. Estos participantes completaron el VES unos minutos después (Estudio 2) o tres meses antes de que se les presentara el caso (Estudio 3). Los resultados apoyaron la validez convergente del VES y su capacidad para predecir el grado de empatía y estrés provocados por una situación concreta.

In the 1980s, two lines of research paid special attention to the difference between the constructs of empathy and personal distress. One line considered these two constructs as personal dispositions that transcend different contexts, and the other as emotions elicited in specific situations. Mark Davis and Daniel Batson are two of the authors who best represent the first (Davis, 1983a, 1983b; Davis, Hull, Young, & Warren, 1987) and second lines of research (Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983; Batson, Fultz, & Schoenrade, 1987), respectively.

Differentiating the constructs of empathy and personal distress

At first sight, empathy and personal distress can be easily confounded, and for at least three reasons. First, research considering these two constructs as emotions found that both (a) are elicited by the situation of perceiving a person in need, (b) are usually reported as occurring simultaneously, and (c) may lead to an increase in helping behaviour (for a review, see Batson et al., 1987). Second, initial research that explicitly addressed the construct of empathy as a dispositional tendency defined it in a very general way, more related to general emotionality (Mehrabian &

Epstein, 1972) and, indeed, found it to be associated with the emotional reactions of both empathy and personal distress (Archer, Díaz-Loving, Gollwitzer, Davis, & Foushee, 1981). Third, as Batson et al. (1987) already stated, before the 1980s those approaches focusing on the emotional meaning of «empathy» defined it as either (a) feeling any vicarious emotion, (b) feeling the same emotion as another person is feeling, or (c) feeling a vicarious emotion that is congruent with but not necessarily identical to the emotion of another (for a more extensive review, see Wispé, 1986). Consequently, those approaches led researchers to consider «empathy» as an umbrella concept that would cover the emotions of both empathy and personal distress.

After thirty years of research the conceptual distinction between these two constructs is neater. Regarding the perspective that considers them as emotions, Batson and associates have obtained and reviewed empirical evidence that feelings of empathy and personal distress are two distinct types of vicarious emotion; that is, emotions congruent with another person's state –in this case, a person in need. Specifically, these researchers claim that empathy is a *neutral* or *relatively pleasant other-oriented* emotion that evokes the altruistic motivation to reduce the other's need, whereas personal distress is an *unpleasant self-oriented* emotion that evokes the egoistic motivation to reduce one's own aversive arousal.

Regarding the perspective that considers them as dispositions, Davis acknowledged the value of the «personal distress vs. empathy» distinction, and incorporated it in the design of the Interpersonal Reactivity Index (IRI); a 28-item self-reported questionnaire that has become a classic measurement for a set of general dispositions related to the general topic of empathy.

Following a multidimensional approach that distinguishes between cognitive and affective components, the IRI consists of four 7-item subscales: Perspective-Taking, Fantasy, Empathic Concern and Personal Distress (for a full description see Davis, 1996, pp. 55-57). According to Davis, the Perspective-Taking and Fantasy subscales are mainly related to the cognitive component of empathy, and the Empathic Concern and Personal Distress subscales to the affective component.

Davis and associates conducted a set of studies to test the validity of the IRI; two of these studies are especially relevant for the purposes of the present work. In the first study (Davis, 1983a), participants first completed the IRI and few months later listened to a tape-recording describing a senior student at the university whose parents were recently killed in a tragic accident; subsequently, these participants filled out a questionnaire that measured the emotions of empathy and distress. Davis found that the Empathic Concern subscale was related to the elicited emotions of empathy and distress (*r*s= .28 and .24, respectively, *p*s<.01; see Table 1 in p. 175), and that the Personal Distress subscale was also related to these two emotions (*r*s= .33 and .29, *p*s<.01; see footnote 4 on p. 178). In the second study (Davis et al., 1987), during the same experimental session participants completed the IRI, watched a set of videotape clips, and filled out a measure of their current mood state. Davis and associates found that those who obtained a high score on Empathic Concern subscale showed a significantly higher level of positive interpersonal feelings toward the character on whom they were asked to focus (p. 130). This result was regarded as a validation of this subscale as a measure of people's tendency to experience sympathetic emotional reactions toward others.

These two studies form part of a broader research project that sets out to test the relationship of the dispositions, previously measured through the IRI, to a set of emotions subsequently elicited in a specific situation (for a review, see Davis, 1996). However, to the best of our knowledge there is not yet enough evidence clearly linking both levels. This work is aimed at adding a new piece of evidence regarding this issue.

The present research

In Study 1, we administered Spanish versions of the Davis' IRI in combination with the Vicarious Experiences Scale (VES). As described below, the VES contains the Sympathy and Vicarious Distress subscales, aimed at measuring the disposition to feel the emotions of empathy and personal distress, respectively. The main goal of Study 1 was to test the convergent validity of these two scales by analyzing the pattern of correlations with the four subscales of the IRI. In Studies 2 and 3, participants were presented with an article describing the case used by Davis (1983a). Immediately after reading the case, participants filled out a questionnaire that included the measures of the emotions of empathy and personal distress elicited by that article. Regarding the measures of the general dispositions, Study 2 participants completed the VES right at the end of the experimental session, and Study 3 participants completed the VES and the IRI at least three months before going into the experimental session. These two studies allowed us to test whether the Sympathy and Vicarious Distress subscales of the VES independently predicted the elicited emotions of empathy and personal distress, respectively. Furthermore, Study 3 allowed us to test the predictive power of these two subscales over and above the predictive power of the subscales included in the IRI.

STUDY 1

Method

Participants and procedure

Three hundred eighty participants (160 men and 220 women, 57% with university degree, age range= 16 to 66, *M*= 32.67, *SD*= 13.85) voluntarily completed the Spanish version of the Interpersonal Reactivity Index (IRI), previously translated and tested in the Spanish context by Pérez-Albéniz, de Paúl, Etxebarría, Montes, and Torres (2003), and Mestre, Frías, and Samper (2004), along with the Vicarious Experiences Scale (VES). As regards the VES, this questionnaire contains the subscales of Sympathy and Vicarious Distress, formed by items aimed at measuring the tendency for experiencing (a) an other-oriented and pleasant vicarious emotional reaction that is congruent with another's situation (e.g., When something good happens to another person, I feel happy; I feel good when people have fun) and (b) a self-oriented and negative vicarious emotional reaction that is elicited by perceiving another person's suffering (e.g., I sometimes suffer over other people's misfortune more than they do themselves; I cannot help to cry with unknown people's sad testimonies), respectively. The VES is part of a broader instrument that included two other subscales: Perspective-Taking, which is very similar to its homonym in Davis' IRI; and Emotional Comprehension, which aims to measure the tendency for trying to find out and understand how another individual is feeling at a specific point in time (López-Pérez, Fernández, & Abad, 2008). These two subscales were not included in the present analyses because they are not relevant to the goal of this work. The Spanish version of the whole instrument was purchased by «TEA

Table 1
Effect of predictor variables in the hierarchical regression analyses on reported feelings of empathy and personal distress: Study 3

	Empathy index		Personal distress index	
	β	t	β	t
Step 1				
Perspective-Taking	-.077	-.40	.287	1.44
Fantasy	.184	1.02	.111	.59
Empathic concern	.353+	2.01	.040	.22
Personal distress	-.072	-.42	-.008	-.04
	R^2= .192		R^2= .138	
Step 2				
Non-expected predictor	.214	1.17	.122	.68
	R^2= .224		R^2= .150	
Step 3				
Expected predictor	.560**	3.57	.443*	2.32
	R^2= .440		R^2= .270	

The Non-expected predictor is Vicarious Distress for empathy and Sympathy for personal distress. The Expected predictor is Sympathy for empathy and Vicarious Distress for personal distress

+ *p*= .051, * *p*<.05, ** *p*<.005

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By counterbalancing the order of presentation, these two questionnaires were presented in a packet format that participants can easily fill out at home. The goal of Study 1 was to test the psychometric characteristics and psychological meaning of the two subscales included in the VES.

Results and discussion

Internal consistency

We first tested whether the 8 and 7 items purporting to measure Vicarious Distress and Sympathy, respectively, were adequately consistent. As both scales refer to the individual tendency to feel a vicarious emotion (i.e., evoked by perceiving a person in need), and their corresponding items are included in the same self-reported questionnaire and followed by a unidirectional rating scale (1= *not at all*, 5= *extremely*), response-sets could easily produce a positive correlation between reports of the two personal tendencies. Principal component analysis can control for these potential confounds in the correlations, since a components analysis using orthogonal rotation reflects systematic, independent patterns within and across individuals' responses. Accordingly, varimax-rotated principal components analyses were performed on participants' responses to the VES. A four factors solution that explained the 37.39% total variance converged in 6 iterations. The pattern of factorial loadings was consistent with the proposed measures: the eight items purporting to measure Vicarious Distress had their highest factorial load on the first orthogonal factor (range of loads= from .39 to .71), and the seven items purporting to measure Sympathy had their highest factorial load on the second orthogonal factor (range= from .38 to .70). The indexes created by averaging the items corresponding to the Vicarious Distress and Sympathy subscales showed adequate internal consistency (αs= .78 and .72, respectively).

Relationships between the individual differences measures

To test the divergent and convergent validity of the Vicarious Distress and Sympathy subscales, we obtained the correlations of the rotated factorial scores corresponding to these subscales with the four subscales of the IRI: Perspective-Taking (α= .72), Fantasy (α= .81), Empathic Concern (α= .71) and Personal Distress (α= .69). We decided to use the rotated factorial scores corresponding to the Vicarious Distress and Sympathy factors in order to preserve the independence between the two; in any case, using the indexes formed by averaging the direct scores on the corresponding eight and seven items showed similar results.

We hypothesized (a) that Vicarious Distress would correlate with Personal Distress because both subscales refers to the disposition for experiencing a *self-oriented* and *negative* vicarious emotional reaction; and (b) that Sympathy would correlate with Empathic Concern and Perspective-Taking because they all are related to the disposition for experiencing an *other-oriented* vicarious emotional reaction. We did not propose any specific hypothesis related to the correlations with Fantasy.

The results showed that the Vicarious Distress factor significantly correlated with the IRI subscales of Personal Distress (r= .230, p= .000) and non-significantly with Perspective-Taking (r= .099, p= .061). Regarding Sympathy, this factor significantly correlated with the IRI subscales of Perspective-Taking (r= .143, p= .007) and Empathic Concern (r= .302, p= .000); and non-significantly with Personal Distress (r= -.05, p= .30). In sum, the overall pattern of correlations supported our three hypotheses. However, we obtained one non-predicted result: the correlation between Vicarious Distress and Empathic Concern was significant (r= .459, p= .000). This can be due to that either one of these two subscales or both have a broader scope that produces this overlap. This possibility is addressed in Studies 2 and 3.

STUDY 2

Method

Participants and procedure

Participants were 44 female undergraduate students at the Universidad Autónoma de Madrid who were at the Psychology building while the study was being run. They were asked individually by a female research assistant to participate in a study about perception. Once they accepted, they were thanked and led to an individual cubicle that was in a laboratory space within the Psychology building. When they had entered the cubicle they were left alone to read an introduction explaining that the study was being conducted on behalf of the university's student newspaper. Therefore, participants would be asked to read one news articles selected from one of two possible columns, «Student Achievements» and «News from the Personal Side.» In reality, all participants received a folder with the «News from the Personal Side» article that included a picture of a university student called Isabel Toledo and a text describing how she was struggling to take care of her younger siblings and complete her studies following the death of her parents in a car crash.

After reading the article, participants reported their emotional reaction while reading the article by filling out a Feelings Questionnaire that included two indexes aimed at measuring the emotions of empathy and personal distress. With regard to the empathy index, it was formed by the Spanish equivalent of five adjectives and three sentences: *softhearted, moved, compassionate, warm* and *tender*, «I feel very sorry for her, feeling that way,» «I feel pity for her over what has happened,» and «I feel sympathy for her». As regards the personal distress index, it was formed by the Spanish equivalent of five adjectives: *upset, distressed, worried, troubled* and *disturbed*. These two indexes are typically used for assessing these two emotions (Batson, Fultz, & Schoenrade, 1987) and were recently adapted to the Spanish context (Oceja & Jiménez, 2007; Oceja, 2008).

Once the participants had completed this Feelings Questionnaire they opened the door and the research assistant came in to ask them to complete the VES. In the debriefing at the end of the study it was checked that no participant had had any doubt or suspicions about the procedure.

Results and discussion

Consistency and means of the reported emotions indexes and the disposition measures

Regarding the reported emotions, ratings of the corresponding terms were averaged to create the scales of empathy (eight terms)

and personal distress (five terms). The Cronbach's α were high for both empathy (α= .86) and personal distress (α= .88). Both indexes were based on a 7-point scale (1= *not at all*, 4= *moderately*, 7= *extremely*); overall the elicited empathy was moderately high (*M*= 5.13, *SD*= 1.01) and the elicited personal distress was moderately low (*M*= 3.65, *SD* = 1.37). As is usual in research on these two emotions (Batson, Fultz, Schoenrade, 1987), these two indexes were positively correlated with one another (*r*= .421, *p*= .004).

As regards as the dispositions measures, the Sympathy and Vicarious Distress subscales were created by averaging the ratings of the corresponding seven and eight sentences, respectively. The Cronbach's α were moderate for both Sympathy (α= .66) and Vicarous Distress (.64). Both measures were based on a 5-point scale (1= *not at all*, 5= *extremely*); overall Sympathy showed a moderately high level (*M*= 4.08, *SD*= .40) and Vicarious Distress a moderate level (*M*= 3.26, *SD*= .56). These two measures correlated significantly with one another (*r*= .395, *p*= .008).

Sympathy and vicarious distress as independent predictors of empathy and personal distress, respectively

We decided to carry out a stringent and appropriate assessment of the contributions that the individual differences tapped by the subscales of the VES make to the prediction of emotional reactions of empathy and personal distress elicited in a specific situation. Hierarchical regression analysis, in which predictor variables are entered in a predetermined order, can be used to assess the predictive power provided by one of the scales (e.g., Sympathy) above and beyond that provided by the other (e.g., Vicarious Distress). In the following analyses this hierarchical strategy was used for the dependent variables of the reported emotions of empathy and personal distress. In this study, the non-expected predictor (i.e., Vicarious Distress for empathy and Sympathy for personal distress) was entered at the first step of each analysis, and the expected predictor (i.e., Sympathy for empathy and Vicarious Distress for personal distress) was entered into the equation at the second step. The net effect of this procedure was to assess the impact of the expected predictor after controlling the impact of the non-expected one. As regards the elicited empathy, the non-expected predictor (Vicarious Distress) entered at step 1 was not significantly related to this emotion, β= .221, *t*(42)= 1.47, *p*= .149, but the expected predictor (Sympathy) entered at step 2, was indeed significantly related to it, β= .451, *t*(41)= 3.00, *p*= .005; moreover, the increase in R^2 resulting from the addition of the expected predictor was significant from step 1 (.049) to step 2 (.221), *F*(1,41)= 9.03, *p*= .005. Regarding the elicited personal distress, the non-expected predictor (Sympathy) entered at step 1 was not significantly related to this emotion, β= .188, *t*(42)= 1.24, *p*= .223, but the expected predictor (Vicarious Distress) entered at step 2, was significantly related to it, β= .522, *t*(41)= 3.58, *p*= .001; once again, the increase in R^2 resulting from the addition of the expected predictor was significant: from step 1 (.035) to step 2 (.265), *F*(1,41)= 12.84, *p*= .001.

In sum, the results of Study 2 supported the separate and independent utility of the Sympathy and Vicarious Distress subscales included in the VES for predicting the elicited empathy and personal distress, respectively. Bearing in mind that participants completed the VES at the end of the experimental session, one may cast doubt about consistency or demand

characteristics effects. One of the goals of Study 3 was to address this issue.

STUDY 3

Method

Participants and procedure

Participants were 40 non-student adults (19 women and 21 men, 67% with university degree, age range= 20 to 62, *M*= 33.58, *SD*= 13.03) randomly chosen from the Study 1 sample. Therefore, they had all already filled out the IRI and VES at least three months before they participated in Study 3.

The procedure for Study 3 was similar to that of Study 2, except that participants were not currently enrolled as students at a university. Also, the materials (Introduction, News Article, and Feelings Questionnaire) were arranged into a packet format that could be easily read by participants. Research assistants went to participants' homes and had them complete the instruments contained in the packet in a separate room.

Results and discussion

Consistency and means of the reported emotions indexes and the disposition measures

Once again the Cronbach's α were high for both empathy (α= .94) and personal distress (α= .94), and overall the elicited empathy was moderate (*M*= 4.12, *SD*= 1.22) and the elicited personal distress was moderately low (*M*= 3.16, *SD*= 1.56). On this occasion these two indexes did not correlate significantly (*r*= .242, *p*= .132).

As regards as the dispositions measures, the Cronbach's α were moderately high for both Sympathy (α= .83) and Vicarous Distress (α= .82), overall both showed moderate levels (*M*= 3.17, *SD*= .90 for Sympathy, and *M*= 3.52, *SD*= .85 for Vicarious Distress), and they did not correlate significantly (*r*= -.004). With respect to the four scales of the IRI, overall the α were moderate: Perspective-Taking (α= .68), Fantasy (α= .86), Empathic Concern (α= .72) and Personal Distress (α= .72).

Predictive power of Sympathy and Vicarious Distress

Study 3 differed from Study 2 in two respects: the participants were male and female non-students, and they had completed the VES and the IRI at least three months before being exposed to the person in need. These differences allowed us to conduct a more stringent test of the predictive utility of the Sympathy and Vicarious Distress subscales (i.e., with a minimum lag of three months between the completion of these subscales and the reports of the emotions after exposure to the person in need), and also to compare such predictive utility with other measures typically used to tap individual differences about the tendency to feel empathy and personal distress (i.e., the four subscales of the IRI).

With the same logic as that used to analyze the Study 2 data, we performed two hierarchical regression analyses, one for each of the two dependent variables: the reported emotions of empathy and personal distress. In order to test the predictive power provided by the new scales (Sympathy and Vicarious Distress of

the VES) above and beyond that provided by the scales of the IRI, on this occasion we conducted 3-step hierarchical regression analyses. In the first step we entered as predictors the four subscales of the IRI; in the second step we entered the non-expected predictor (Sympathy for personal distress, and Vicarious Distress for empathy); and in the third step we entered the expected predictor (Vicarious Distress for personal distress, and Sympathy for empathy). Thus, these analyses allowed us to assess the genuine contribution of the subscales of the VES to explained variation in each of the two elicited empathy and personal distress above and beyond that provided by other plausible predictors. It should be noticed that with these analyses we are not specifically testing the predictive power of these other plausible predictors. That would require introducing the variables in a different order, and is in any case outside the scope of the present work.

As it can be seen in Table 1, in both cases, when the expected predictor was entered into the regression equation at step 3 it was positively and significantly associated with the corresponding reported emotion (Sympathy with empathy, and Vicarious Distress with personal distress). In both analyses, none of the four subscales of the Davis IRI were significantly associated with the reported emotions when they were included at step 1; furthermore, the increase in R^2 resulting from the addition of the non-expected predictor entered at step 2 was not significant (from .192 to .224 for empathy, and from .138 to .150 for personal distress, Fs $(1,34)=$ 1.38 and .46, ps= .248 and .50, respectively), but it was significant when the expected predictor was entered at step 3: from .224 to .440 for empathy, and from .150 to .270 for personal distress; Fs $(1,33)=$ 12.74 and 5.40, ps= .001 and .026, respectively.

In sum, and in line with results of Study 2, the results of Study 3 supported the separate and independent utility of the new disposition subscales (Sympathy and Vicarious Distress) for predicting, respectively, the emotions of empathy and personal distress elicited by observing a person in need. Moreover, on this occasion the test was more stringent in two aspects. First, the participants completed the scales related to the disposition to feel empathy and personal distress at least three months before they were exposed to the person in need, thus ruling out any explanation of the results in terms of either consistency or demand characteristics. And second, the Sympathy and Vicarious Distress scales showed genuine predictive power above and beyond that of other scales typically used to tap such dispositions.

Final discussion

Overall, the results of these three studies support the validity of the Sympathy and Vicarious Distress subscales. First, the results of Study 1 support the convergent validity of these two subscales with those included in the classic Davis' IRI. Second, the results of Studies 2 and 3 go further than such convergent validity. Using two different samples (i.e., female students, and female and male non-student adults) and two different time lags between the completion of the VES and the indexes referring to the situation-specific emotions (i.e., few minutes after, and at least three months before), the results supported the usefulness of Sympathy and Vicarious Distress for predicting empathy and personal distress, respectively. Finally, the results of Study 3 showed that these two new subscales have genuine predictive power above and beyond the IRI. Taken together, these results have methodological and applied implications.

Methodological implications

The Interpersonal Reactivity Index is a widely accepted measure of the personal disposition to feel empathy, being used in different fields such as testing the gender differences in that disposition, prosocial development among teenagers, the inhibitory function of empathy in aggressive behaviour, and so on (for a review, see Eisenberg, 2000; Mestre et al., 2004; Mestre, Samper, & Frías, 2002). This extensive use has led researchers from different countries to translate and adapt the IRI to their respective languages (for the Spanish context, see Mestre et al., 2004; Pérez-Albéniz, 2003). In this work we have followed a different strategy: following the lead set by the seminal works of Davis and Batson, we focused on the important difference between the constructs of empathy and personal distress, and then tested the validity of two new dispositional measures aimed at tapping this difference.

It is noteworthy that the subscales of the VES (i.e., Sympathy and Vicarious Distress) are not proposed as substitutes of two subscales of the IRI (i.e., Empathic Concern and Personal Distress), but rather as complementary measures. The Sympathy and Vicarious Distress subscales were designed with the specific goal of differentiating between the personal dispositions of feeling relatively *positive* and *other-oriented* emotion (empathy) and relatively *negative* and *self-oriented* emotion (personal distress) when one observes a specific person in need. Davis, on the other hand, used a different strategy to create his subscales: Empathic Concern refers to the disposition of feeling concern, compassion, caring, and the like toward people who are under moderate or intense suffering, and Personal Distress refers to the disposition of being overwhelmed by intense and negative feelings when facing emergency situations (e.g., a natural disaster). Obviously, as our results showed, these subscales are closely related to one another; however, we propose that Sympathy and Vicarious Distress may be more useful for tapping the personal disposition of feeling either empathy or personal distress or both when we are led to observe a specific person with a specific need (e.g., a starving child), whereas Empathic Concern and Personal Distress may be more useful for tapping the personal disposition of feeling these emotions when we are faced with intense and highly negative situations (e.g., famine). This proposal opens up new avenues of future research on the different and complementary predictive power of these four subscales in different contexts.

Applied implications

Our results also add new evidence to the potentially high applied value of establishing links between the two perspectives that have addressed the difference between empathy and personal distress. As the lines of research developed by Davis and Batson have shown, this difference is relevant when these two constructs are considered as either personal dispositions or situational emotions, and finding a way to connect these two lines can help us to address new questions. For example, research has shown that ease of escaping from the situation and relative prevalence of the emotions of empathy and personal distress interact with one another to influence helping behaviour (Batson et al., 1987); lower percentages of helping behaviour are usually found when the personal distress prevails and it is relatively easier to escape from the situation (e.g., by thinking we are not going to see the victim

anymore or finding a good «self-justification» reason not to help). Can the personal disposition measures allow us to predict this behaviour? Previous work by Bierhoff and Rohmann (2004) suggests that it can; in any case, developing new valid measures that connect the two different lines of research may help both researchers and professionals to find effective answers to many important questions in this area.

Acknowledgements

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