



## Full Length Article

## Development and validation of the single item trait empathy scale (SITES)

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## ABSTRACT

Empathy involves feeling compassion for others and imagining how they feel. In this article, we develop and validate the Single Item Trait Empathy Scale (SITES), which contains only one item that takes seconds to complete. In seven studies ( $N = 5724$ ), the SITES was found to be both reliable and valid. It correlated in expected ways with a wide variety of intrapersonal outcomes. For example, it is negatively correlated with narcissism, depression, anxiety, and alexithymia. In contrast, it is positively correlated with other measures of empathy, self-esteem, subjective well-being, and agreeableness. The SITES also correlates with a wide variety of interpersonal outcomes, especially compassion for others and helping others. The SITES is recommended in situations when time or question quantity is constrained.

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## 1. Introduction

*"No one cares how much you know, until they know how much you care"*

[Theodore Roosevelt, former US President.]

Empathy involves imagining others' perspectives and feeling care and concern for them (Davis, 1983). It is especially important when it comes to promoting prosocial behaviors, such as helping, cooperating, and sharing (Batson, 2011; Konrath & Grynberg, 2016). More empathic people also tend to be less self-focused, for example, they score lower on narcissism (Hepper, Hart, & Sedikides, 2014; Watson, Grisham, Trotter, & Biderman, 1984). This paper describes the development and validation of the Single Item Trait Empathy Scale (SITES), which consists of this single item: *To what extent does the following statement describe you: "I am an empathetic person,"* rated using a scale that ranges from 1 = *Not very true of me* to 5 = *Very true of me*. Although caution should be taken when using short scales, this scale may be useful in situations

when time or question quantity is constrained. After first reviewing current measures of empathy, we next give an overview of the SITES and its development.

## 1.1. Measuring empathy

Researchers are increasingly interested in collecting data from a lot of people in a short amount of time (i.e., data collection using crowdsourcing, mobile phones, or social media). In order to facilitate such data collection, we previously developed the Single Item Narcissism Scale (SINS) as a "quick and dirty" measure of narcissism - (Konrath, Meier, & Bushman, 2014). The SINS was found to be a reliable and valid way to measure narcissism when a quick method is necessary (also see van der Linden & Rosenthal, 2016 for a replication and extension of this work). In this article, we propose and validate a similar short measure of empathy called the Single Item Trait Empathy Scale (SITES).

Before describing our scale, it is useful to distinguish between trait and state empathy, in the same way researchers have distinguished between trait and state anger (Spielberger, 1983) and between trait and state anxiety (Spielberger, Sydeman, Owen, & Marsh, 1999). Personality traits are relatively stable over time and across situations. In contrast, emotional states are more fleeting and situationally determined. The SITES is a trait measure of

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empathy. In other words, it measures the extent to which people tend to vary in their empathic responses to others across situations. In this article, we show that the SITES is relatively stable over time and situations.

The SITES only takes seconds to complete. We offer it as an alternative to much longer trait measures of empathy. The most popular measure of trait empathy is the Interpersonal Reactivity Index (IRI), which consists of 28 items that are evenly divided into four subscales, with seven items per subscale (Davis, 1983). *Fantasy* assesses the extent to which individuals identify with fictional characters (e.g., “When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me”). *Perspective-taking* is a cognitive form of empathy, assessing the extent to which individuals spontaneously adopt another person’s point of view (e.g., “Before criticizing somebody, I try to imagine how I would feel if I were in their place”). *Empathic concern* is an emotional form of empathy, assessing the extent to which individuals experience feelings of care and compassion for others (e.g., “When I see someone being taken advantage of, I feel kind of protective towards them”). *Personal distress* is a more self-focused emotional response to others, assessing the extent to which individuals experience discomfort and anxiety in response to others’ suffering (e.g., “When I see someone who badly needs help in an emergency, I go to pieces”). For researchers who can afford to use a longer scale, and who are interested in these different dimensions of empathy, the IRI works very well. However, the SITES might be useful when researchers cannot afford to use the 28-item IRI, such as when the number of items in a large data-collection session are limited, or when researchers are interested in a single-dimension measure of empathy.

## 1.2. Overview and scale development

Our approach to validating the SITES was to demonstrate its correlation with another widely used empathy scale (i.e., the IRI), examine its test-retest reliability, and then provide correlations with a number of theoretically relevant intrapersonal and interpersonal outcomes. Across seven studies, using several different participant populations (total  $N=5724$ ) and several different outcome measures, we present evidence for the SITES’ discriminant validity, convergent validity, predictive validity, and test-retest reliability. We further divided the convergent and predictive validity outcomes into ones that are more intrapersonal (i.e. having implications for the self) versus interpersonal (i.e. having implications for others). This will help researchers to quickly determine whether this scale is relevant for their interests. (See Table 1 for scale descriptive statistics and Table 2 for an overview of the results.)

We chose the wording of the SITES carefully, aiming to create a face valid and easily understood measure of empathy that followed closely with scholars’ development of the SINS (Konrath, Meier, et al., 2014) and other single-item scales (e.g., the single-item self-esteem measure; Robins, Hendin, & Trzesniewski, 2001).

We examined readability statistics of the item at the following website: <http://www.readability-score.com>. The SITES has a Flesch-Kincaid grade level of 9.3 compared to a grade level of 7.9 for the IRI.<sup>1</sup> Thus, although not all respondents will likely fully understand the rich theoretical connotations of the term “empathetic,” the readability data and popular use of the term “empathy” among the general public suggests that most adult respondents will be able to understand the meaning of this term. Researchers could,

however, modify the SITES by including a definition of empathetic, such as “(Note: An empathetic person understands others’ feelings, and experiences care and concern for them.) See Study 3.

## 2. Method

All studies were conducted after being approved by the Institutional Review Boards of the authors’ three universities. We documented informed consent in writing for the in-person studies, however, the IRBs waived the requirement for written signatures for online studies, in which participants consented by clicking on a button. Data are available upon request to the first author. Researchers who wish to conduct secondary analyses on de-identified datasets will receive them upon presenting evidence of IRB approval and signing a data confidentiality agreement. (See Supplementary Tables for all means, standard, deviations, Cronbach’s alphas, correlations, and regression output.) All participants were at least 18 years old.

### 2.1. Power analysis

We used correlation analyses to examine the relevant effects of interest in each study. Subsequent analyses in some studies used ANOVAs or regression, but our main hypothesis in each study required a correlation analysis. We therefore based our power analyses on correlations. In order to calculate the sample size needed to achieve 80% power, we needed to find an estimated effect size or estimated  $r$ . We first examined the IRI scale development data (Davis, 1983). Davis examined convergent validity of the four subscales of the IRI with multiple variables including interpersonal functioning, self-esteem, emotionality, and sensitivity to others. He presented 120  $r$  values that ranged from 0.00 to 0.59 with a mean of 0.19. Variables of this type are included in our studies and therefore we believe this estimate for  $r$  is valid. Yet, we also examined recent datasets that focused on trait empathy using the IRI and variables more specific to our studies such as agreeableness and prosocial behavior (Melchers et al., 2016; Mooradian, Davis, & Matzler, 2011; Sze, Gyurak, Goodking, & Levenson, 2012). These additional datasets yielded 28  $r$  values ranging from 0.00 to 0.63 with a mean of 0.23. These additional  $r$  values are similar to those provided by Davis (1983) and we therefore averaged all of the  $r$  values (148), which yielded an  $r$  of 0.20.

We conducted a power analysis using G Power (<http://www.gpower.hhu.de/en.html>) for correlations using an effect size estimate of  $r=0.20$  and a preferred power of 80%. These parameters resulted in a required sample size of 193 participants. The number of participants in each of our studies differs for various reasons (e.g., larger purpose of the study, size of the participant pool, resources available, time constraints, etc.). However, all of our studies but one included more than 193 participants. Due to financial and human resource constraints in running a complex 3-wave study, Study 5 included only 87 participants, which provides an achieved power of only 59%. Therefore, Study 5 was underpowered compared to the remaining studies.

## 3. Study 1

In Study 1 we aimed to examine the relationship between the SITES and the longer, more established Interpersonal Reactivity Index (IRI, Davis, 1983). We expected the SITES to be positively correlated with both the emotional (i.e. empathic concern) and cognitive (i.e. perspective taking) IRI subscales.

<sup>1</sup> The readability level can be moved down to grade 7.6 by making one small change. To what extent does *this* statement describe you: “I am an empathetic person.” In the current paper, we used the original version of the scale with adults, but recommend that researchers use this revised version for adolescent populations.

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