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Development of a measure of kindness

Donna E. Youngs¹ · Miroslava A. Yaneva¹ · David V. Canter¹

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Abstract

In the spirit of the growing developments in positive psychology, there is an increasing interest in how kind people are to each other. Yet, this area lacks any strong psychometric instrument. An initial exploratory study demonstrated that a 40-item questionnaire, completed by 165 people, revealed distinct aspects of kindness when subjected to multivariate analysis. A subsequent study is reported, using the structure of the exploratory results to further clarify the conceptual framework (Study 1). The revised 45-item questionnaire was administered to 1039 individuals from the general British population. Smallest Space Analysis of the variables, supported by Factor analysis, confirmed the hypothesis of two facets to kindness, the psychological source of the action (from principles or empathy), and the form of expression (through psychological involvement or following social prescription). It also revealed an additional general, core kindness, labelled *Anthropophilia*. Reliable scales derived from the combinations of the two elements from each facet were identified: Affective-Socially Prescribed; Affective-Proactive; Principle-Socially Prescribed and Principle-Proactive. Intercorrelations between the scales revealed that they measure different modes of kindness. Comparisons between male and female respondents provided external validity for the questionnaire. Study 2 ($N = 251$) reported that the scales measure independent dimensions when correlated with similar and dissimilar concepts.

Keywords Kindness · Kindness measure · Latent structure · Validity · Types of kindness · Well-being

Introduction

Contemporary research suggests that helpful acts are the manifestation of a multifaceted interpersonal trait known as *kindness* (Canter et al., 2017). It is suggested that individuals are kind with the purpose to provide support to one another without the expectation of a reward and at a certain cost. Earlier social psychological theories provide a number of conceptual definitions of why individuals help others (empathy-altruism hypothesis, Batson & Coke, 1981; negative-state relief model, Cialdini et al., 1982; bystander effect, Latané & Darley, 1970), however there is ambiguity in whether the behaviour constitutes as helping or kindness per se. Despite this rich variety of explanations, there has been a paucity of conceptual definitions of kindness.

Popular trends in kindness research focus on the individual benefits of being kind. For instance, high levels of kindness

have been consistently found to relieve anxiety levels, physical symptoms, such as the common cold, and even blood pressure (Rowland, 2018). Moreover, the most altruistic members of a group typically become the most popular and respected ones (Rowland, 2018). This is supported by claims that kindness promotes healthy social interactions (Emmons & Crumpler, 2000; McCullough et al., 2002; Watkins et al., 2003; Peterson & Seligman, 2004) and increases subjective happiness and satisfaction with life (Lyubomirsky et al., 2005; Otake et al., 2006; Buchanan & Bardi, 2010). However, despite the growing evidence of its psychological value there has been also a lack of sound operational definition of kindness e.g. a valid quantitative assessment of what it is.

Much of research in the field focuses on how acts of kindness affect the mood of recipients of kindness (Baskerville et al., 2000; Exline et al., 2012). This is typically done through utilising a single act of kindness (e.g. giving gifts) to distinguish between groups of individuals, rather than identifying a number of similar acts which constitute a set of related behaviours. Those studies that reveal the benefits to those who carry out acts of kindness, such as Otake et al. (2006), and Buchanan and Bardi (2010) are limited in by not providing a benchmark against which individuals can measure their kindness. In fact, the understanding of kindness relies on overt behavioural outcomes captured in field studies that do not

✉ Donna E. Youngs
d.youngs@hud.ac.uk

¹ International Research Centre for Investigative Psychology, School of Human and Health Sciences, University of Huddersfield, Ramsden Building, Queensgate, Huddersfield HD1 3DH, UK

include sufficient depth of behaviours classed as kind (Baskerville et al., 2000; Otake et al., 2006; Buchanan & Bardi, 2010).

The very few studies that have quantified kindness and allowed for comparability across groups have either done so through examining broader concepts that include kindness (mindfulness, Kraus & Sears, 2009) or through observing it alongside a number of virtues (Peterson & Seligman, 2004) without considering the concept in its own right. The VIA-IS (Peterson & Seligman, 2004) provides the most prominent measure of kindness however it focuses on individuals' attitude towards specific behaviours, rather than their frequency. Finally, although there are studies that recognise the relationship of kindness to both empathy (Eisenberg et al., 2014; de Waal, 2008) and moral principles (Ottoni-Wilhelm & Bekkers, 2010) they also lack a formal measure of kindness as a distinct set of variable.

A Multidimensional Approach

According to Canter et al. (2017) previous studies of kindness suggest possible facets of kindness, that can be brought together as a definition, or a mapping sentence, open to test within Facet Theory as discussed in detail by Canter (1985), Shye et al. (1994) and Borg and Shye (1995). Through integrating various findings Canter et al. (2017) tested six facets that they hypothesised described the domain of kindness, but the analysis of the data from their pilot study gave rise to the hypothesis of a more elegant structure that consisted of two facets; the psychological source of kindness and the form in which it is expressed, summarised in Table 1.

The psychological source is what initiates the kind activity within the person. This facet contains two elements. One is derived from a cognitive assessment of what *principles* are at stake. Ottoni-Wilhelm and Bekkers (2010) suggest that this is an internalised moral value that prompts individuals to help others in need. This goes beyond empathising and is seen as, morally, the right thing to do. According to Canter et al. (2017) much of this behaviour is about being honourable. The other source originates from *empathy* as Eisenberg et al. (2014) and de Waal (2008) demonstrate. Empathy for a person in need, is a precursor behaviour to alleviate that person's suffering. This element encompasses sympathy and concern for other's wellbeing (Eisenberg & Eggum, 2009) as well as prosocial behaviour (Miller et al., 2016). It is of note that empathy is associated with helping family and friends, while principles are responsible for helping distant others and strangers (Canter et al., 2017; Sturmer et al., 2005).

The second facet in Table 1 is 'form of expression' of kindness or how the principles or empathy are expressed. One element is *proactivity*. Proactive individuals are prone to actively seek out opportunities to be kind even when there are no clear cues for help (Warneken, 2013). Such behaviour

is associated with a thoughtful consideration of the needs or intentions of others. Canter et al. (2017) suggest that proactive kindness may include charitable giving and sharing. The other element is that of *social prescriptions*. It is suggested that socially-prescribed kindness resonates with social norms (Exline et al., 2012). Canter et al. (2017) describe this as a permissive humanity that is revealed in everyday courteousness and acceptance of others i.e. to open doors to let people through or to give away a seat on the train to someone who needs it more. This could be also seen as another aspect of reactive helping that is given in response to clear behavioural cues or a direct verbal request for help (Warneken, 2013).

The mapping sentence illustrated in Table 1 presents a set of hypotheses derived from theoretical considerations (Canter, 1985). It has a number of benefits for the investigative process. First, it assists in generating thematically relevant and yet distinct from each other questionnaire items that assess the complete spectrum of kind behaviour. Second, it allows the testing of its implied set of hypotheses through statistical procedures. Third, it assists in the identification of various types of kindness. Finally, it allows for future elaboration and refinement of the proposed framework of kindness.

Considering the emerging need for a theoretical and empirical development of the concept, the current study aims to build on previous approaches to studying kindness by integrating their findings into a set of hypotheses (e.g. mapping sentence) that are said to define a domain of kindness. The hypothesised structure of kindness, illustrated in Table 1, is then subjected to a rigorous multidimensional analysis, aiming to uncover whether it corresponds to an empirical structure in the data. The quantitative measure drawn from the hypothesised structure is then subjected to various procedures to establish its reliability and validity.

Method

Development of a Kindness Scale

Facet Theory is a systematic approach to the coordination between theory and research. It presents a different approach to factor analysis and the resulting derivation of rating scales in test construction (Guttman, 1954). A formal framework is provided for generating appropriate items in test construction (Guttman, 1954). It is a framework for item generation known as a 'mapping sentence' that reduces the arbitrariness that often underlies items selection (Canter, 1985). This enables focused item selection in the early stages of the investigation.

Using the hypothesised mapping sentence items were generated to extend the item pool from the initial study (Canter et al., 2017) that describe acts precise enough to capture the nuances of the concept, yet general enough to maximise the

Table 1 Summary of proposed facets of kindness (mapping sentence) Should the caption be at the top of the table?

Mapping sentence for Kindness Items			
The frequency with which person <i>p</i> declares that s/he carries out actions that are:			
<i>A</i>		<i>B</i>	
<u>PSYCHOLOGICAL SOURCE</u>		<u>FORM OF EXPRESSION</u>	
Derived from	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div style="text-align: center;"> Principles <i>a1</i> Empathy <i>a2</i> </div> </div>	Expressed through	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div style="text-align: center;"> Psychologically Active <i>b1</i> Socially Prescribed <i>b2</i> </div> </div>
			Actions →
			<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 5px;">{</div> <div style="text-align: center;"> <ol style="list-style-type: none"> 1. Not at all 2. Very rarely 3. Sometimes 4. Quite often 5. Often 6. Very often indeed 7. Nearly always </div> </div>
Where <i>p</i> is a person from a population <i>P</i> not selected with reference to acts of kindness.			

likelihood of revealing the underlying structure. Canter (1985) explains that this is achieved by choosing one element from each of the content facets in a way that is meaningful and describes some aspect of a generated questionnaire item.

An example of this would be item 2 – ‘I open doors to let people through’ – has the profile, known as a structuple, *a2b2*. The first part of this structuple, *a2*, is the second element of facet A Psychological source. The second part - is *b2* from facet B Form of expression. Table 2 provides the structuples for each of the kindness items.

It is of note that some items have not been assigned with a corresponding structuple. This, however, would be commented later on in this study. Ultimately, 45 items that are hypothesised to measure kindness were generated.

Procedure

The data was obtained online through the following procedure. The new measure was uploaded on an online survey platform. The link to the survey was advertised online with the following specifications: participants needed to be over 18 years of age and representatives of the British population (e.g. Scotland, England, and Wales). The final data pool was then subjected to multidimensional scaling to investigate whether the hypothesised structure could be identified amongst the participants’ responses.

Sample

The 45-item questionnaire was administered to 1039 individuals from the British general population - 50% male and 50% female, between the ages of 18 and 79 (*M* = 50 years; *SD* =

16.57), recruited from a variety of occupations (39% professionals, 3.2% students, 5.7% labourers, 8.4% trade, 31.4% retired, 12% unemployed) from around the United Kingdom, (13.3% Scotland, 13% Wales, 15.3% North West England, 14.3% North East England, 15.6% Midlands, 12.8% London, 15.7% South England).

Results

Study 1 – Content Validity and Internal Consistency Assessment

Individual Item Statistics

Table 2 summarises the average mean scores and standard deviations of 45 items. The range of these responses varies from 1.82 to 5.74. This indicates that participants were using the full range of possible responses, rather than demonstrating social desirability. Expectedly, the average mean score (*M* = 3.87) is in the middle of the 7-point range. In addition, very few participants displayed average extreme behaviour (e.g. 6 or 7), which also supports the assumption that participants were giving trustworthy responses. Furthermore, this resolves a pertinent issue with Likert scales that contain more than five points where some participants would only choose extreme values (Kline, 1993).

From Table 2 it can be seen that the coefficients of skewness vary from -1.08 to 1.91 and the coefficients of kurtosis vary from -1.10 to 3.20. Of note is that just one item (35 ‘I’ve secretly got professional advice to find out how to help someone’) had a kurtosis greater than 3. Considering the large size of the sample (*N* = 1093) these parameters were within a

Table 2 Factor loadings, structures and characteristics of 45 kindness items

Item/Scale	Factors					Structure	Mean (SD)	Skewness/ Kurtosis
	1	2	3	4	5			
AFFECTIVE-SOCIALLY PRESCRIBED								
1. I help strangers pick up things they have dropped.*	.768	.143	.100	.068	.219	<i>a2b2</i>	5.00 (1.58)	-.238/-1.03
2. I open doors to let people through.*	.704	.176	.052	.010	.064	<i>a2b2</i>	5.43 (1.44)	-.550/-640
3. I give up my seat on the bus/train for someone who may need it more.*	.682	.035	.123	.002	.243	<i>a2b2</i>	4.96 (1.72)	-.311/-1.10
4. I help people when they ask.*	.648	.319	.070	.220	-.013	<i>a2b2</i>	5.32 (1.29)	-.296/-795
5. I help strangers pick things up they've drop.	.631	.232	.175	.009	.263	<i>a2b2</i>	4.75 (1.53)	-.037/-971
6. I don't mind doing favours for friends.*	.607	.286	.123	.229	.048	<i>a2b2</i>	5.10 (1.37)	-.208/-817
7. I will listen to a friend's problems as long as they need.	.581	.457	.154	.153	-.083	<i>a2b2</i>	5.14 (1.41)	-.227/-930
8. If a waitress has tried hard, I leave a good tip.	.549	.184	.061	.070	.280	<i>a1b2</i>	4.78 (1.56)	-.250/-747
9. I share things even if I do not really want to.	.531	.203	.342	.209	.069	<i>a2b2</i>	4.11 (1.43)	.404/-481
10. I would let someone in a rush come ahead of me in a queue.	.497	.212	.075	.211	.259	<i>a1b2</i>	4.24 (1.64)	.243/-1.02
11. I can tolerate friends' annoying habits.	.466	.198	.177	.429	-.020	<i>a2b2</i>	4.21 (1.37)	.407/-551
12. I treat everyone fairly whether I like them or not.	.465	.329	.052	.370	.037	<i>a2b2</i>	4.51 (1.46)	.171/-804
13. I think it is right to give everyone a fair chance.	.453	.441	-.089	.302	.154	<i>a2b2</i>	5.29 (1.38)	-.315/-992
14. It's my responsibility to recycle when I can.	.311	.227	-.221	.066	.260	<i>a1b2</i>	5.74 (1.46)	-1.08/.403
ANTHROPOPHILIA								
15. I have concerned feelings for people less fortunate than me.*	.070	.704	.106	.058	.398		4.18 (1.40)	.304/-749
16. I feel protective towards people who are being taken advantage of.*	.190	.672	.202	.005	.243		4.55 (1.39)	.057/-872
17. I feel sorry for other people when they experience problems.*	.419	.645	.084	.197	.158		4.72 (1.40)	.034/-936
18. I include people if I know they are alone.*	.274	.637	.309	.046	.154		4.24 (1.38)	.251/-648
19. Things happen in the world that really touch me.*	.268	.637	.117	.081	.305		4.39 (1.45)	.105/-954
20. I like to make other people feel happy.	.396	.548	.280	.254	.064		4.91 (1.35)	-.069/-762
21. I share in other people's happiness.	.297	.506	.175	.271	.135		4.37 (1.37)	.169/-691
22. I try to cheer up people who appear unhappy.	.435	.505	.309	.162	-.007		4.48 (1.37)	.220/-785
23. I am kind to others.	.494	.500	.110	.259	-.043	<i>a2b2</i>	5.08 (1.29)	-.124/-837
24. I include people if I know they will be alone.	.455	.497	.347	.085	.168		4.24 (1.45)	.344/-722
25. I try to see things the way my friends do.	.173	.482	.194	.201	-.005	<i>a2b2</i>	3.92 (1.26)	.432/-249
26. I can sense other people's feelings.	.305	.457	.311	-.016	-.072	<i>a2b2</i>	4.53 (1.39)	.182/-882
27. People think I have a soft-heart.	.161	.444	.303	.329	.118		3.96 (1.48)	.380/-620
AFFECTIVE-PROACTIVE								
28. I have done something that upset me to help a friend.*	.108	.058	.808	.043	.068	<i>a2b1</i>	2.77 (1.25)	.966/.904
29. I have done something that upset me to help a friend.	.127	.077	.744	.055	.138	<i>a2b1</i>	2.86 (1.37)	1.13/1.59
30. I've become unpopular to help someone people don't really like.*	.008	.085	.648	.035	.140	<i>a2b1</i>	2.38 (1.30)	1.18/1.47
31. I've helped someone who had done me wrong.*	.057	.186	.621	.317	.078	<i>a2b1</i>	2.63 (1.22)	1.06/1.69
32. I've spent ages to find something that might cheer up a friend.*	.275	.357	.596	.048	.061	<i>a2b1</i>	3.61 (1.40)	.618/-.023
33. I've given more than could really afford to help someone without telling anyone.*	.078	.232	.589	.125	.317	<i>a2b1</i>	2.85 (1.45)	.927/.525
34. I've cancelled going where I really wanted to go because someone needed me.	.304	.229	.585	.076	.060	<i>a2b1</i>	3.43 (1.43)	.675/-.014
35. I've secretly got professional advice to find out how to help someone.	-.070	.092	.565	.080	.164	<i>a2b1</i>	1.82 (1.24)	1.91/3.20
36. I've worked hard at a practical job to help someone out.	.327	.232	.501	.058	.095	<i>a2b1</i>	3.87 (1.42)	.360/-383
PRINCIPLE-SOCIALLY PRESCRIBED								
37. I find it easy to forgive.*	.088	.193	.112	.838	.125	<i>a1b2</i>	3.59 (1.49)	.647/-269
38. I find it easy to forgive.	.097	.191	.108	.825	.112	<i>a1b2</i>	3.43 (1.50)	.785/.056
39. I don't really mind if someone keeps me waiting.*	.222	-.091	.165	.463	.211	<i>a1b1</i>	3.16 (1.29)	.910/.833
40. I think most people are inherently good.	.193	.255	.064	.410	.304	<i>a1b2</i>	4.04 (1.30)	.291/-411

Table 2 (continued)

Item/Scale	Factors					Structuple	Mean (SD)	Skewness/ Kurtosis
	1	2	3	4	5			
PRINCIPLE-PROACTIVE								
41. I give money to beggars in the street.*	.061	.262	.289	.095	.596	<i>albl</i>	2.32 (1.35)	1.22/1.31
42. I volunteer to help the sick or vulnerable.*	.051	.196	.261	.140	.568	<i>albl</i>	2.69 (1.58)	1.07/.610
43. I give to charity.*	.229	.267	.044	.087	.568	<i>albl</i>	3.93 (1.62)	.361/-.752
44. I give blood when I can.	.135	-.105	.173	.070	.512	<i>albl</i>	2.08 (1.74)	1.67/1.71
45. I would give a stranger who had lost her purse the taxi fare home.	.289	.132	.228	.195	.484	<i>albl</i>	3.24 (1.65)	.849/-.062

*Items that could be included in a shorter version of the scale

tolerable range, suggesting normality (Kim, 2013; Mayers, 2013). All 45 items were, therefore, included in the analysis.

Analysis and Identification of Qualitatively Different Aspects of Kindness

Smallest Space Analysis Since the first presentation of Smallest Space Analysis (SSA-I) by Guttman (1954) the power of this form of analysis has been demonstrated across hundreds of studies going back over half a century as illustrated by Canter (1985), Shye et al. (1994) and Borg and Shye (1995), or more recently by Roazzi et al. (2015). It has been shown to allow the construction of robust models independently of the assumptions of linearity inherent in factor analysis, facilitating rich theoretical models.

Its power stems in part from its non-metric multidimensional scaling procedure in which the rank of the correlations between variables are related to the inverse of the ranks of distances between the points representing those variables in a Euclidean space. Each variable is then treated as a representative of a range of potential variables that help to define a region. The regions, in turn, form a structure that tests the hypothesis of the definitional system in Table 1.

There are a variety of statistical algorithms available for calculating Smallest Space Analysis. For the present study HUDAP software (Hebrew University Data Analysis Package) was used. SSA was carried out on all 45 kindness items across all 1039 respondents. For the resulting three-dimensional configuration, the CoA was 0.15 showing a good fit between the correlations and the distances in the space. The SSA projection of dimension one against dimension two for the 3D solution is given in Fig. 1.

Partitioning of the SSA Configuration The four elements hypothesised, as summarised in the mapping sentence in Table 1, are reflected in the four regions of the SSA space. In other words, the SSA configuration supports the hypothesised structure.

Above the line drawn horizontally across the configuration in Fig. 1 is the region for all the items that are based on the psychological source of principled actions, such as ‘I think most people are inherently good’ and ‘I give blood when I can’ (item 44). Below the line are those items that have a much stronger empathetic component, such as ‘I’ve spent ages to find something that might cheer up a friend’ (item 32), and ‘I will listen to a friend’s problem as long as they need’ (item 7). This line thus partitions the regions in relation to the first Psychological source facet in the mapping sentence in Table 1.

The vertical partition in Fig. 1 provides the basis for the second facet in the mapping sentence, distinguishing the forms of expression. To the left are those items that include socially prescribed behaviour, such as ‘If a waitress has tried hard, I leave a good tip’ (item 8) or ‘I open doors to let people through’ (item 2). To the right are kindness items that reveal psychologically active forms of expression. These include, for example, ‘I give money to beggars on the street’ (item 41) and ‘I have done something that upset me to help a friend’ (item 20).

Taken together these two facets, each with two elements, generate four subscales that represent four different modes of kindness.

Modes of Kindness

Principle-Socially Prescribed Kindness (PSP) The top left quadrant of the SSA is the form of kindness that is cognitive, rather than emotional in origin. It is a tendency towards prosocial thinking (‘I think most people are inherently good’) and sympathetic behaviour (‘I would let someone in a rush come ahead of me in a queue’), rather than involving any outward expression or giving. It is psychologically passive, being consistent with socially prescribed actions and in the sense that it operates to support people by making allowances (‘I don’t really mind if someone keeps me waiting’, ‘I find it easy to forgive’). It could extend from supporting particular

annoying habits’, ‘I will listen to a friend’s problems as long as they need’) and simple everyday consideration of others along socially prescribed lines (‘I open doors to let people through’, ‘I share things even if I do not really want to’). Interestingly, it is within this variant of the SSA division that we find the item ‘I am kind to others’, suggesting that it is in these terms that most people think about kindness.

Anthropophilia In addition to the four elements of Kindness revealed in the SSA a central region can be identified, shown within a circle around them in Fig. 1, marked with an ‘A’. The location of these items indicates they are conceptually focal to the domain that the questionnaire measures. The theme of this central region is labelled Anthropophilia (A). This is proposed as a core form of kindness which the four types are modes of. It includes the items ‘I have concerned feelings for people less fortunate than me’ (labelled ‘concern’); ‘I feel protective towards people who are being taken advantage of’ (‘protective’); ‘I include other people if I know they are alone’ (‘include’); ‘Things happen in the world that really touch me’ (‘world’), and ‘I like to make other people feel happy’ (‘happy’).

It is suggested that these items cannot be broken into constructs and therefore include behaviours drawn from both psychological sources and both forms of expression. It is of note that these central items correlate to a sufficient level with each of the variables at the periphery, thereby contributing to the centrality of their location on the SSA plot.

Factor Analysis

The SSA-I generates regional hypotheses of structure. In order to cross-validate the proposed system, a five-factor factor analysis was carried out. It was hypothesised that the five regions would reflect five independent factors. This was done using IBM SPSS statistical software platform. The factor loadings in relation to the five regions of the SSA are given in Table 2.

Several criteria for the factorability of a correlation matrix were implemented. The correlation matrix was examined for correlations above .3, revealing that all of the items correlated at least 0.3 with at least one other item (Tabachnick & Tabachnick & Fidell, 2014). In addition, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.95, which falls into the range of superb (Hutcheson & Sofroniou, 1999) and Bartlett’s test of sphericity was significant ($p < .001$). The diagonals of the anti-image correlation matrix were all above 0.5 and 45 out of 45 communalities were all about or above 0.3. Overall, these parameters confirm that the 45 kindness items are appropriate for Factor Analysis.

Facet Theory suggests that the regions are intercorrelated as they represent regions in the space of variables, rather than coordinate systems (Guttman, 1954). However, the issue of whether the regions or factors are correlated may be irrelevant at this exploratory stage (Kim & Mueller, 1978). Varimax rotation was, therefore, used in order to simplify the loading of items and identify the factor upon which data loads more specifically. Ultimately, this contributed to a more straightforward interpretation of the results than if oblique rotation was implemented (Kim & Mueller, 1978).

The five-factor solution, which explained 51.55% of the total variance, was preferred. The factor loading matrix for the final solution is presented in Table 2. The first factor (Affective-Socially Prescribed region) explained 33.20% of the variance, the second factor (Anthropophilia) explained 7.02% of the variance, the third factor (Affective-Proactive region) explained 4.17% of the variance, the fourth (Principle-Socially Prescribed region) - 3.64%, and the fifth factor (Principle-Proactive region) explained 3.53% of the total variance. It is of note that the Affective-Socially Prescribed dimension explained greater variance than the focal dimension Anthropophilia. This was as expected, considering the higher number of items included in the Affective-Socially Prescribed dimension.

Items with factor loadings of .40 or greater were retained following acceptable threshold recommendations (Matsunaga, 2010). Of note is that just one item (14 ‘It’s my responsibility to recycle when I can’, Factor 1–.311) fell below the cut-off minimum, however it was retained for use in the questionnaire considering its conceptual significance to the host region (PSP; Fig. 1). Further, Table 2 shows that several items have significant cross-loadings ($> .30$; Hair et al., 1998) on other factors (e.g. 7, 9, 11, 13, 17, 20, 22, 23, 24, 32). Of these, items 7, 9, 17, 20 and 32 are clearly loaded on their primary factors (approx. .60), revealing differences as significant as .20 between the cross-loadings and were, thus, retained. Item 23 ‘I am kind to others’ shows almost equal loadings on two factors (.50 – Anthropophilia; .49 - ASP). Figure 1 illustrates that it has more in common with the variables in ASP, and therefore remained in that region. The rest of the items (11, 13, 22, 24) reveal varying degrees of smaller cross-loading differences ($M = 0.04$), suggesting that these are poorly presented in the factor solution. However, Fig. 1 illustrates that these items can be found close to the centre, rather than the boundaries, suggesting that they are representative of their SSA regions. It is suggested that the SSA configuration provides a reasonable conceptual explanation for the behavioural variation described by these items. Following Guttman’s (1984) recommendation for item retention, all items were included in the final pool.

When considering the regions in relation to the factor loadings it is important to note that the items in the centre of each region had higher loadings on their identified factor than those

close to the boundaries of the region. This illustrates that the items at the boundaries of regions are indeed those which are least distinct in defining that region. Thus, the regional location of items taken together with the factor loadings assists in clarifying the modes of kindness that emanate from Anthropophilia. These four regions in Fig. 1 do reflect four modes of kindness as indicated by the four factors in Table 2.

Overall, the items in each factor correspond closely to the SSA division (Fig. 1), indicating that a similar underlying structure emerges even when different measures of covariation are used. Although, there is slight variation between the items in the SSA regions and the factors, the five kindness dimensions appear conceptually similar across the two outcomes. This contributes to the construct validity of the new concept. It is of note that further analyses were based on the item distribution as illustrated in the regional configuration.

Internal Consistency Assessment

Scales were constructed for each region. Cronbach's alpha coefficients were calculated utilising SPSS software. An overall kindness scale was also constructed of all items, giving a total of six scales. According to Nunnally's (1978) criteria of acceptable internal consistency, alphas of 0.7 and above are considered acceptable reliability.

Table 3 illustrates the alphas for each of the six scales e.g. the five subscales, as well as the composite scale. The scales showed good to excellent internal consistency, ranging from 0.68 to 0.95 with an overall mean of 0.81.

One alpha fell just below 0.70, the value for the Principle-Proactive scale being 0.68. A possible explanation is the low number of items in that scale. However, all of the scale items were retained as removing any of them did not result in increases in any of the alphas.

Table 3 Alpha coefficients for the six kindness scales indicating internal consistency

Scale	N	Item Mean	Mean (SD)	Alpha
Affective-Socially Prescribed	14	4.90	68.57 (13.70)	.90
Anthropophilia	10	4.43	57.56 (12.70)	.92
Affective-Proactive	9	2.91	26.22 (8.41)	.87
Principle-Socially Prescribed	6	3.56	14.23 (4.16)	.73
Principle-Proactive	6	2.85	14.27 (5.28)	.68
Total Kindness	45	4.02	180.85 (36.28)	.95

Interrelationships of the Kindness Scales

It was predicted that the four kindness subscales, as well as the core form Anthropophilia, would be related to each other, but with a moderate strength in order to be considered non-equivalent of each other. However, the associations between the scales and Anthropophilia are expected to be higher due to the fact that they are all contingent upon the core trait. In order to achieve that, Pearson product-moment correlation coefficients between the five kindness subscales were calculated and presented in Table 4 below.

As expected, all of the scales were associated moderately, indicating that they measure distinct aspects that are not equivalent of each other. Further, the relationships between Anthropophilia and the four kindness modes were, as hypothesised, slightly more pronounced, yet within the desirable moderate correlation range. Of note is that the mode that had the most in common with Anthropophilia was Affective-Socially Prescribed kindness ($r = .79$). Therefore, high Anthropophilia scorers would typically display more of the behaviours included in Affective-Socially Prescribed kindness.

The scale that revealed the lowest correlation coefficient with Anthropophilia was Principle-Proactive kindness ($r = .57$), indicating that these behaviours have the least in common with the anthropophilic disposition. This is also evident from the apparently larger distances between the Principle-Proactive items and the core, as illustrated in Fig. 1. Further, Principle-Socially Prescribed kindness displayed a higher correlation with Affective-Socially Prescribed kindness, rather than with Anthropophilia. One possibility for this association could be the more pronounced presence of social norms in both of these aspects.

External Validity

Various research outcomes suggest that kindness is a more feminine, rather than masculine trait. Studies conducted before the development of the kindness measure produced solid evidence for this (Diekmann & Goodfriend, 2006; Baskerville et al., 2000; Langford & MacKinnon, 2000; Eagly & Mladinic, 1994; Williams & Williams & Best, 1990). In order to determine if the kindness scales reflected such a distinction, the means for each scale were compared between men and women. Table 5 gives the results.

An independent samples test was used to compare kindness scores for men and women. Table 5 displays, as anticipated, that women scored higher than men on all of the kindness dimensions. Significant results were obtained for the total kindness scale, $p < .0001$ with women revealing higher levels of overall kindness than men. At a subscale level this score pattern was more pronounced as illustrated in Table 5. Significant difference between the two genders was found

Table 4 Interrelationships of the kindness scales; relationship with similar and dissimilar concepts

Scales	Anthropophilia	Principle- socially prescribed	Principle- proactive	Affective- Proactive	Affective- socially prescribed
Anthropophilia	1	.64**	.57**	.60**	.79**
PSP	.64**	1	.55**	.40**	.69**
PP	.57**	.55**	1	.52**	.51**
AP	.60**	.40**	.52**	1	.50**
ASP	.79**	.69**	.51**	.50**	1
<i>Empathy</i>					
Perspective Taking	.36**	.41**	.43**	.33**	.29*
Empathic Concern	.64**	.30**	.46**	.46**	.25*
Fantasy	.23*	.14	.21	.28*	.08
Personal Distress	.10	-.10	-.03	.16	-.06
<i>Psychopathy</i>					
Primary Psychopathy	-.41**	-.33**	-.39**	-.19	-.39**
Secondary Psychopathy	-.09	-.05	-.05	.19	-.18
<i>Machiavellianism</i>					
Machiavellianism	-.48**	-.39**	-.33**	-.25*	-.42**
<i>IPIP scales</i>					
Agreeableness	.63**	.46**	.19	.29**	.51**
Extroversion	.21*	.12	.20	.17	.23*
Neuroticism	-.02	-.03	-.07	-.14	.07
Openness to experience	.15	.21*	.09	.17	.20
Conscientiousness	.16	.18	.03	.10	.16

** p < .01

for Anthropophilia, $t(1037) = -6.63, p < .0001$, Affective Proactive $t(1037) = -2.60, p < .01$, Affective-Socially Prescribed $t(1037) = -3.41, p < .001$, and Principle-Proactive $t(1037) = -2.19, p < .05$ with women displaying significantly higher scores. Only one subscale (Principle-Socially Prescribed) did not differentiate between gender groups. This suggests that men could be as kind as women when the situation requires prosocial thinking ('I think most people are inherently good'; 'I find it easy to forgive'), rather than prosocial behaviour. A possible explanation is provided by

gender socialisation theories where women prefer to appear nurturing and caring, while men choose to inhibit these kinds of prosocial behaviour (e.g. Brody, 1999).

Study 2 – Further Evidence of Construct Validity

Further evidence of the construct validity of the proposed scale was obtained through correlations with similar (convergent validity) and dissimilar (discriminant validity) concepts.

Table 5 Comparisons of mean scores of male and female participants

Groups	N	TK	Anthropophilia	PSP	PP	AP	ASP
Men	519	98.32 (14.81)	96.90(15.10)	98.80 (14.42)	100.10 (14.23)	99.15 (15.40)	98.76 (15.44)
Women	520	102.39 (15.16)	103.18(15.43)	100.37 (14.31)	102.06 (14.73)	101.68 (16.06)	102.00 (15.20)
T-Value		-4.37***	-6.63***	-1.76	-2.19*	-2.60**	-3.41***

Equal variances assumed (on basis of Levene's test for equality of variance)

a Equal variances not assumed (on basis of Levene's test for equality of variance)

Significance: * $p < .05$ ** $p < .01$ *** $p < .001$

For comparative purposes scores in this analysis were standardised using linear transformation

Sample

A further 251 individuals were recruited. Participants were 39% male and 61% female, between the ages of 18 and 69 ($M = 27$; $SD = 8.74$) of whom 72% were students and 28% were members of the general public.

Predictions

A number of psychological instruments were utilised that included measures of similar and dissimilar concepts. Various findings in the literature suggest that similar concepts, such as empathy (Eisenberg et al., 2014; de Waal, 2008) and agreeableness (Graziano et al., 2007) would share positive correlations with measures of kind behaviour, while dissimilar concepts such as psychopathy (Mahmut et al., 2016) and Machiavellianism (Bereczkei et al., 2010) would reveal negative associations. Reliable scales, pertaining to these concepts were, therefore, used to examine the suggested predictions. Total scores were calculated for each subscale, alongside Cronbach's alphas that were above the required minimum of .70 (Nunnally, 1978).

Instruments

The Interpersonal Reactivity Index (Davis, 1980) was utilised to capture participants' scores on empathy. This is a 28-item scale that measures distinct forms of empathy. The responses are anchored on a 5-point Likert scale (1 'does not describe me well' to 5 'describes me very well') across four subscales, namely, Empathic Concern ($\alpha = .75$), Perspective-Taking ($\alpha = .80$), Personal Distress ($\alpha = .81$), and Fantasy Scale ($\alpha = .77$).

The Levenson Self-Report Psychopathy scale (Levenson et al., 1995) is a 26-item scale that measures two types of psychopathy e.g. primary ($\alpha = .87$; interpersonal issues) and secondary ($\alpha = .71$; antisocial behaviour) psychopathy. The responses are captured on a 4-point Likert scale where 1 = 'disagree strongly' and 4 = 'agree strongly'.

The MACH-IV (Christie & Geis, 1970) is a 20-item measure of global Machiavellianism ($\alpha = .74$). The answers are anchored on a 5-point scale that ranges from 1 'totally disagree' to 5 'totally agree' and provides a single total score for each participant. and.

Finally, the IPIP Big-Five Factor Markers (International Personality Item Pool, 2001) is a 50-item questionnaire based on the commercial inventory NEO-PI-R. Responses are recorded on a 5-point scale, ranging from 1 'strongly disagree' to 5 'strongly agree' and capture data on the five personality traits, namely, Agreeableness ($\alpha = .85$), Extroversion ($\alpha = .88$), Openness to experience ($\alpha = .78$), Neuroticism ($\alpha = .88$), and Conscientiousness ($\alpha = .73$).

Correlations

Table 4 summarises the zero-order correlation coefficients between the four measures and the kindness subscales. The relationships were in the predicted direction and the subscales revealed significant patterns of correlation with the other measures. The highest coefficients were between Anthropophilia and empathic concern and agreeableness (mean $r = .64$) however they fall within the desirable moderate range. This suggests that Anthropophilia may include aspects of agreeableness and empathic concern, but it is not an equivalent. Moreover, this supports the proposed definitional statement that empathic abilities may be a source for kind behaviour. The rest of the subscales correlate with varying moderate degrees indicating that the dimensions exist independently from similar psychological concepts.

The subscales were negatively associated with dissimilar measures. As expected, Anthropophilia revealed the strongest negative coefficient with the measures of Machiavellianism and primary psychopathy. The moderate strength of the associations indicates that Anthropophilia may be a polar opposite of these concepts, confirming suggestions made by Canter et al. (2017). The rest of the subscales correlated with varying moderate degrees, lending discriminant validity to the proposed measure. Of note is that the subscales revealed weak, non-significant associations with secondary psychopathy (e.g. antisocial behaviour). Previous outputs suggest that this psychopathy type has no significant associations with measures of altruistic prosociality (e.g. White, 2014).

Discussion

This large-scale study provides a framework for measuring kindness and its various modes. The identification of Anthropophilia and four forms of kindness develops the three aspects identified by Canter et al. (2017), thereby providing a more refined framework for considering human kindness that is of public and academic interest.

The revised kindness measure demonstrates excellent psychometric properties and could be fruitful in a number of research settings. It is characterised by high reliability and a coherent multidimensional structure that emerges even when different models of validation are used. The structure of kindness reveals four modes of interaction between the person and the social world. These support a model of kindness that recognises different psychological sources of actions and different forms of expression. Each of these modes is a specific aspect of a general relationship to others that has been labelled Anthropophilia. Finally, the measure offers five distinct

dimensions that exist independently of other psychological concepts.

It is in the nature of an SSA configuration that the emphases identified in the periphery of the plot are contingent upon the central element. It is suggested that the stronger the core the more pronounced the emphases would be. In other words, in order for the four kindness types to emerge individuals would need sufficiently high levels of Anthropophilia.

The SSA reveals that Anthropophilia includes behaviour that clearly contrasts with psychopathy. For instance, it is characterised by (1) a gentle, kind and caring personality, rather than the cruel behaviour and cynical views of psychopaths (for example, ‘Things happen in the world that really touch me’); (2) true empathy, rather than the superficial and deceptive behaviour of psychopaths (for example, ‘I share other people’s happiness’); and (3) a desire to protect as opposed to manipulate and take advantage of others (for example, ‘I feel protective towards people who are being taken advantage of’). Together with the findings of the correlational investigation, the present study proposes that Anthropophilia could be regarded as a polar opposite to psychopathy.

The findings further confirms that amongst 1039 individuals, women are indeed kinder than men, validating the questionnaire externally. Expectedly, women scored significantly higher than men on almost all measures of kindness except for Principle-Socially Prescribed kindness where male and female mean scores did not differ. In particular, women scored higher on total kindness, Anthropophilia, Affective-Proactive, Affective-Socially Prescribed and Principle-Proactive kindness. This bode well with the general communal theme of female social interaction that women are more likely to respond to others’ needs (Wood & Eagly, 2002). Women are further known to be kinder, more loving, and grateful in other quantitative studies (Linley et al., 2007) as well as narrative-based experiments (Burlinson & Kunkel, 2006; Cross & Madson, 1997). Ultimately, the results in this study support common beliefs of gender differences, such as the nature versus nurture debate (Eagly & Wood, 2013) and attachment theory (Bowlby, 1973; 1980; 1982).

However, it is interesting to note that even in this large sample there is no significant difference between men and women on one scale with the cognitive, principled element of the psychological source facet; Principle-Socially Prescribed kindness. This supports the view that, this form of kindness, is based on some assessment of what is appropriate rather than the more emotional aspects that would be expected to be dominant in women. Following this line of thought, it was not surprising that the two empathy-based kindness scales (Affective-Proactive and Affective-Socially Prescribed) were more pronounced in women than men emphasising the validity of the scales.

Further investigations of human kindness may carry a number of implications specifically for areas, such as personality research, forensic and organisational psychology. For example, high anthropophiliacs may be drawn to occupations where helping others is part of the job description (Canter et al., 2017; Bryan, 2009). In addition, kind and less kind individuals may be characterised by different personality profiles. Lastly, having a way to measure kindness may assist in understanding why some offenders are psychopaths but not all psychopaths are offenders (Canter et al., 2017).

The present study, however, does not provide a complete account of the validity of the kindness measure. The measure, so far, demonstrates a stable structure, excellent reliability levels, and good convergent and discriminant validity, however, little is known about the extent to which it is related to an outcome. This, in turn, will help to clarify if the measure is mutable to training that is intended to increase kindness (e.g. kindness-based intervention). In doing this, a measure of kindness would provide a contribution to research not only into the ways in which people are good to each other but also a means to increasing well-being.

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Data Availability The dataset generated during and/or analysed during the current study is not publicly available due to ethical restrictions but is available from the corresponding author on reasonable request.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical Statement All procedures performed with human participants were in accordance with ethics standards. Ethics approval was granted by the Research Ethics and Integrity Committee, School of Human and Health Sciences at the University of Huddersfield, United Kingdom.

Informed Consent Informed consent was obtained from all participants included in the study upon continuation with the online survey.

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References

- Baskerville, K., Johnson, K., Monk-Turner, E., Slone, Q., Standley, H., Stansbury, S., Williams, M., & Young, J. (2000). Reactions to random acts of kindness. *The Social Science Journal*, 37, 293–298.
- Batson, C. D., & Coke, J. S. (1981). Empathy: A source of altruistic motivation for helping. In J. P. Rushton & R. M. Sorrentino (Eds.), *Altruism and helping behaviour: Social, personality, and developmental perspectives* (pp. 167–187). Lawrence Erlbaum Associates.
- Bereczkei, T., Birkas, B., & Kerekes, Z. (2010). The presence of others, prosocial traits, Machiavellianism: A personality x situation approach. *Social Psychology*, 41(4), 238–245. <https://doi.org/10.1027/1864-9335/a000032>.
- Borg, I., & Shye, S. (1995). *Facet theory*. Sage.
- Bowlby, J. (1982). Attachment and loss: Vol. 1. Attachment (2nd ed.). New York: Basic Books (Original work published 1969).
- Brody, L. (1999). *Gender, emotion, and the family*. Harvard University Press.
- Bowlby, J. (1973). Attachment and loss: Vol. 2. Separation: Anxiety and anger. New York: Basic Books.
- Bowlby, J. (1980). Attachment and loss: Vol. 3. Loss: Sadness and depression. New York: Basic Books.
- White, B.A. (2014) Who cares when nobody is watching? Psychopathic traits and empathy in prosocial behaviors. *Personality and Individual Differences* 56:116-121
- Bryan, W. V. (2009). *The professional helper: The fundamentals of being a helping professional*. Charles C. Thomas.
- Buchanan, K., & Bardi, A. (2010). Acts of kindness and acts of novelty affect life satisfaction. *Journal of Social Psychology*, 150(3), 235–237. <https://doi.org/10.1080/00224540903365554>.
- Burleson, B. R., & Kunkel, A. W. (2006). Revisiting the different cultures thesis: An assessment of sex differences and similarities in supportive communication. In K. Dindia & D. J. Canary (Eds.), *Sex differences and similarities in communication* (pp. 137–159). Lawrence Erlbaum Associates Publishers.
- Canter, D. (1985). *Facet theory: Approaches to social research*. Springer Verlag.
- Canter, D. V., Youngs, D. E., & Yaneva, M. A. (2017). Towards a measure of kindness: An exploration of a neglected interpersonal trait. *Personality and Individual Differences*, 106, 15–20. <https://doi.org/10.1016/j.paid.2016.10.019>.
- Christie, R., & Geis, F. L. (1970). *Studies in Machiavellianism* (1st ed.). Academic Press. <https://doi.org/10.1016/C2013-0-10497-7>.
- Cialdini, R. B., Kenrick, D. T., & Baumann, D. J. (1982). Effects of mood on prosocial behavior in children and adults. In N. Eisenberg (Ed.), *The development of prosocial behavior* (pp. 339–359). Academic.
- Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin*, 122(1), 5–37. <https://doi.org/10.1037/0033-2909.122.1.5>.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10, 85.
- de Waal, F. B. M. (2008). Putting the altruism back into altruism: The evolution of empathy. *Annual Review of Psychology*, 59, 279–300. <https://doi.org/10.1146/annurev.psych.59.103006.093625>.
- Diekmann, A. B., & Goodfriend, W. (2006). Rolling with the changes: A role congruity perspective on gender norms. *Psychology of Women Quarterly*, 30(4), 369–383. <https://doi.org/10.1111/j.1471-6402.2006.00312.x>.
- Eagly, A. H., & Mladinic, A. (1994). Are people prejudiced against women? Some answers from research on attitudes, gender stereotypes, and judgments of competence. *European Review of Social Psychology*, 5(1), 1–35. <https://doi.org/10.1080/14792779543000002>.
- Eagly, A.H., & Wood, W. (2013). The nature-nurture debates: 25 years of challenge in understanding the psychology of gender. *Perspectives on Psychological Science*, XX(X), 1-18. <https://doi.org/10.1177/1745691613484767>.
- Eisenberg, N., & Eggum, N. D. (2009). Empathic responding: Sympathy and personal distress. In J. Decety & W. Ickes (Eds.), *The social neuroscience of empathy* (pp. 71–83). MIT Press. <https://doi.org/10.7551/mitpress/9780262012973.003.0007>.
- Eisenberg, N., Spinrad, T. L., & Morris, A. (2014). Empathy-related responding in children. In M. Killen & J. G. Smetana (Eds.), *Handbook of moral development* (pp. 184–207). Psychology Press.
- Emmons, R. A., & Crumpler, C. A. (2000). Gratitude as human strength: Appraising the evidence. *Journal of Social and Clinical Psychology*, 19, 849–857. <https://doi.org/10.1521/jscp.2000.19.1.56>.
- Exline, J. J., Lisan, A. M., & Lisan, E. R. (2012). Reflecting on acts of kindness toward the self: Emotions, generosity, and the role of social norms. *The Journal of Positive Psychology*, 7(1), 45–56. <https://doi.org/10.1080/17439760.2011.626790>.
- Graziano, W. G., Habashi, M. M., Sheese, B. E., & Tobin, R. M. (2007). Agreeableness, empathy, and helping: A person x situation perspective. *Journal of Personality and Social Psychology*, 93(4), 583–599. <https://doi.org/10.1037/0022-3514.93.4.583>.
- Guttman, L. (1954). A new approach to factor analysis: The Radex. In P. F. Lazarsfeld (Ed.), *Mathematical thinking in the social sciences* (pp. 258–348). Free Press.
- Guttman, L. (1984). What is not what in statistics. *Bulletin of Sociological Methodology*, 4(1), 3–35. <https://doi.org/10.1177/075910638400400102>.
- Hair, J. F., Tatham, R. L., Anderson, R. E., & Black, W. (1998). *Multivariate data analysis* (Fifth ed.). Prentice-Hall.
- Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: An introduction to generalized linear models*. Sage Publications.
- International Personality Item Pool. (2001). A scientific collaboratory for the development of advanced measures of personality traits and other individual differences. Internet web site: <http://ipip.ori.org/>. Accessed Mar 2019.
- Kim, H.-Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry and Endodontics*, 38, 52–54. <https://doi.org/10.5395/rde.2013.38.1.52>.
- Kim, J. O., & Mueller, C. W. (1978). *Factor analysis: Statistical methods and practical issues*. Sage.
- Kline, P. (1993). *The handbook of psychological testing*. Routledge.
- Kraus, S., & Sears, S. (2009). Measuring the immeasurable: Development and initial validation of the self-other four immeasurables (SOFI) scale based on Buddhist teachings on loving kindness, compassion, joy and equanimity. *Social Indicators Research*, 92, 169–181. <https://doi.org/10.1007/s11205-008-9300-1>.
- Langford, T., & MacKinnon, N. J. (2000). The affective bases for the gendering of traits: Comparing the United States and Canada. *Social Psychology Quarterly*, 63(1), 34–48. <https://doi.org/10.2307/2695879>.
- Latané, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?* Appleton Century Crofts.
- Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology*, 68(1), 151–158. <https://doi.org/10.1037/0022-3514.68.1.151>.
- Linley, P. A., Maltby, J., Wood, A. M., Joseph, S., Harrington, S., Peterson, C., Park, N., & Seligman, M. E. P. (2007). Character strengths in the United Kingdom: The VIA inventory of strengths. *Personality and Individual Differences*, 43(2), 341–351. <https://doi.org/10.1016/j.paid.2006.12.004>.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General*

- Psychology*, 9(2), 111–131. <https://doi.org/10.1037/1089-2680.9.2.111>.
- Mahmut, M. K., Cridland, L., & Stevenson, R. J. (2016). Exploring the relationship between psychopathy and helping behavior in naturalistic setting: Preliminary findings. *The Journal of General Psychology*, 143(4), 254–266. <https://doi.org/10.1080/00221309.2016.1214099>.
- Matsunaga, M. (2010). How to factor-analyze your data right: do's, don'ts, and how-to's. *International Journal of Psychological Research*, 3(1), 97–110. <https://doi.org/10.21500/20112084.854>.
- Mayers, A. (2013). *Introduction to statistics and SPSS in psychology*. Pearson Education Limited.
- McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82, 112–127. <https://doi.org/10.1037/0022-3514.82.1.112>.
- Miller, J. D., Nuselovici, J. N., & Hastings, P. D. (2016). Nonrandom acts of kindness: Parasympathetic and subjective empathic responses to sadness predict children's prosociality. *Child Development*, 87(6), 1679–1690. <https://doi.org/10.1111/cdev.12629>.
- Nunnally, J. (1978). *Psychometric theory*. McGraw-Hill.
- Otake, K., Shimai, S., Tanaka-Matsumi, J., Otsui, K., & Fredrickson, B. L. (2006). Happy people become happier through kindness: A counting kindnesses intervention. *Journal of Happiness Studies*, 7, 361–375. <https://doi.org/10.1007/s10902-005-3650-z>.
- Ottoni-Wilhelm, M., & Bekkers, R. (2010). Helping behaviour, dispositional empathic concern, and the Principle of care. *Social Psychology Quarterly*, 73(1), 11–32. <https://doi.org/10.1177/0190272510361435>.
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. American Psychological Association.
- Roazzi, A., Campello de Souza, B., & Bilsky, W. (2015). *Facet theory: Searching for structure in complex social, cultural and psychological phenomena*. UFPE.
- Rowland, L. (2018). Kindness - society's golden chain? *The Psychologist*, 31, 30–35.
- Shye, S., Elizur, D., & Hoffman, M. (1994). *Introduction to facet theory: Content design and intrinsic data analysis in behavioral research*. Sage.
- Sturmer, S., Snyder, M., & Omoto, A. M. (2005). Prosocial emotions and helping: The moderating role of group membership. *Journal of Personality and Social Psychology*, 88, 532–546. <https://doi.org/10.1037/0022-3514.88.3.532>.
- Tabachnick, B.G., & Fidell, L.S. (2014). *Using multivariate statistics* (6th ed., new international ed. ed., always learning). Pearson.
- Warneken, F. (2013). Young children proactively remedy unnoticed accidents. *Cognition*, 126(1), 101–108. <https://doi.org/10.1016/j.cognition.2012.09.011>.
- Watkins, P. C., Woodward, K., Stone, T., & Koths, R. L. (2003). Gratitude and happiness: Development of a measure of gratitude, and relationships with subjective well-being. *Social Behavior and Personality*, 31, 431–452. <https://doi.org/10.2224/sbp.2003.31.5.431>.
- Williams, J.E., & Best, D.L. (1990). *Sex and psyche. Gender and self viewed cross-culturally*. Sage Publications.
- Wood, W., & Eagly, A. H. (2002). A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin*, 128(5), 699–727. <https://doi.org/10.1037/0033-2909.128.5.699>.

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