VALIDATION OF THE SOCIAL IDENTITY GROUP NEED SATISFACTION AND FRUSTRATION SCALE

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For people who understand themselves as defined by the ethnic or religious group to which they belong, an insult to the group can inflict a harm as real and as damaging as some physical harms.

Michael Sandel. (1998)

Within these perspectives, misrecognition shows not just a lack of due respect. It can inflict a grievous wound, saddling its victims with a crippling self-hatred. Due recognition is not just a courtesy we owe people. **It is a vital human need**.

Charles Taylor. (1994) (our emphasis)

Introduction

Self-determination theory (SDT; Ryan & Deci, 2018) claims an individual will experience the 'good life' if, and only if, their need for autonomy, relatedness, and competence are satisfied. Societies that provide the conditions for need satisfaction provide the basis for a good society. A need satisfying state will meet the liberal purpose of government—the general happiness of its people (Radcliff, 2013). However, societies are comprised of multiple social identity groups, and the wellbeing of such groups tends to vary (Branscombe, Schmitt, & Harvey, 1999; Stevens et al., 2015). Social group differences in wellbeing suggest that needs satisfying societal norms may not be equally beneficial across social identity groups. Thus, research should consider not only whether individual needs are satisfied, but also if the needs of the social identity groups to which they belong are being met.

Such considerations have implications for SDT—do needs exist at both individual and group levels. And implications for states—do governments have any responsibilities to recognize groups, beyond the responsibilities it has to group's individual members? The status of groups is a common tension between liberals and communitarians (Avînerî & De Shalit, 1992). Yet even within liberalism itself there is debate about whether government policies and institutions should be neutral to the claims of groups, cultures, and communities (Barry, 2001; Kymlicka, 1991). In particular, modern liberalism includes a competition between what Walzer (1994, p. 99) calls: *Liberalism 1*—where the state is neutral to groups and has no group projects beyond "personal freedom and the physical security, welfare, and safety of its citizens"; and *Liberalism 2*—a liberalism in which particular groups are nourished and allowed to flourish (i.e., given special rights). This liberalism assumes group allowances are required for human happiness and wellbeing. The tension between these two Liberalisms takes shape in the degree that public policy is used to meet the demands of recognition by various social identity groups (Taylor, 1994). Liberalism contains within it a potential contradiction between the claims of state neutrality and state group promotion that cannot be easily addressed. As Barry (2001 loc. 2740-2745) states:

> *Liberals find themselves exposed to conflicting pressures in relation to groups. Because of their fundamental commitment to the value of the individual, they cannot turn a blind eye to the potential that associations and communities have for abusing, oppressing and exploiting their members. Yet at the same time they recognize that much of every normal individual's wellbeing derives from membership in associations and communities. If the fulfilment of individuals depends on the flourishing of groups, it follows that groups must have rights of self-government. For a group that does not have the power to set its own course cannot be expected to have much life in it.*

To date most of the debate about where and how to resolve the tension between Liberalism 1 and 2 has been in political philosophy and political science. Yet psychology may provide relevant empirical evidence that can further this debate. Hitherto, psychology has not focused on degree to which the relative flourishing of social identity groups contributes to human wellbeing in ways that individual flourishing does not. The aim of this project, is a small step toward a research program on group needs. Our aim is to develop a well validated measure of group need satisfaction and frustration that can inform this debate.

GROUP NEED SATISFACTION SCALE

We take as a starting point the liberal view, stretching back to the American founding fathers, that the role of government is to ensure the general happiness of citizens from each of its constitute parts (Paine, 2011). With this 'happiness' end goal in mind we seek to provide a tool for empirical evidence to determine the degree to which social identity group need satisfaction is related to individual wellbeing. To do this, we take an SDT perspective and develop a measure of basic psychological needs that assesses the degree to which social identity group needs for autonomy, competence, and relatedness are satisfied or frustrated. Consistent with SDT (Ryan & Deci, 2017), we define group autonomy as the groups' ability to live according to their chosen values and to determine those values for authentically and agentically, free of coercion as a collective. Competence refers to the ability of the group to strive for, and influence, their social world as a function of their collective action. Relatedness refers to the ability of the group to be connected to and accepted by other groups within society and society as a whole. We suggest that Taylor's (1994) politics of recognition can be explored empirically by determining the degree to which groups feel these three group needs are satisfied. The politics of recognition refers to the striving for state recognition of one's social identity often accompanied by demands for changes in laws and regulations to ensure the continuation of that social identity. The politics of recognition can take the form of demands for equal treatment (*isothymia*) or superior treatment (*Megalothymia*; Fukuyama, 2018). Further, the degree to which need satisfaction is associated with the wellbeing of the individual members of these groups would provide empirical evidence that may inform the debates surrounding the politics of recognition.

SDT is useful for providing a basis for an empirical evaluation of the politics of recognition. SDT is clearly situated in Aristotelian (Ryan & Martela, 2016) and Kantian (Arvanitis, 2017) philosophy, and is an empirically validated 'necessary and sufficient' theory of human wellbeing (see Ryan & Deci, 2017 for an overview). Further, Ryan and Deci (2017) argue that SDT is not just a psychological theory but also a political one. SDT can determine whether society is oriented toward the good life of its citizens. In particular, Ryan and Deci (2017) claim that SDT can be used to identify systematic failures of governments by identifying when citizens basic psychological needs are ill met by policy. To date, SDT political implications have been in the tradition of liberal/individualist conceptions of justice (e.g. Rawls, 2009). SDT's political implications have focused on individuals' access to resources for need satisfaction and the removal of need frustrations. SDT can thus speak to issues relating to individual rights and responsibilities and to whether various government policies or cultural norms are in the interests of the individuals within their sphere of influence.

SDT has implications for the ethical responsibilities that governments may owe to social identity groups. Ryan and Deci (2017) already suggest SDT can provide a framework to discuss what should be the liberal approach to issues such as female genital mutilation. SDT also has applications in discussions about issues such as whether it is important to grant sovereignty to minority ethnic groups; the ethical responsibility of governments' apologies to persecuted minority groups; or to recognise the legitimacy of the fears that people have that laws and regulations will weaken the integrity of their group identity (see Sandel, 2012 for examples). Some recent research suggests that SDT should acknowledge that individuals respond to both their own needs and that of their group (Kachanoff et al., 2017, 2019).

SDT's political science tools have focused on identifying disintegration in political discourse (e.g., where individuals simultaneously argue that they follow a practice because they endorse it and because they fear ostracism). It is argued that such disintegration represents social structures that require individuals to make 'tragic choices' between two needs (Nussbaum, 2011). For example totalitarian governments often require citizens to make a choice between relatedness and autonomy by demanding unquestioned fealty to the state (Arendt, 1973). By extending SDT to include group needs, additional research avenues for political psychology are opened up including:

1. Do group needs predict outcomes over-and-above individual needs? Put simply do group needs matter (Liberalism 2) or is meeting individual needs sufficient (Liberalism 1)?
2. If group needs are important, are they consistently important or does the importance of group needs depend on the importance individuals ascribe to their social identity or the type of social identity group?
3. Is there evidence of the detrimental effects of 'tragic choices' between individual and group needs (e.g., you can have individual autonomy but only if your group autonomy is dissolved—this demand is often implicit in debates around Indigenous persons quests for sovereignty or in discussing rights of minority ethnicities in multi-nation states)?
4. As there are tragic choices between individual needs, there may be tragic choices between group needs. For example, *isothymia* (the desire for groups to be respected as an equal with other groups) occurs when group need satisfaction is low. *Megalothymia* (the demand to be considered superior) may emerge when groups feel their need for competence can only be satisfied at the cost of relatedness.

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The answer to these questions may provide powerful empirical evidence that can be used in current debates about the politics of recognition. The aim of this paper is to provide a ground work for this sort of research by developing and validating a suitable measure of group need satisfaction and frustration. Our initial focus is on religious, ethnic, and sexual minority social identity groups as these have been explored in the literature on the politics of recognition (Fukuyama, 2018; Taylor, 1994). To this we add political social identity groups. We chose to include political group identity given the rapid increase in political polarization in recent years (Pew Research Center, 2017) and findings from political science that political affiliation appears to be a social identity group more so than an ideological commitment (Kinder & Kalmoe, 2017).

Current Study

We test and then reduce the factor structure of a measure of group autonomy, competence, and relatedness satisfaction and frustration. The aim is to build a scale with strong psychometric properties that is similar in size to the individual basic needs satisfaction and frustration scale (B. Chen et al., 2014). We then apply a range of models to the group needs scale that have been applied to the individual need scale. We then consider the degree to which the group needs scale is invariant across countries. We test models in two Anglophone countries—Australia and the United States—where concerns relating to the politics of recognition have been prominent. We also consider measurement invariance across social identity group, and gender. We then consider the relationship between individual and group needs, and the relationship between these factors and wellbeing, social identity centrality, and a measure of Rawls primary goods (primary goods are those goods that were argued by Rawls to be wanted by, and useful to, all humans; Rawls, 2009).

Methods

Participants

Participants came from two independent samples from Australia (N = 2081) and the United States (N = 1493) recruited by the survey company Qualtrics. Demographics for both samples are in Table 1. As this was the first time this scale was being used, we restricted participation only to those individuals who claimed a link to one of four social identity groups: sexual minority, ethnic minority, religious group, or political group (for reasons please see above). Participants responded to items in relation to the social identity group to which they felt most attached. During data collection individuals who provided constant responses to all items on a scale were excluded and a new participant was selected.

Table 1

Basic Demographics

	Australia	USA
Percentage female	51%	79%
Percentage male	48%	20%
Percentage non-binary, other, would rather not say	1%	1%
Mean Age (SD)	41.9 (14.9)	41.8 (17.5)
Social Identity Group		
Sexual minority	21%	22%
Ethnic minority	24%	18%
Political group	20%	18%
Religious group	36%	43%
Education level		
Some school	>1%	>1%

High-school graduation	1%	1%
Vocational	47%	36%
University	51%	63%

Materials

Group needs. The social identity group need satisfaction and frustration scale (hereafter group needs scale) was constructed by Richard Ryan with input from Philip Parker and Jasper Duineveld. In contrast to the individual basic need satisfaction and frustration scale (hereafter individual needs scale), the focal object was the participants self-defined social identity group (e.g., "my group is able to…"). Table 2 provides the items and descriptives. All standardized skewness and kurtosis was less than 2. Reliabilities are presented in the results. All factor loadings were high. We started with 30 items, but the aim was to reduce this scale to 24 items to be consistent with the individual needs scale.

Individual needs. Individual needs were assessed using the basic need satisfaction and frustration scale (Chen et al., 2014). This 24 item scale measures satisfaction and frustration with autonomy, competence, and relatedness needs. Omega reliabilities in the current data ranged from .80 for autonomy satisfaction to .89 for competence frustration.

Validation scales. We assessed the construct validity of the group needs scale not only in relation to individual needs but also in relation to two measures of wellbeing (general wellbeing and a multidimensional measure of satisfaction with life), a measure of social identity group identity centrality, and a measure of Rawls primary goods.

General wellbeing. Wellbeing was measured using the short scale of the Scales of General Wellbeing (Longo, Coyne, & Joseph, 2018). This scale has been validated as a reflective congeneric factor and displayed good reliability and construct validity in samples similar to ours. In our sample the omega reliability was .95.

Multidimensional life satisfaction. Multidimensional life satisfaction was taken from a subset of items from the personal wellbeing index (Cummins, Eckersley, Pallant, van Vugt, & Misajon, 2003). The question we selected were those most pertinent to the study purpose including satisfaction with: standard of living, health, safety, future prospects, job prospects, government, and the economy. Typically, a single reflective latent factor is fit to the data from this scale. In the current research the omega reliability was .87.

Social group identity centrality. Identity centrality was measured by adapting several items from the cultural identity scale of Kuroda, Palmer, and Nakazawa (2017). The adapted items are:
1. How knowledgeable are you about issues affecting your group?
2. How involved are you in activities related to your group?
3. How often do you associate with people from your group?
4. How comfortable are you in the company of members of your group?
5. How knowledgeable are you about your group identity?
6. How important is it for you to maintain your group identity?
7. How strongly do you identify as a member of your group?
8. Are you happy that you are a member of your group?
9. How knowledgeable are you about the history of issues involving your group?
The omega reliability for this scale was .92.

Rawls primary goods. We measured primary goods using the 17 item Rawls Primary Goods index by De Haan (2018). This index measured access to basic rights ("My rights and freedoms are protected in this society"), freedom ("I am free to travel and live where I want to in this country"), power of office ("I am free to vote in elections, and participate in the civic life of my community"), standards of living ("I have access to enough healthy food and safe drinking water"), and self-respect ("I have often experienced unfair discrimination"). Unlike the other measures, the primary goods measure was designed to be a formative rather than reflective factor. Thus, concepts like reliability do not apply. Rather, we checked the variance inflation factors (VIF) of the items. All VIFs were less than 5 and greater than 1. This indicated that we did not have redundant items and that all items made a significant contribution to the index. A single principal component was taken to construct the index, and this index was used in all subsequent analysis.

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Analysis

Analysis was done using R 3.5.0, particularly the psych (Revelle, 2017) and Lavaan (Rosseel, 2012) packages. Latent models were also fitted using Mplus (L. Muthén & Muthén, 2012). Major construct validity was conducted using Confirmatory Factor Analysis (CFA), Higher-order Confirmatory Factor Analysis (HCFA), and set-Exploratory Structural Equation Modelling (set-ESEM). Set-ESEM (Marsh et al., 2019) was used for basic needs scales to allow for cross-loadings between satisfaction factors or between frustration factors but cross-loadings between a frustration and a satisfaction scale were restricted to zero. Set-ESEMs provide a more optimal balance between parsimony and the accounting for true cross-loadings that are likely present in the population (Marsh et al., in press). Fit was assessed at traditional levels via the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI). Measurement invariance was assessed in relation to a change in the RMSEA of >.015 and in the CFI of <.01 (F. F. Chen, 2007). Given that we typically round the results to 2 decimal places, we signal in tables when these thresholds have been crossed.

For scale reduction we used the algorithm proposed by Marsh et al. (2005). Here candidate items for deletion are determined via inspection of target factor loadings, inspection of modification loadings for cross-loadings and residual error variance correlations. We ignored Marsh and colleagues criteria for missing data given that missing was less than 0.35% for every item.

Table 2
Group Needs Scale Descriptives

Scale	Item	Mean	SD	%Min/%Max	Loading Original CFA	Loading Reduced CFA
Autonomy Satisfaction	My group is free to live in accordance with our beliefs	5.71	2.69	9.6/9.12	.67	.68
Autonomy Satisfaction	My group is able to determine our identity for ourselves	6.06	2.61	6.83/10.49	.64	.65
Autonomy Satisfaction	My group can express our core values	4.84	2.82	17.4/6.3	.71	.73
Autonomy Satisfaction	My group is able to pursue what matters most to us	5.94	2.68	8.39/10.69	.76	.78
Autonomy Satisfaction	My group has a clear voice within the larger culture	6.19	2.63	7.53/11.36	.70	--
Autonomy Frustration	My group remains oppressed in many ways	7.34	2.28	2.77/21.35	.75	.75
Autonomy Frustration	My group's opinions and concerns are often ignored	7.59	2.10	1.51/22.5	.75	.76
Autonomy Frustration	My group is not free to live according to our central values	7.58	2.12	1.59/22.86	.65	--
Autonomy Frustration	My group is held back by other forces in society	7.40	2.09	1.73/18.83	.73	.74
Autonomy Frustration	My group often suffers from external pressures and controls	6.73	2.28	2.83/12.65	.67	.68
Competence Satisfaction	My group is effective in protecting our values and practices	5.18	2.56	10.72/5.12	.73	.73

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Competence Satisfaction	My group is able to accomplish our aims	4.84	2.64	15.7/4.45	.78	.79
Competence Satisfaction	My group is successful in pursuing what is important to us	4.67	2.62	16.37/3.58	.78	.78
Competence Satisfaction	My group is capable of advocating for itself	4.98	2.79	16.26/6.13	.69	--
Competence Satisfaction	My group can make things happen when we need to	4.69	2.67	17.32/4.5	.71	.71
Competence Frustration	My group has little power or influence	7.33	2.09	1.68/17.26	.67	.67
Competence Frustration	My group is helpless amidst other social forces	7.12	2.04	1.51/13.96	.73	--
Competence Frustration	My group is not very effective in achieving our goals	7.32	2.10	1.99/17.24	.69	.71
Competence Frustration	My group is often incapable of acting as a whole	7.57	2.07	1.48/21.88	.62	.63
Competence Frustration	My group can't make any real change happen	7.20	2.11	1.62/16.87	.69	.71
Relationship Satisfaction	My group is included in the larger culture	5.69	2.76	10.18/9.82	.68	.67
Relationship Satisfaction	My group is generally accepted within society	6.44	2.72	7.25/15.72	.79	--
Relationship Satisfaction	My group has gained a sense of belonging within country and society	4.31	2.70	21.68/4.17	.78	.78
Relationship Satisfaction	My group is valued and respected	5.82	2.73	9.26/10.02	.79	.79
Relationship Satisfaction	My group is positively recognized by other groups and organizations	5.25	2.66	11.53/7.11	.76	.76
Relationship Frustration	My group has been isolated and often rejected by other groups	6.89	2.29	3.33/14.55	.77	.78
Relationship Frustration	My group faces ongoing prejudice and stigma	6.66	2.30	3.78/11.25	.69	.71
Relationship Frustration	My group is disconnected from society	6.80	2.26	2.94/13.51	.63	.73
Relationship Frustration	My group is often not accepted or recognized as important	6.51	2.35	4.31/10.97	.73	--
Relationship Frustration	My group is not cared about in our society	6.54	2.33	4.06/11.02	.74	.72

Notes. Items is **BLACK** are those retained in the final scale. Items in GREY are those dropped from the final model. %Min/%Max = The percentage of the sample that scored either the lowest possible (min) or highest possible (max) score on the 10-point Likert scale.

Results

The results section is organised as follows. First, we aim to reduce the scales length by one-fifth. Second, we explore construct validity using basic CFA, HCFA, and set-ESEM. Second, we consider multi-group invariance for these models across country, social identity group, and gender. Third, we considered the relationship between basic needs at the group and individual level. Fourth, we consider the correlation between basic and group needs with two wellbeing scales, a measure of group identity centrality, and a measure of Rawls' primary goods.

Scale Reduction

In constructing the group needs model we created one item more per scale than we believed necessary. The aim was to use the collected data to reduce the scale to four items per scale consistent with the individual basic needs satisfaction and frustration scale (Chen et al., 2014). Before scale reduction however we considered the fit this original scale. This scale provided an acceptable fit to the data ($\chi^2[390]=4883$, RMSEA = .056 [.054, .057], CFI = .92, TLI = .92). Average factor loading ranged from .68 for competence frustration to .76 for relationship satisfaction. Omega reliabilities ranged from .81 for relationship satisfaction to .87 for competence frustration. While the fit of this model was acceptable, the scale was considered too long for practical purposes. Thus, we used Marsh and colleague's (2005) approach to scale reduction. Doing so we reduced the length of the instrument by one-fifth. The items deleted are in grey in Table 2.

The now reduced scale provided a good fit to the data ($\chi^2[237]=2388$, RMSEA = .049 [.047, .051], CFI = .95, TLI = .94). Average factor loadings were high and ranged from .68 for competence frustration to .75 for competence satisfaction. Omega reliability was also strong and ranged from .77 for competence satisfaction to .84 for relationship frustration. As with the individual level basic needs satisfaction and frustration scale, the group needs scale had high relationships between scales. These can be found in Table 3.

Table 3
Relationship Between Group Needs and Omega Reliability

	ω	1.	2.	3.	4.	5.	6.
1. Autonomy Satisfaction	.80	1	-.29	.74	-.37	.76	-.30
2. Autonomy Frustration	.82	-.24	1	.14	.37	-.20	.66
3. Competence Satisfaction	.84	.95	-.21	1	-.48	.57	-.02
4. Competence Frustration	.77	-.41	.64	-.48	1	-.31	.57
5. Relatedness Satisfaction	.84	.79	-.37	.78	-.32	1	-.55
6. Relatedness Frustration	.83	-.25	.96	-.21	.62	-.48	1

Notes: CFA on lower diagonal and ESEM on upper diagonal

The high correlations among constructs is consistent with SDT theory and empirical findings. Individual need satisfaction scales also tend to be highly correlated due to the tendency for need satisfactions or frustrations to converge. However, often these correlations are too high for practical purposes. For individual need satisfaction, need satisfaction and frustration are often treated as higher-order factors in an HCFA—that is, a general satisfaction and frustration scale (e.g., Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). In addition, we explore the relatively recently developed set-ESEM as a way of trying to maximise parsimony and practical fit considerations (Marsh et al., 2019). We combined set-ESEM with target rotation and an *a priori* target rotation matrix that expresses an *a priori* measurement structure—that is, cross-loadings having a target rotation factor loading of approximately zero. This provided greater ability to match the measurement model to the underlying theory.

Higher-Order CFA

Here the three satisfaction factors load onto a common need satisfaction factor and the three frustration factors load onto a common need frustration factor. In our case the fit of this model was acceptable ($\chi^2[245]=2474$, RMSEA = .060 [.058, .062], CFI = .93, TLI = .92). Average loadings on the higher order factors were .87 for need frustration and .92 for need satisfaction. The correlation between need frustration and satisfaction was -.31, $p < .001$.

Set-ESEM with Target Rotation

In our case, the set-ESEM with target rotation provided an excellent fit to the data ($\chi^2[201]=570$, RMSEA = .023 [.021, .025], CFI = .99, TLI = .98). Factor loadings were still reasonable, ranging from .47 for autonomy frustration to .74 for relationship satisfaction. Correlations between scales were greatly reduced (see Table 3).

Invariance Testing

Next we explore invariance across gender, country, and social identity category. In all cases there was clear evidence of configural, metric, and scalar invariance (see Tables 3-5). Combining our findings in relation to model fit, latent correlations, and invariance. In line with our construct validity findings, our suggestion is that researchers seeking to use the group needs scale use either the set-ESEM—when interested in the specific factors—or HCFA when seeking to explore the combined effect of need satisfaction and frustration. All subsequent analysis focuses on these two models.

Table 3
CFA Invariance Models

Model	χ^2	df	RMSEA	CFI	TLI	$\Delta\chi^2(df)$	ΔRMSEA	ΔCFI
Gender								
Configural	2721	474	.049	.95	.94			
Metric	2752	498	.048	.95	.95	31(24)	.001	.00
Scalar	2840	516	.048	.95	.95	88(17)***	.001	.00
Country								
Configural	2669	474	.048	.95	.95			
Metric	2706	498	.047	.95	.95	37(24)*	.001	.00
Scalar	2879	516	.048	.95	.95	173(17)***	-.001	.00
Social Identity Group								
Configural	3566	948	.051	.95	.94			
Metric	3740	1020	.050	.94	.94	174(72)***	-.001	.00
Scalar	4146	1074	.053	.94	.93	406(54)***	.003	.01

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

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Table 4
HCFA Invariance Models

Model	χ^2	df	RMSEA	CFI	TLI	$\Delta\chi^2(df)$	ΔRMSEA	ΔCFI
Gender								
Configural	3813	490	.060	.93	.92			
Metric	3873	520	.058	.93	.92	60(30)***	.002	.00
Scalar	3963	536	.058	.92	.92	90(16)***	.000	>.01
Country								
Configural	3682	490	.058	.93	.92			
Metric	3779	520	.057	.93	.92	97(30)***	-.001	.00
Scalar	3953	536	.058	.93	.92	174(16)***	.001	.00
Group								
Configural	4699	980	.061	.92	.91			
Metric	4953	1070	.060	.92	.91	254(90)***	-.001	.00
Scalar	5358	1118	.061	.91	.91	405(48)***	.001	>.01

Table 5
Set-ESEM Invariance Models

Model	χ^2	df	RMSEA	CFI	TLI	$\Delta\chi^2(df)$	ΔRMSEA	ΔCFI
Gender								
Configural	760	246	.022	.99	.98			
Metric	850	192	.022	.99	.98	90(54)***	.000	.00
Scalar	886	174	.022	.99	.98	37(18)**	.000	.00
Country								
Configural	757	246	.022	.99	.98			
Metric	875	192	.023	.99	.98	187(54)***	.001	.00
Scalar	940	174	.023	.98	.98	76(18)***	.000	>.01
Group								
Configural	1233	804	.024	.99	.98			
Metric	1547	966	.026	.98	.98	308(162)***	.002	.00
Scalar	1794	1020	.029	.97	.97	305(54)***	.003	>.01

Latent Mean Differences

Using the scalar mean invariance model as a basis we explored differences in latent means. There was evidence of mean differences by gender. Women scored lower on group competency satisfaction (D = .25, p >.001) satisfaction. Women also scored higher on autonomy (D = .11, p = .002), competency (D = .38, p >.001), and relatedness (D = .12, p = .005) frustration. In the HCFA, women had the higher need satisfaction (D = .11, p = .005) and lower need frustration (D = .14, p >.001).

When comparing countries, the United States had higher levels of competence satisfaction (D = .38, p >.001), as well as autonomy (D = .35, p >.001) and relatedness (D = .21, p >.001) frustration. Australian participants were only higher on competency frustration (D = .25, p >.001). In the HCFA model US participants had both higher satisfaction (D = .16, p = >.001) and frustration (D = .17, p >.001). Differences by social identity group are presented in Table 6 but generally show that religious group members showed higher satisfaction and lower frustration than all groups. Sexual minorities followed by ethnic minorities had the most frustration and the lowest satisfaction levels.

Table 6
Cohen's D Mean Differences

Factor - Religious group as Reference Group	Sexual Minority	Ethnic Minority	Political
Set-ESEM			
Autonomy Satisfaction	-.74***	-.56***	-.34***
Autonomy Frustration	.94***	.26***	.45***
Competence Satisfaction	-.09	-.33***	-.26***
Competence Frustration	.41***	.50***	.31***
Relatedness Satisfaction	-.40***	-.30***	-.11***
Relatedness Frustration	.58***	.29***	-.03
HCFA			
Need Satisfaction	-.36***	-.34***	-.18***
Need Frustration	.61***	.29***	.17***

Relationship between Individual and Group Basic Need Satisfaction and Frustration

We next explored the relationship between basic need satisfaction and frustration in the individual and group scales. For this we explored by the HCFA and the set-ESEM model. The fit of the set-ESEM model, applying the same structure to both group and individual constructs, fit the data well ($\chi^2[942]=2050$, RMSEA = .018 [.017, .019], CFI = .98, TLI = .98). The correlation matrix between the individual and group need satisfaction can be found in Table 7. These correlations revealed that both individual and group need satisfaction and frustration had very similar internal structures. Indeed, Cattell's profile similarity index across all constructs was .80 (.99 for satisfaction constructs and .58 for frustration constructs). While there were clear relationships between the two scales, individual and group need satisfaction and frustration scales were not so strongly correlated to suggest that participants could not distinguish between them. For example, the average correlation between matching factors in the individual and group scales was .38.

Including both individual and group basic need satisfaction and frustration in a single higher order model (i.e., identical higher order structures for both individual and group needs) resulted in a good fit to the data ($\chi^2[1062]=5790$, RMSEA = .041 [.040, .042], CFI = .93, TLI = .93). The correlation structure can be found in

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Table 8 and suggests much the same picture as in the set-ESEM results though the correlations between individual and groups scales were slightly higher.

Table 7
Correlation Structure of Individual and Group Needs Scales: Set-ESEM

Construct	1	2	3	4	5	6	7	8	9	10	11	12
Group												
1.Aut Sat	1											
2.Aut Frust	-.25	1										
3.Comp Sat	.76	.12	1									
4. Comp Frust	-.37	.38	-.48	1								
5.Rel Sat	.75	-.12	.58	-.31	1							
6.Rel Frust	-.28	.66	-.04	.57	-.56	1						
Individual												
7.Aut Sat	.50	-.05	.47	-.12	.44	-.07	1					
8.Aut Frust	-.21	.36	-.12	.45	-.14	.36	-.36	1				
9.Comp Sat	.40	-.02	.40	-.09	.36	-.04	.77	-.29	1			
10. Comp Frust	-.20	.29	-.12	.37	-.13	.29	-.37	.74	-.57	1		
11.Rel Sat	.44	-.02	.45	-.19	.35	-.06	.72	-.29	.67	-.35	1	
12. Rel Frust	-.25	.24	-.19	.50	-.09	.32	-.29	.73	-.35	.75	-.56	1

Notes. Grey highlights within construct correlations. Boxed correlations are matching correlations between individual and group needs. Aut = autonomy, Comp = competence, Rel = relationship, Sat = satisfaction, Frust = frustration.

Table 8
Correlation Structure of Individual and Group Needs Scales: HCFA

Construct	1.	2.	3.	4.
1. Group Need Satisfaction	1			
2. Group Need Frustration	-.31	1		
3. Individual Need Satisfaction	.57	-.08	1	
4. Individual Need Frustration	-.22	.44	-.52	1

Notes. Grey highlights within construct correlations. Boxed correlations are matching correlations between individual and group needs.

Relationship with Criterion Variables
In the final set of analyses we looked at the correlation of both individual and group needs with two measures of wellbeing—one that emphasised more psychological aspects of wellbeing (general wellbeing) and one

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that emphasised contextual evaluations of different life domains (personal wellbeing). In addition, we also considered the relationship between group and individual needs and social identity centrality and a measure of Rawls' primary goods. Results are presented in Tables 9-10. Group needs were significantly related to all criterion variables and in expected patterns for both the set-ESEM and the HFA models. Individual needs tended to be a stronger positive predictor of the psychological measure of wellbeing but relationships were of a similar strength for the other variables. As expected, and showing the unique profile of group needs, identity centrality was positively related to group needs regardless of whether the construct was a need satisfaction or a need frustration measure in all but one case—a weak negative relationship with competence frustration. In contrast individual need satisfaction was positively related to identity centrality and negatively—or non-significantly—related to need frustration. Group needs were most strongly associated with primary goods.

Table 9
Needs Scales Correlation with Covariates: Set-ESEM

	General Wellbeing	Personal Wellbeing	Identity Centrality	Primary Goods
Group				
Autonomy Satisfaction	.38***	.30***	.33***	.46***
Autonomy Frustration	-.10***	-.21***	.23***	-.31***
Competence Satisfaction	.30***	.12***	.54***	.22***
Competence Frustration	-.05**	.07**	-.10***	-.29***
Relatedness Satisfaction	.38***	.42***	.18***	.41***
Relatedness Frustration	-.14***	-.21***	.20***	-.41***
Individual				
Autonomy Satisfaction	.73***	.46***	.36***	.47***
Autonomy Frustration	-.38***	-.20***	.02	-.43***
Competence Satisfaction	.72***	.39***	.33***	.42***
Competence Frustration	-.53***	-.25***	-.06**	-.42***
Relatedness Satisfaction	.62***	.30***	.39***	.45***
Relatedness Frustration	-.36***	-.05**	-.10***	-.45***

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$.

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Table 10
Needs Scales Correlation with Covariates: HCFA

	General Wellbeing	Personal Wellbeing	Identity Centrality	Primary Goods
Group				
Need Satisfaction	.40***	.30***	.41***	.41***
Need Frustration	-.11***	-.19***	.19***	-.41***
Individual				
Need Satisfaction	.83***	.47***	.43***	.53***
Need Frustration	-.50***	-.20***	-.06**	-.50***

Notes. $* p < .05$, $** p < .01$, $*** p < .001$.

Conclusion

The aim of this paper was to establish a validated measure of group need satisfaction and frustration grounded in SDT—focused on the needs of autonomy, competence, and relatedness. This measure can be used to inform debates ranging from communitarianism vs. liberalism, to group sovereignty, to the politics of recognition. Results show that our group needs measures had good construct validity—including for both the original and reduced scale—and a factor structure that resembled need satisfaction for individuals. Yet, we also found that group needs were only moderately related to individual needs. This suggests these are different spheres of human experience. The group need satisfaction and frustration scale was invariant across country, gender, and social identity group. Women and US participants had greater need frustration and satisfaction. Of the social identity groups we focused on, religious participants tended to be the most satisfied and least frustrated. Sexual minorities were the most frustrated and least satisfied. Finally, group needs were moderately related to wellbeing, identity centrality, and primary goods. These relationships were of a similar size to the same relationships with individual wellbeing—with the exception of psychological wellbeing where individual needs were more strongly related than group needs.

The group needs measure provides a valid, short measure that can be used in political science and political psychology to provide empirical evidence that can inform debates about what governments owe social identity groups. Results suggest that using either an HCFA—when general satisfaction and frustration is of interest—or a set-ESEM approach—when specific needs are of interest—are both viable choices for analyzing either group or individual needs. Future research should focus on: a) whether group needs predict outcomes over-and-above individual needs; b) whether there are interactions between individual and group needs or between specific group needs when predicting outcomes that may reveal the presence of tragic choice; and c) the relative level of group needs for different social identity groups or for people with different levels of commitment, centrality, or affiliation with a social identity group.

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