Dietary behaviour as a form of collective action: A social identity model of vegan activism

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Abstract

Adopting plant-based, or vegan, diets can have a number of benefits, including mitigating climate change, promoting animal welfare, or improving public health. In the current research, we use social psychological theory to better understand what motivates vegans to engage in collective action on behalf of this social group - that is, what motivates individuals to promote, or encourage others to adopt, a vegan lifestyle. We develop and test a Social Identity Model of Vegan Activism, which highlights the roles of individuals’ social identities, sense of efficacy, emotions and moral convictions in fostering collective action. In two pre-registered studies, the first with self-identified vegans from Australia and the UK (N = 351), and the second with self-identified vegans from the UK and the US (N = 340), we found that individuals more frequently engaged in vegan activism (i.e., actions to promote vegan lifestyles) when they had stronger moral convictions (i.e., deontological or consequentialist), greater collective efficacy (i.e., beliefs that vegans can make a positive difference), anger (i.e., when thinking about the reasons why they are vegan), and identification (both with vegans, and with animals). Deontological and consequentialist moral convictions had significant indirect effects on vegan activism via different mediators. We conclude by discussing the implications and importance of studying dietary behavior from a social identity perspective, including its ability to help explain how and why individuals become motivated to not only adopt a certain (e.g., vegan) lifestyle themselves, but to also ‘act collectively’ on behalf of that shared group membership (e.g., promote vegan-friendly behaviors). We also highlight some key insights for policy makers and campaigners aiming to promote plant-based diets.

1. Introduction

Plant-based diets can have many benefits for human health and animal welfare (Hemler & Hu, 2019; Katz & Meller, 2014; Vinnari & Vinnari, 2014). In addition, the production of animal products has been found to play a major role in greenhouse gas emissions and deforestation (IPCC et al, 2019). Given the urgent need to promote large-scale societal transitions that will reduce carbon emissions to meet the Paris climate commitments (i.e., limiting the rise in global average temperatures to below 1.5 °C; IPCC et al, 2019), a promising strategy is to encourage a societal transition towards diets low in animal products – which could include vegan diets/lifestyles that avoid all animal products (see also, Eker et al., 2019; Willet et al., 2019). Indeed, some climate scientists have suggested that “a vegan diet is probably the single biggest way to reduce your impact on planet Earth” (Carrington, 2018; Poore & Nemecek, 2018).

At present, most research in this area has conceptualised dietary behaviour as an individual lifestyle choice. However, we argue that current rates of production and consumption of animals (and animal products) are a social/collective phenomenon (i.e., determined not by ‘individual choice’, but by social and cultural processes; e.g., Ruby et al., 2013; Ruby et al., 2016), and thus, efforts to reduce the overproduction and overconsumption of animals could be tackled with a collective action approach. It is also clear that many vegans do not just adopt veganism as an individual dietary choice, but actively engage in behaviours to encourage others to do likewise, and to raise awareness of the benefits of veganism (e.g., Plante, et al., 2019; Thomas et al., 2019a). Thus, while it is important to examine the social, emotional and motivational factors...
that act as barriers and enablers of the individual adoption of a vegan diet, it is also important to examine the factors that motivate individuals to try to promote social change towards vegan lifestyles in wider society.

In this research, we examine whether individual vegans consider themselves to be part of a larger collective movement (i.e., report a shared sense of identification with other vegans), and examine the factors that motivate vegan activism, including both commonly examined motives (e.g., anger, collective efficacy, [vegan] group identification) and less commonly examined ones (e.g., deontological and consequentialist orientations, identification with animals). Thus, in full, we develop and test a Social Identity Model of Vegan Activism (SIMVA) by drawing on and extending the literature on collective action (e.g., Fritzsch et al., 2018; van Zomeren et al., 2008; van Zomeren et al., 2018), to examine the factors predicting the frequency of engaging in vegan activism. By “vegan activism”, we are referring to behaviours that are performed by individuals with an underlying collective social change orientation to promote the spread of vegan lifestyles in wider society (e.g., boycotting, buycotting, advocating, sharing knowledge, lobbying authorities or protesting).

1.1. Theorising social identities in dietary contexts

Until recently, veg*nism has primarily been studied as an individually-motivated behaviour. However, in the past few years, increasing attention has been paid to the idea that veg*nism and other dietary behaviours or labels represent social identities (e.g., Bagci & Olgun, 2019; Nezlek & Forestell, 2020; Plante et al., 2019; Rosenfeld & Burrow, 2018; Rosenfeld et al., 2020, p. 103963). As an example, some of the labels that individuals adopt to describe their dietary behaviour in relation to the consumption or avoidance of animal products include vegetarian, vegan, pescatarian, lacto-ovo vegetarian, flexitarian, omnivore and meat-eater. Researchers in this area argue that such dietary labels can also be conceptualised as social identities, whereby individuals who adopt these labels share a sense of identity with others who use these labels, value that identity positively, and derive a sense of self-esteem from that identity (e.g., Plante et al., 2019; Bagci & Olgun, 2019).

Most research on social identities in the context of consuming or avoiding animal products has identified the content of the social identity as a shared dietary pattern or practice, and has thus focused on ‘dietary identities’ (see the notion of a ‘dietary identity’; Rosenfeld & Burrow, 2018). In this paper, we argue that while a ‘vegan’ identity encompasses a shared set of (dietary) behaviours, it can also encompass other (non-dietary) behaviors and, most fundamentally, a shared set of values and beliefs (e.g., a particular moral conviction) that motivates adherence to the lifestyle and facilitates action-oriented norms (e.g., to encourage others to adopt veganism).1 In this way, it can be understood as not just a ‘dietary identity’ but as an opinion-based group identity (see Bluc et al., 2007). Speaking to this idea, the UK Vegan Society characterises veganism as “a way of living which seeks to exclude, as far as is possible and practicable, all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose.” (UK Vegan Society, n.d.). Notably, this statement describes veganism not simply as a dietary behaviour, but a ‘way of living’ or lifestyle that encompasses other types of behaviours. It also implies that a particular moral conviction motivates the lifestyle (i.e., the desire to exclude all forms of animal exploitation and cruelty). This is a statement of the shared values that help collectively define vegans as a group – coming from an institution that is arguably central to defining the group’s shared values.4 Thus, in addition to describing a dietary pattern or a particular set of practices, we argue that the label ‘vegan’ could also indicate membership in an opinion-based group, whose members have a shared moral conviction and play a role in promoting the adoption of plant-based diets in society.

1.2. Veganism and collective action

In many western countries, veganism has experienced a rapid increase in popularity over the past five years (e.g., “Veganism up 600%; Global Data, cited in Forgrieve, 2018). Moreover, while the number of people who identify as vegan remains a relatively small proportion of most western populations (e.g., 6% in the US; Global Data, cited in Forgrieve, 2018), plant-based foods are becoming increasingly popular and mainstream (Good Food Institute, 2019). Individual vegans might collectively be a potential source of social change; for example, by setting an example for others, actively advocating the reasons to “go vegan” to others, or signing petitions and protesting.5 This fits with the broader psychological literature on minority influence – in which a minority of committed individuals presenting a consistent message can, over time, contribute to wider societal change (e.g., Butera et al., 2017, pp. 317–337; Bolderdijk & Jans, 2012). The social change orientation of veganism is attested to by research that has documented negative reactions to vegans. For example, vegans who highlight a moral basis for their behaviour in interpersonal interactions may provoke backlash and experience negative personal consequences like stigmatization and ostracism (Minson & Monin, 2012; Maciniss & Hodson, 2017). Additionally, individuals high in right wing authoritarianism and social dominance orientation – who tend to dislike dissenting groups in society – express more negative attitudes towards vegans as a minority group in society that threatens cultural transitions and hierarchical structures like speciesism (Judge & Wilson, 2019; Maciniss & Hodson, 2017). From a more positive perspective, a vision of a benevolent vegan future society has been found to be related to higher support for policies to promote plant-based diets - even for people who eat meat (Judge & Wilson, 2015). Thus, it is clear that veganism is not, and is not perceived by others as, just an individual dietary choice, and that veganism as a social movement has the potential to inspire a societal shift - but also generate resistance to social change.

Although not often investigated in the collective action literature (but see Thomas et al., 2019a), we suggest that vegan activism aims to promote collective lifestyle changes, and would therefore benefit from being explored with similar theoretical frameworks. This notion of considering individual behaviours as a form of collective action has previously been mentioned in the collective action literature (e.g., “collective actions do not necessarily require actual collectives”; van Zomeren & Iyer, 2009, p. 646) and has also been proposed in recent research on the collective aspects of pro-environmental behaviour and environmental issues (Fritsche et al., 2018; Masson & Fritsche, 2021).

The Social Identity Model of Collective Action (SIMCA) is a prominent social psychological model of collective action, the components of which have been shown to account for much of the variance in collective action behaviours (see van Zomeren et al., 2018). In its initial formulation (van Zomeren et al., 2008) three core predictors of collective

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1 “veg*n” refers to both vegetarians and vegans.
2 This shares some similarities to recent theorising by Kurz et al. (2020), who categorise veganism as a “morally-motivated practice identity” that is based primarily around a shared practice (i.e., part of a broader category of “minority identities forged around specific moralized practices”, p. 7).
3 Interestingly, a recent study found that 60% of a sample of self-identified vegans (recruited via Australian vegan social media pages) preferred the UK statement over five other organizational statements, some of which referred only to consumer behaviours (North et al., 2021).
4 In a similar vein, other researchers have highlighted that dietary identities can be experienced as politicized identities (i.e., social identities that underpin collective actions and behavior; e.g., Chuck et al., 2016).
Firstly, unlike most targets of collective action research, vegans seem to apply to (and indeed extended by) examining the context of veganism. The research and theorising described here suggest that individuals’ identification with vegans and animals should be key determinants of their motivation to engage in vegan activism (hence being focal in the current research). At the same time, it is important to acknowledge that, like any social group, vegans are not monolithic and individuals identifying as vegan can hold multiple motivations for veganism beyond the UK Vegan Society definition (e.g., health, the environment, human rights, religious beliefs, anti-speciesism) (e.g., Janssen et al., 2016). Thus, while we propose that these are the theoretically most important identities for vegan activism, depending upon people’s motivation for veganism, they are likely to vary in the extent to which they identify with other vegans and animals.

1.2.3. Moral convictions

The third component of our model is moral conviction regarding veganism. Most collective action research, thus far, has conceptualised moral convictions in a deontological sense; that is, the perceived violation of universal moral rules or valued actions (e.g., strong and absolute attitudes on a moralized issue; van Zomeren, 2013, p. 381). We expand previous models by drawing on two philosophical theories of how people make moral judgments. Specifically, we examine deontological (i.e., duty-based) and consequentialist (i.e., consequence-based) orientations towards veganism. A deontological orientation refers to the tendency to view some acts as right or wrong regardless of the

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6 Hereafter we will use just the term ‘animals’ for simplicity.
consequences, whereas a consequential orientation refers to the tendency to judge an act as right or wrong depending on the consequences (Bentham, 1879/1983; Kant, 1785/1998; Tanner et al., 2008). In the context of veganism, we suggest that some vegans may have a predominantly deontological orientation towards veganism as a moral duty (e.g., viewing harming animals as intrinsically wrong, regardless of the consequences), whereas other vegans may have a predominantly consequentialist orientation based on supporting the overall positive consequences of veganism for society (e.g., viewing veganism is better for human health, animal welfare, and the environment).

Moral convictions at an individual level can drive the formation of a shared social identity (van Zomeren, 2013). We propose that deontological and consequentialist moral convictions will function in a similar way to individual differences variables (Agostini & van Zomeren, 2021), and will predict more contextually-specific variables such as group identification, collective efficacy and anger. That is, moral convictions are likely to be stable and transfer across different situations, whereas a sense of identity, efficacy and anger may be more variable across contexts.7 These two kinds of moral orientation are also likely to have different effects on the more proximal predictors of vegan activism (i.e., anger, collective efficacy, vegan identification and identification with animals). In particular, these moral convictions may be differentially associated with emotions like anger (see Section 1.2.4). In research on moral dilemmas, the two orientations have been suggested to involve different cognitive processes, in which deontological intuitions relate to empathy and emotional responses, and consequentialist intuitions relate to a need for cognition and cognitive processes (Conway & Gawronski, 2013). Since deontology focuses on rules and rule-breaking, we predict that there will be a stronger relationship between a deontological orientation and anger than the relationship between a consequentialist orientation and anger (see also Robinson, 2017).

1.2.4. Group-based anger

In the collective action literature, the group-based emotion most commonly included in models is anger or outrage (e.g., anger at the unjust treatment of the in-group by an outgroup) (van Zomeren et al., 2018). Anger is also likely to play a role in vegan activism; however, it is somewhat unclear who would be the target of this anger. Some current research directions might suggest that this anger would be directed towards people who are not vegan. For example, some vegans may view people who produce or consume animal products as a ‘outgroup’ with an oppositional ideology (e.g., the notion of carnism and ‘carnists’; Joy, 2010). However, this does not fit with the notion of engaging in conversionary vegan advocacy (e.g., Wright, 2009), which would involve making efforts to recruit ‘them’ (i.e., any non-veg*n) to ‘our side’ (e.g., it seems unlikely that anger towards new members would help with their recruitment). Additionally, the negative consequences of industrial animal agriculture can be most clearly understood as a systemic issue, rather than the responsibility of specific individuals or groups in society. That is, if vegans identify as an ally group on behalf of animals or the environment (as a ‘disadvantaged’ group), then the perceived source of harm in this context could be any one of the actors involved in production and consumption systems. Given these complexities, we aimed to avoid specifying a target of the anger (e.g., a specific event or group), and instead measured a general sentiment of anger regarding the reasons that someone has decided to become vegan (e.g., Halperin & Gross, 2011).

Fritsche et al. (2018) proposed that people who make an effort to do something for the environment most likely believe that their actions will only have a positive impact on the environment if others also engage in these behaviours. So, even private behaviours can be considered a form of collective action because there is an imagined efficacious social group. In regards to vegan activism, it is likely that vegans will be more motivated to continue with activism (at the risk of significant social costs), when they believe that vegans as a group have the ability to make a positive impact on society. Thus, perceived collective efficacy (i.e., ‘individuals’ beliefs that the group is able to achieve group goals through joint effort’; van Zomeren, 2013, p. 380) is likely to be another significant motivator of vegan activism.

1.3. The current research

To summarize, we propose that considering vegan as an opinion-based group identity can extend research and theory on collective action in at least three ways: 1) by focusing on the predictors of everyday vegan activism a form of “collective action” that is more individually-enacted in nature (rather than collective protests or political action); 2) by examining a social identity context that does not have such clear ‘in-groups’ and ‘outgroups’ (i.e., ‘non-vegans’ are not in an ‘outgroup’ but rather, are potential recruits); and 3) by examining different kinds of moral convictions and their consequences (e.g., deontological and consequentialist orientations differentially predicting anger). In addition to this, the current research can inform research on dietary identities and behaviours, by testing a social identity model of individual vegan activism, as a form of collective action. The key factors that we focus on in this context are moral convictions, vegan identification, collective efficacy, anger, and identification with animals. To test our hypotheses, we conducted two cross-sectional studies with vegans based in Australia, the UK and the US. We made the following hypotheses for both studies (these hypotheses were specified before the data were collected, and the analytic plan was pre-specified and any data-driven analyses are clearly identified and discussed)8:

H1. Deontological moral convictions will predict higher anger, higher collective efficacy beliefs, higher identification with vegans and higher identification with non-human animals.

H2. Deontological moral convictions will indirectly predict both individual and collective self-reported social change actions via anger, collective efficacy beliefs, identification with non-human animals and identification with vegans.

H3. Consequentialist moral convictions will predict higher collective efficacy beliefs and higher identification with vegans.

H4. Consequentialist moral convictions will indirectly predict individual and collective self-reported social change actions via collective efficacy beliefs and identification with vegans.

2. Study 1 method

2.1. Participants and procedure

Participants were 461 self-identified vegans who were recruited by advertising the study on Facebook groups related to veganism in Australia and the UK (e.g., Vegan Australia, Vegan UK). All individuals who completed the survey were offered a chance to win one of four AU

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7 We acknowledge that the paths could also go in the opposite direction (e.g., from identification with animals to moral conviction), as has been previously been proposed by other researchers (e.g., Thomas et al., 2012). In line with a recent meta-analysis by Agostini and Van Zomeren (2021) we have provided alternative “dual-chamber” models in the supplementary materials in which moral conviction and identification are parallel predictors of activism via collective efficacy and anger.

8 In the pre-registration form, H3 and H4 also include predictions regarding hope. However, upon reflection after submitting the pre-registration form, we realised we did not have a strong theoretical rationale for including hope in the model. Therefore, we have removed hope from our models and analyses, and added this idea to the Discussion instead.
Boycotted non-vegan businesses or companies/Advocated veganism to friends and family/Posted about veganism on social media/Tried to change food norms by setting an example for others/Signed a petition related to veganism” ($\alpha = 0.84$). High-cost vegan activism was measured with the following five items: “How frequently have you engaged in the following behaviours in the last 12 months?: Attended vegan potlucks or social events/Participated in vegan outreach stalls/Donated to vegan organizations/Participated in vegan protests, marches or street performances/Engaged in consultation, dialog and compromise with authorities (e.g., lobbying governments and industry to take action on vegan issues)” ($\alpha = 0.77$). The scale for each measure ranged from 1 (Never), 2 (Seldom), 3 (Occasionally), 4 (Often), 5 (Very frequently). A principal axis factoring analysis with direct oblimin rotation indicated that the items formed two clear factors. In the model, we focus on low-cost forms of activism rather than high-cost forms of activism, because the majority of participants had not engaged in high-cost activism in the past year ($M = 2.04$, $SD = 0.84$).

2.2.6. Identification with animals

We measured identification with animals using two items adapted from Amiot and Bastian (2017): “I feel a sense of solidarity with animals/ I feel committed to animals, as a group”. The scale ranged from 1 (strongly disagree) to 7 (strongly agree). ($r = 0.73$).

3. Study 1 results

Means, standard deviations and correlations between variables can be found in Table 1.

We tested the hypothesised model by conducting a path analysis in AMOS 25, in which we entered all predictors simultaneously and included the hypothesised paths between variables (see Fig. 1).$^9$ We made the following additions to the model based on the modification indices and a strong theoretical rationale: 1) We added paths from vegan identification to collective efficacy and anger, because researchers have argued that identification with a social identity can function to increase a sense of collective efficacy and group-based anger, because group members begin to view issues through a group lens and have heightened perceptions of relevant injustices as well as the groups’ power to address these injustices (e.g., van Zomeren et al., 2008; 2012a); 2) We added paths from identification with animals to vegan identification and anger, because it is likely that people who identify with animals also identify more strongly as a vegan. That is, when individuals identify with animals it represents a psychological positioning of animals as a type of “ingroup” member, and social identity theory suggests people are motivated to support, protect, defend, ingroup members. So, individuals might do this in part by engaging in vegan activism (hence the direct path to vegan activism) but also by committing themselves, psychologically, to other related groups that share a common value around, and that ultimately helps increase and protect animal welfare (hence the path from animal identification to vegan identification); 3) We added a path from consequentialist orientation to identification with animals, because this was suggested by the modification indices and it seems plausible that individuals endorsing a consequentialist orientation could also identify with animals (e.g., if they include animals in their view of society).

As recommended by Byrne (2010), model fit was assessed by indices such as GFI and CFI (values higher than 0.95 show good fit), SRMR (values less than 0.05 show good fit) and RMSEA (values from 0.05 to

$^9$ We also ran the same model with the “high-cost” variables, however, most of the predictors of vegan activism were non-significant, except for identification with vegans. We suggest that this is because the frequency of high-cost behaviours was very low, and thus there may have been a floor effect. In Study 2, we attempt to address this issue by measuring willingness to engage in the high-cost behaviours, rather than frequency of engagement.
The resulting path model (including non-significant paths) showed adequate fit, $\chi^2 = 16.36$, $df = 5$, $p = .006$, $\chi^2/df = 3.27$, GFI = .99, CFI = .98, SRMR = .03, RMSEA = .08. We ran bootstrapping with 5000 resamples to obtain significance tests for the indirect effects. In total, the predictors explained 32% of the variance in self-reported frequency of engaging in vegan activism. The total standardized indirect effect of deontological orientation on vegan activism was 0.25, 95%CI[0.15, 0.27] and the total standardized indirect effect of consequentialist orientation on vegan activism was 0.10, 95%CI[0.03, 0.12] (see the Supplementary Materials for all total, direct and indirect effects).

Thus, the hypotheses were partially supported. Consistent with the hypotheses, the effect of a deontological orientation on vegan activism was mediated through higher vegan identification, collective efficacy, anger, and identification with animals. Consistent with the hypotheses, the path from consequentialist orientation to anger was non-significant (though the absence of an effect is not evidence that an effect does not exist). Unexpectedly, however, there were no significant effects of consequentialist orientation on vegan identification or collective efficacy – only on identification with animals. In Study 2, we aimed to replicate the findings of Study 1 in a different sample, using refined measures. The hypotheses for Study 2 were the same as Study 1.

### 4. Study 2 method

#### 4.1. Participants and procedure

Participants were 340 residents (294 UK and 46 US) who followed a vegan diet and identified as a vegan. The participants were recruited via Prolific.co and paid £1.13 for a 9-min survey. We set pre-screening criteria that participants need to follow a vegan diet, identify as vegan, and reside in the UK or US. There were 242 female participants, 85 male participants and 13 participants who identified as non-binary (age range: 18–60, $M = 31.50$, $SD = 9.74$). They had been vegan for an average of 5.06 years ($SD = 5.09$). When asked to report the main reason why they continue to be vegan, 64.10% said concern for animals, 17.40% said concern for the environment, 14.10% said personal health, and 4.5% gave another reason. Ethics approval for this study was granted by the Human Ethics Committee at the University of Groningen (Ethics #: PSY-2021-S-0497). We pre-registered the hypotheses on the Open Science Framework prior to data collection (https://osf.io/fxqek).

#### 4.2. Measures

The measures for Study 2 were highly similar to those used in Study 1. We included a few more items per variable, and as in Study 1, measures were reliable. Specifically, we measured anger (three items, $\alpha = .94$), deontological orientation (three items, $\alpha = .81$) consequentialist orientation (three items, $\alpha = .78$), identification with vegans (three items, $\alpha = .92$), collective efficacy (four items, $\alpha = .96$), individual vegan activism (six items, $\alpha = .79$), and identification with animals (three items, $\alpha = .90$), in that order. In Study 2, we also added an additional measure of “high-cost” vegan activism as willingness rather than frequency, given that there would have been few opportunities to go to protests or social events in the past year, due to the Covid-19 pandemic.

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Table 1

|                      | M    | SD   | 1    | 2    | 3    | 4    | 5    | 6    |
|----------------------|------|------|------|------|------|------|------|------|
| 1. Deontological orientation | 5.94 | 1.21 |      |      |      |      |      |      |
| 2. CONSEQUENTIAL orientation | 5.86 | 1.33 | .44**|      |      |      |      |      |
| 3. Identification with vegans  | 5.30 | 1.04 | .34**| .23**|      |      |      |      |
| 4. Identification with animals | 6.35 | 0.97 | .29**| .29**| .35**|      |      |      |
| 5. Anger              | 4.50 | 1.72 | .34**| .16**| .22**| .30**|      |      |
| 6. Collective efficacy | 6.50 | 0.69 | .41**| .28**| .42**| .20**| .07  |      |
| 7. Vegan activism     | 3.59 | 0.79 | .41**| .29**| .41**| .32**| .28**| .45**|

**Fig. 1.** Path model predicting frequency of vegan activism (standardized coefficients). Model fit $\chi^2 = 16.36$, $df = 5$, $p = .006$, $\chi^2/df = 3.27$, GFI = .99, CFI = .98, SRMR = .03, RMSEA = .08. We also measured “high-cost” vegan activism as willingness rather than frequency, given that there would have been few opportunities to go to protests or social events in the past year, due to the Covid-19 pandemic.
exploratory qualitative item asking participants to list “one or two of the core defining characteristics of a vegan (e.g., their traits, attitudes, behaviours)” which we adapted from Turner-Zwinkels et al. (2017). The findings for this item are reported in the Supplementary Materials.

5. Study 2 results

The means, standard deviations and correlations between all variables in Study 2 can be found in Table 2. We again performed a path analysis in AMOS including the same hypothesised paths, as well as additional paths from vegan identification to collective efficacy and anger, and from identification with animals to vegan identification and anger. However, we did not include a path from consequentialist orientation to identification with animals, as this was a post-hoc decision in Study 1, and was not recommended by the modification indices in Study 2 (when we added this path, it was non-significant). Overall, the results were quite similar to Study 1, with the model showing adequate fit, $\chi^2 = 29.32, df = 6, p < .001, \chi^2/df = 4.89, GFI = 0.98, CFI = 0.97, SRMR = 0.04, RMSEA = 0.11$ (see Fig. 2). In combination, the variables explained 35% of the variance in collective activism, with a deontological orientation having a strong indirect effect (standardized indirect effect = 0.34, 95%CI[0.28, 0.40]) on vegan activism via all four mediators, but a consequentialist orientation having weak indirect effect (standardized indirect effect = 0.06, 95%CI[0.03, 0.11]) via one mediator (identification with vegans).

6. Discussion

While there has been increasing attention to the role of social identities in motivating and maintaining dietary behaviours (e.g., Bagci & Olgun, 2019; Nezlek & Forrestell, 2020; Plante et al., 2019; Rosenfeld & Burrow, 2018; Rosenfeld et al., 2020, p. 103963), there has been relatively less discussion of the content, function and consequences of specific social identities in this context. In this paper, we focused on the vegan social identity, and identified some of the key group-related factors that motivate vegans to engage in vegan activism, which can include behaviours such as consumer activism, knowledge sharing, and setting an example for others (i.e., trying to “be the change you wish to see in the world”). The current findings show that the frequency of engaging in vegan activism is predicted by similar variables to those that predict collective action in other identity-based contexts (e.g., collective action surrounding racial justice or environmental justice). Overall, the hypotheses were partially supported, with a deontological orientation having the predicted indirect effects on activism via anger, identification with vegans, identification with animals and group efficacy, but with a consequentialist orientation having relatively weak indirect effects via only identification with animals (Study 1) or identification with vegans (Study 2). In combination, moral convictions, vegan identification, collective efficacy, anger, and identification with animals, explained 32% of the variance in frequency of vegan activism behaviours in Study 1, and 35% of the variance in Study 2 (collective efficacy was a non-significant predictor in Study 2). This is comparable to the finding of 27% variance in collective action explained in a recent meta-analysis of the collective action literature (Augustini & van Zomeren, 2021). These results demonstrate the efficacy and importance of understanding veganism as a collective process, in addition to an individualised dietary behaviour. They further illustrate the capacity for models such as the SIMCA (van Zomeren et al., 2008) to be applied to less conventional contexts of collective action, and suggest areas of these models that could be expanded or modified (notably, here, group identification and moral conviction).

6.1. Theoretical implications

The current research has several novel theoretical implications. First, with regard to identification, it is useful to consider the potential for certain contexts of collective action to be fuelled by individuals’ identification with groups other than the in-group. Most previous research on collective action has conceptualised it as action on behalf of the in-group, typically in opposition to some specific outgroup. A broader perspective on identification has previously been explored with regard to advantaged groups (or third parties) taking action on behalf of disadvantaged outgroups (e.g., Klavina & van Zomeren, 2020; Thomas et al., 2019a; 2019b). Our results suggest that this notion of ‘allyship’ identities could be productively applied to vegans’ identification with non-human animals in the context of vegan activism. However, it should be noted the relationships between a sense of identification with animals and vegan activism were relatively weak in both studies. This could be due to a ceiling effect, since most of the participants strongly identified with animals. Another possible explanation is that just identifying with animals alone may not be enough to promote collective action on behalf of animals – there may need to be a perception that animals are being treated unfairly (i.e., seeing animals as a disadvantaged group), or a rejection of the ideology of speciesism (e.g., Cavaiola et al., 2019). Furthermore, it could be the case that identifying with an opinion-based group with action-oriented goals (i.e., vegans) may be a stronger predictor of action than identifying with animals alone.

Second, our results illustrate that the moral conviction construct in collective action (see van Zomeren et al., 2012a; 2018) could potentially be expanded. Here we have demonstrated that a given moral issue can be approached from the perspective of deontological or consequentialist morality, and that these two perspectives have different patterns of association with the more proximal predictors of vegan activism (e.g., a deontological orientation predicted anger, but a consequentialist orientation did not). Overall, participants did, on average, endorse the consequentialist orientation and it wasn’t highly correlated with the deontological orientation, supporting the value of this approach. This illustrates the potential for greater development of the role of moral conviction in collective action, and the importance of testing models such as SIMCA in non-traditional contexts as a means of expanding/-modifying the key constructs. However, this was one of the first studies to include a consequentialist orientation, and we should note that the findings for consequentialist orientations were relatively weak (i.e., a consequentialist orientation was only independently related to identification with animals in Study 1, and identification with vegans in Study 2). This could potentially be due to our sampling strategy, since in Study 1 we recruited participants from mainstream vegan social networking sites that may have had predominantly deontologically-oriented members, although Study 2 recruited a more general vegan sample from Prolific.co. Another possibility (as suggested by an anonymous reviewer) is that laypeople might not find it easy to distinguish between deontological and consequentialist items, and there could be better ways to measure these orientations. In this paper, we have conceptualised deontological and consequentialist orientations as relatively distinct. However, as stated by the authors of the scale that we adapted (Tanner et al., 2008), it is entirely possible for people to endorse both of these orientations. Future research could take a person-centred approach to these two orientations, to examine whether there are distinct profiles of vegans who endorse a relatively more deontological orientation, a relatively more consequentialist orientation, both orientations, or neither orientation. It would also be useful to examine alternative pathways via which consequentialist orientations may have an effect on collective action; for example, via emotions such as hope or sympathy (e.g., Robinson, 2017).

11 We ran the same model using the “high cost” activism measure as the outcome variable. The results were highly similar, except that the identification with animals to activism pathway was marginally significant ($p = .06$).

12 However, we should note that it is still unclear whether vegans seem themselves as ‘allies’ of animals, or just include animals in their ingroup.
Third, the current research suggests that it is useful to consider how best to operationalize and arrange the predictors of collective action in contexts that involve systemic ‘wicked’ problems, without clear advantaged and disadvantaged groups (see also Fritsche et al., 2018). For example, in our studies, we simply asked about whether participants experience anger when thinking about the reasons why they are vegan, rather than asking about a specific perceived injustice. Although most collective action research focuses on a perceived injustice with a harmful agent, it may be possible that groups attempting to promote social change to improve society or to address systemic issues do not necessarily perceive a salient ‘outgroup’ that is the target of anger. This possibility is supported by some of our exploratory analyses in the Supplementary Materials, which show that vegans perceive multiple actors as responsible for the consequences of meat production and consumption (to varying degrees).

It is also important to note that we did not include other emotions that might be relevant in these contexts in our models, such as hope. In their responses to a qualitative item, several of the participants mentioned hope-related traits as one of the core defining characteristics of vegans (see Supplementary Materials). The role of hope in motivating vegan activism beyond the standard collective action variables (and perhaps relating to a consequentialist orientation) is a promising area for future research (e.g., van Zomeren et al., 2019). We also tested two different arrangements of the model (i.e., with moral orientations predicting identity, or with moral orientations and identity as parallel predictors – see Supplementary Materials), and found that both arrangements fit the data relatively well. This is consistent with previous research in this area, which has found that multiple arrangements of the predictors can fit the data, since these processes are dynamic (Agostini & van Zomeren, 2021; Thomas et al., 2012). Future research could test alternative arrangements like the EMSICA model (Thomas et al., 2012), or test the predictors longitudinally, to provide more support for the proposed causal relations of the paths (e.g., Thomas et al., 2020).

Fourth, it is possible that some predictors are simply not as relevant in this context. For example, we found mixed results for collective efficacy, with this being a strong predictor in Study 1, but a weaker predictor in Study 2. Given the high correlation between vegan identification and collective efficacy in Study 2, it is possible that the weaker effect for collective efficacy could have been due to multicollinearity in the data (though the multicollinearity measures were below the cut-off). Alternatively, the participants in Study 1 may have felt more collective efficacy, due to being embedded in vegan social networks, whereas the vegans in Study 2 may have been isolated individuals with fewer ties to vegan social networks. More research is needed to clarify this finding.

Finally, it is important to consider whether the current model is only relevant specifically to the context of vegans, or whether it would function similarly with other groups. For example, an empirical question is whether the model would also operate similarly among vegetarians or members of other lifestyle-based social movements (e.g., the zero-waste movement). Given our arguments in the introduction, we expect that the model would also fit in the context of vegetarians, but would perhaps explain less variance in behaviours, due to the lesser emphasis on shared moral convictions and social change norms in the vegetarian (vs. vegan) movement. However, this is an area for future research.

### Table 2
Means, standard deviations and bivariate correlations between all variables (Study 2).

|                  | M    | SD   | 1    | 2    | 3    | 4    | 5    | 6    |
|------------------|------|------|------|------|------|------|------|------|
| 1. Deontological orientation | 5.42 | 1.40 |      |      |      |      |      |      |
| 2. Consequentialist orientation | 5.72 | 1.23 | .49**|      |      |      |      |      |
| 3. Identification with vegans  | 4.94 | 1.43 | .49**| .33**|      |      |      |      |
| 4. Identification with animals | 5.99 | 1.07 | .46**| .20**| .37**|      |      |      |
| 5. Anger          | 4.03 | 1.85 | .46**| .19**| .39**| .38**|      |      |
| 6. Collective efficacy | 5.76 | 1.01 | .46**| .34**| .62**| .40**| .30**|      |
| 7. Vegan activism | 3.07 | 0.85 | .51**| .32**| .51**| .39**| .42**| .44**|

Fig. 2. Path model predicting frequency of vegan activism (standardized path coefficients). Model fit $\chi^2 = 29.32$, df = 6, $p < .001$, $\chi^2/df = 4.89$, GFI = 0.98, CFI = 0.97, SRMR = 0.04, RMSEA = 0.11.
6.2. Applications

The current research on the collective aspects of dietary behaviours could help identify what motivates people to engage in vegan activism, which could then help with developing campaigns to promote the diffusion of plant-based innovations in a particular societal context. Organizations aiming to promote plant-based diets may benefit from considering the collective factors that motivate people to engage in advocacy, in addition to individual behaviours. Some of these factors may be motivating for some audiences and less motivating for other audiences. For example, although anger was a predictor of advocacy, there is mixed evidence regarding whether messages expressing negative emotions motivate people to adopt pro-environmental behaviours (Gulliver et al., 2021). Given the common stereotype of the “angry militant vegan” (de Groeve et al., 2021; Minson & Monin, 2012), it may be prudent to use strategies in organizational messaging that relate more to identity and efficacy than anger; however, this is also an area that needs more research. Furthermore, encouraging a vegan social identity may also protect against the negativity and stigmatization that some vegans report experiencing (e.g., Macinnis & Hodson, 2017; Markowski & Roxburgh, 2019). It is important to consider the potential benefits and disadvantages of vegan advocacy, especially in interpersonal interactions. Research on morally-motivated deviance suggests that moral exemplars (or morally-motivated innovators) have the potential to inspire others and increase uptake of a moral behaviour (e.g., Bolderdijk et al., 2018). However, in some contexts (e.g., where the observer is personally involved in the less moral behaviour) morally-motivated deviance can also increase resistance and result in the derogation and ostracism of the morally-motivated individual (Minson & Monin, 2012; Macinnis & Hodson, 2017). This may have downsides for the social movement as a whole. For example, a recent study found that vegetarians experience anxiety regarding their interactions with vegans who are motivated by animal concerns, which was correlated with less collective action and lower intentions to remain vegetarian (Macinnis & Hodson, 2021). More research is needed in this area.

6.3. Limitations and future research

Some of the methodological limitations of the current research include that it is cross-sectional, uses path analysis rather than structural equation modelling (due to the relatively small sample sizes) and did not examine actual behaviours. Future research could manipulate some of the predictors of vegan activism (e.g., identification with vegans) and test the consequences for actual behaviours such as the willingness to advocate veganism to another participant, or willingness to share a post on social media advocating veganism. There are also limitations of the current research related to the measures we have used; for example, the deontological and consequentialist orientation scales could be improved in the future, or an alternative measure could be used (e.g., Piazza & Sousa, 2014).

Another limitation is that the sample for Study 1 was recruited from specific mainstream Facebook sites, and therefore is not likely to be representative of the entire population of vegans (many of whom may not even engage with vegan social media networks) - although Study 2 collected data from Prolific panelists and may have included more diversity. Thus, it is possible that there are groups of vegans that are not represented in the current sample and have different kinds of motivations and moral convictions. For example, there are specific social networks for vegan feminism (http://veganfeministnetwork.com/), food empowerment (https://foodpower.org/), and vegans of color (http://www.vegansmofcolor.com/). Future research could recruit a broader range of participants, and could also benefit by including identification with the environment or with workers in food systems as additional forms of identification. Longitudinal research would also be useful, since the meanings of social identities can be highly dynamic - especially for opinion-based groups - and, like the term, ‘environmentalist’, there may be multiple meanings attached to the word ‘vegan’ (i.e., it may be polysemic in nature; e.g., Tesch, & Kempton, 2004).

Another area for future research could be to attempt to integrate research on the role of ideological attitudes in the adoption of and resistance to veg*nism, with the current collective action approach. For example, research has found that higher (lower) social dominance orientation predicts more (less) meat consumption and more negative (positive) attitudes towards animals (e.g., Dhont & Hodson, 2014; Dhont et al., 2014). Ideological attitudes may fit in the SIMVA in a similar place as moral conviction (Agostini & van Zomeren, 2021) – that is, people who are low in social dominance orientation (SDO) may be motivated to engage in collective action to promote dietary transitions, and people who are high in SDO may be motivated to engage in collective action against dietary transitions.

An interesting future research area, is the consequences of vegan discrimination for vegan activism. That is, whether vegans’ experiences of stigmatization and discrimination reduce vegan activism, lead them to engage in more advocacy for vegans (e.g., advocating anti-discrimination laws for vegans) or to engage in more advocacy for veganism in general. A recent paper applied the rejection-identification model to the context of veganism and found that perceptions of discrimination tended to be associated with stronger vegan identity needs and wellbeing (Bacig & Olgun, 2019). However, as we have argued in Section 1, it is likely that the ‘in-group’ (i.e., vegans) is not always necessarily perceived as the ‘disadvantaged’ group, and that stronger vegan identities may instead promote ‘other-focused’ actions. Future research could explore the role of perceived vegan discrimination in vegans’ willingness to advocate to others.

In this study, we focused primarily on the role of a vegan social identity because we were interested in understanding the factors that motivate vegan activism (e.g., advocating veganism to friends and family). However, it is possible that many individuals who identify as vegan may not identify so strongly with a vegan social identity, and instead may consider this practice as consistent with a broader social identity, such as environmentalist, animal rights activist, feminist, and so on. Related to this, it could be the case that a vegan identity is incorporated within a broader social justice orientation that is reflected in multiple ‘ally’ identities. An important avenue for future research is how people conceptualise their ‘dietary’ or ‘vegan’ identity in relation to their other social identities.

6.3.1. Conducting social psychological research on “dietary” identities

On a broader note, we would like to propose that current approaches to researching social identities in the context of veg*nism might need to be critically evaluated. As noted above, collective action is often construed in terms of action against an outgroup on behalf of the ingroup, and several programmes of research on veg*nism appear to try to construct a similar intergroup context (e.g., ‘veg*ns’ versus ‘omni-vores’ or ‘meat-eaters’). This has a number of potentially problematic implications. Firstly, this practice may assign non-veg*ns with an identity that relates to their dietary behaviour, when they do not necessarily identify strongly with this behaviour (potentially inadvertently reinforcing their commitment to the behaviour). A recent study identified at least four profiles of people who consume animal products, ranging from committed meat eaters, people willing to reduce meat consumption, potential veg*ns and individuals who are undecided (Gleek et al., 2019). Of the sample, only 46% described themselves as strongly committed to meat consumption. Therefore, when people select ‘omnivore’ as their dietary identity when participating in a psychological study, this does not necessarily indicate their broader attitudes and beliefs regarding meat consumption (see Hopwood & Bleidorn, 2019 for different profiles relating to rationalizing meat consumption).

Secondly, the common social psychological practice of constructing a binary oppositional divide tends to reinforce a common stereotype of ‘angry’ vegans as being hostile towards ‘non-vegans’, when it is seems...
that there could be much more nuance to this issue. For example, it seems possible that non-vegans would be seen as potential recruits who are simply unaware of the consequences of their actions (which admittedly could be somewhat patronising; Wright, 2009). Additionally, in market-based societies, multiple actors could be labelled ‘responsible’ for the negative consequences of meat production and consumption, including consumers, farmers, companies, and governments (see also, Lindenberg & Steg, 2013). Indeed, in our exploratory analyses (see Supplementary Materials), vegan participants tended to rate consumers and companies as equally responsible for the consequences of animal agriculture. Thus, for vegans, the target of anger may not necessarily be the behaviour of individual ‘omnivores’, but rather, the ideological and institutional structures that support harmful production processes (of which individual consumers are just one element). We recommend that future research examines the source of perceived moral violations in the context of veganism, and that researchers in this area consider including a more nuanced approach to labelling and researching the ‘groups’ in this context (i.e., not just framing the social context as ‘omnivores’ vs. ‘vegans’).

### 6.4. Conclusion

In order to understand the growing popularity of plant-based diets in western societies, it is vital to examine how social change processes might be happening at the micro level – in everyday people’s social change-oriented behaviour. In this paper, we developed and tested a social identity-based model of the factors that motivate vegan activism, and have highlighted the contributions of several predictors that have been found to motivate collective action in other contexts. Our findings suggest that “who we are” (i.e., vegan identities) and “what we (will not) stand for” (i.e., moral convictions) are important components in everyday vegan activism (e.g., van Zomeren et al., 2018). We argue that, on a collective level, vegan activist behaviours are likely to have a significant impact on the widespread adoption of (and potentially, resistance to) plant-based diets in society. Thus, research on vegan activism could be a key component to understanding broader societal transitions in dietary behaviours.

### Author contributions

MJ and JF designed and conducted the studies, and CB contributed to the design of the survey. MJ analysed the data and drafted the manuscript. All authors participated in writing and giving feedback on the manuscript. All authors read and approved the final manuscript.

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### Ethical statement

Ethics approval for this study was granted by the Human Ethics Committee at the University of Melbourne (Study 1; Ethics #: 1852095.6) and by the Human Ethics Committee at the University of Groningen (Study 2; Ethics #: PSV-2021-S-0497). We pre-registered the confirmatory hypotheses on the Open Science Framework prior to data collection (https://osf.io/mk2zt; https://osf.io/fxeqk). Participants gave informed consent before taking part in the study.

### Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request. Study materials can be accessed on the Open Science Framework at the following links: https://osf.io/qt88v/ (Study 1), https://osf.io/wrkce/in (Study 2).

### Declaration of competing interest

The authors declare no conflicts of interest.

### Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.appet.2021.105730.

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