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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 recruited via Prolific (*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.

Keywords: Veganism; collective action; social identities; moral conviction; identification with animals.

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Dietary Behaviour as a Form of Collective Action: A Social Identity Model of Vegan Activism

Journal Pre-proof

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Journal Pre-proof

1 **Dietary Behaviour as a Form of Collective Action: A Social Identity Model of Vegan**
2 **Activism**

3 1 Introduction

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

14 At present, most research in this area has conceptualised dietary behaviour as an
15 individual lifestyle choice. However, we argue that current rates of production and consumption
16 of animals (and animal products) are a *social/collective phenomenon* (i.e., determined not by
17 'individual choice', but by social and cultural processes; e.g., Ruby et al., 2013; Ruby et al.,
18 2016), and thus, efforts to reduce the overproduction and overconsumption of animals could be
19 tackled with a *collective action* approach[1]. It is also clear that many vegans do not just adopt
20 veganism as an individual dietary choice, but actively engage in behaviours to encourage others
21 to do likewise, and to raise awareness of the benefits of veganism (e.g., Plante, et al., 2019;
22 Thomas et al., 2019a). Thus, while it is important to examine the social, emotional and
23 motivational factors that act as barriers and enablers of the *individual* adoption of a vegan diet, it

[1] This approach is similar to recent arguments that pro-environmental behaviours can be conceptualised as a form of collective action (Fritsche et al., 2018).

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1 is also important to examine the factors that motivate individuals to try to promote *social change*
2 towards vegan lifestyles in wider society.

3 In this research, we examine whether individual vegans consider themselves to be part of
4 a larger collective movement (i.e., report a shared sense of identification with other vegans), and
5 examine the factors that motivate vegan activism, including both commonly examined motives
6 (e.g., anger, collective efficacy, [vegan] group identification) and less commonly examined ones
7 (e.g., deontological and consequentialist orientations, identification with animals). Thus, in full,
8 we develop and test a Social Identity Model of Vegan Activism (SIMVA) by drawing on and
9 extending the literature on collective action (e.g., van Zomeren et al., 2008, van Zomeren et al.,
10 2018; Fritsche et al., 2018), to examine the factors predicting the frequency of engaging in vegan
11 activism. By "vegan activism", we are referring to behaviours that are performed by individuals
12 with an underlying collective social change orientation to promote the spread of vegan lifestyles
13 in wider society (e.g., boycotting, buycotting, advocating, sharing knowledge, lobbying
14 authorities or protesting).

15 **1.1 Theorising Social Identities in Dietary Contexts**

16 Until recently, veg*nism[2] has primarily been studied as an individually-motivated
17 behaviour. However, in the past few years, increasing attention has been paid to the idea that
18 veg*nism and other dietary behaviours or labels represent *social identities* (e.g., Bagci & Olgun,
19 2019; Nezlek & Forestell, 2020; Plante, et al., 2019; Rosenfeld & Burrow, 2018; Rosenfeld, et
20 al., 2020). As an example, some of the labels that individuals adopt to describe their dietary
21 behaviour in relation to the consumption or avoidance of animal products include vegetarian,
22 vegan, pescatarian, lacto-ovo vegetarian, flexitarian, omnivore and meat-eater. Researchers in
23 this area argue that such dietary labels can also be conceptualized as social identities, whereby

[2] "veg*n" refers to both vegetarians and vegans.

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1 individuals who adopt these labels share a sense of identity with others who use these labels,
2 value that identity positively, and derive a sense of self-esteem from that identity (e.g., Plante, et
3 al., 2019; Bagci & Olgun, 2019).

4 Most research on social identities in the context of consuming or avoiding animal products
5 has identified the content of the social identity as a *shared dietary pattern or practice*, and has
6 thus focused on 'dietary identities' (see the notion of a 'dietarian identity'; Rosenfeld & Burrow,
7 2018). In this paper, we argue that while a 'vegan' identity encompasses a shared set of (dietary)
8 behaviours, it can also encompass other (non-dietary) behaviors and, most fundamentally, a
9 shared set of values and beliefs (e.g., a particular moral conviction) that motivates adherence to
10 the lifestyle and facilitates action-oriented norms (e.g., to encourage others to adopt veganism)[3].
11 In this way, it can be understood as not just a 'dietary identity' but as an opinion-based group
12 identity (see Bliuc et al., 2007). Speaking to this idea, the UK Vegan Society characterises
13 veganism as "a way of living which seeks to exclude, as far as is possible and practicable, all
14 forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose." (UK
15 Vegan Society, n.d.). Notably, this statement describes veganism not simply as a dietary
16 behaviour, but a 'way of living' or lifestyle that encompasses other types of behaviours. It also
17 implies that a particular moral conviction motivates the lifestyle (i.e., the desire to exclude all
18 forms of animal exploitation and cruelty). This is a statement of the shared values that help
19 collectively define vegans as a group – coming from an institution that is arguably central to
20 defining the group's shared values[4]. Thus, in addition to describing a dietary pattern or a
21 particular set of practices, we argue that the label 'vegan' could also indicate membership in an

[3] 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).
[4] 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).

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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; Bolderdijk & Jans, 2021). 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; Macinnis & 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; Macinnis & 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 &

[5] 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).

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1 Wilson, 2015). Thus, it is clear that veganism is not, and is not perceived by others as, just an
2 individual dietary choice, and that veganism as a social movement has the potential to inspire a
3 societal shift - but also generate resistance to social change.

4 Although not often investigated in the collective action literature (but see Thomas et al.,
5 2019a), we suggest that vegan activism aims to promote collective lifestyle changes, and would
6 therefore benefit from being explored with similar theoretical frameworks. This notion of
7 considering individual behaviours as a form of collective action has previously been mentioned
8 in the collective action literature (e.g., "collective actions do not necessarily require actual
9 collectives"; van Zomeren & Iyer, 2009, p. 646) and has also been proposed in recent research
10 on the collective aspects of pro-environmental behaviour and environmental issues (Fritsche et
11 al., 2018; Masson & Fritsche, 2021).

12 The Social Identity Model of Collective Action (SIMCA) is a prominent social
13 psychological model of collective action, the components of which have been shown to account
14 for much of the variance in collective action behaviours (see van Zomeren et al., 2018). In its
15 initial formulation (van Zomeren et al., 2008) three core predictors of collective action were
16 identified: group identification, collective efficacy and group-based anger (or sometimes, the
17 perceived injustice underlying that anger). Later formulations of the model have included the
18 role of moral convictions in collective action (e.g., van Zomeren et al., 2011; 2012a). This model
19 has been successfully applied to explain collective action in a wide range of contexts, including
20 recently in the context of pro-environmental behaviour (i.e., the Social Identity Model of Pro-
21 Environmental Behaviour, SIMPEA; Fritsche et al., 2018). There are also related models such as
22 the Encapsulated Model of Social Identity in Collective Action (EMSICA; Thomas et al., 2012)
23 that focus on the same core predictors of collective action but reverse the directions of some of
24 the pathways in the model (i.e., with anger and efficacy leading to greater social identification).
25 We draw on insights from this existing theory and research on collective action to develop our

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current framework, in which we investigate the best-fitting configuration of these variables in the novel context of veganism.

We propose that the collective action literature could be usefully applied to (and indeed extended by) examining the context of veganism. Firstly, unlike most targets of collective action research, vegans seem to focus more on changing *individual behaviours* or advocating veganism within social networks, than protesting or political actions (see also Thomas et al.'s, 2019a, concept of "lifestyle activists"; Fernandes- Jesus' (2018) notion of "lifestyle politics" and Wright's 2009 concept of "conversionary collective action"). Secondly, vegans often report being motivated by concern for others (e.g., animals, the environment), rather than a concern for the needs of the in-group (i.e., vegans) (Janssen, et al., 2016). So, it is likely that there are multiple relevant social identities in this context, beyond the typical binary in-group/outgroup divide that characterises much of the collective action literature (see also Dixon et al., 2020). Thirdly, in regard to moral convictions, the nature of the moral orientation towards the issue (i.e., deontological or consequentialist) or the specific perceived moral violation (e.g., harm to animals, the environment, workers or other consumers) may be more variable than in other collective action contexts.

Thus, in keeping with the SIMCA model, we expect that perceptions of collective efficacy (i.e., the extent to which vegans perceive that their group can make an impact in terms of social change) and anger (e.g., regarding the exploitation of animals or the destruction of the natural environment) will predict vegan activism. As noted above, however, the ways in which we conceptualise moral conviction and group identification in this context depart from, and expand upon, the SIMCA formulation. We expand briefly on each of these ideas below.

1.2.1 Defining Vegan Activism

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The first component of our model is vegan activism. We suggest that vegan activism often tends to focus on "low cost" or more individualised forms of action (e.g., boycotting, buycotting, interpersonal persuasion, sharing posts on social media), in part because meat consumption is such a widespread and normative behaviour in many cultures, that efforts to promote top-down changes via governmental policies may generate strong resistance. For example, it may be necessary to first persuade a proportion of the population that veganism is beneficial – or at least not harmful – and to change environmental factors such as the availability of plant-based foods, before attempting to engage more 'top down' forms of support. Thus, we focus on these kinds of behaviours in the current research (but also measure more high-cost behaviours, for interest).

1.2.2 Group Identities

The second component of the model relates to group (or social) identities. Given that a 'vegan' identity is voluntarily adopted, we suggest that this group identity could be similar to an opinion-based group identity (e.g., Bliuc et al., 2007) or politicized identity (Simon & Klandermans, 2000). In particular, we argue that the normative content of a vegan identity is likely to be action-oriented (e.g., as shown by the common joke, "How do you know if someone is vegan at a party? Don't worry, they'll tell you"). For some vegans, it is likely that they recognize a shared set of behaviors, qualities and values, that help define and distinguish "vegans" as a social group, and, when seeing oneself through the lens of this (shared) social group, undergo a process of depersonalization whereby they see the self not so much as an individual (not as an "I") but as a *member* of that group (as a "we;" i.e., a collective self-construal) (Tajfel 1981; Turner et al., 1987; van Zomeren, 2013). This ultimately fosters a motivation to behave in ways that are group-normative and serve the group's shared interests. In the context of veganism, this includes engaging in forms of vegan-promoting collective action, which likely entails 'spreading the word' about the benefits of veganism and encouraging others

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1 to see the value in engaging in vegan-friendly practices (thereby promoting the group's interests,
2 as their shared values become more prominently recognized and appreciated in society).

3 In addition to these arguments, we propose there are two likely possibilities regarding the
4 specific content of a vegan social identity. Firstly, a vegan social identity in its broadest
5 interpretation could be an opinion-based group that is simply 'pro-vegan'. That is, vegans could
6 be a group of people who are defined by a shared belief that veganism is a positive thing for
7 society (whether for the benefits to animals, health or the environment), and therefore feel a
8 sense of *identification with other vegans* who share a belief that it is important to promote vegan
9 lifestyles. Secondly, or in addition, given the UK Vegan Society definition, and the fact that
10 concern for non-human animals[6] is one of the most commonly-reported motivations for
11 veganism, it is likely that some vegans may be motivated to engage in vegan activism by a strong
12 sense of *identification with animals*. That is, vegans may view their social identity as more of an
13 'ally' identity on behalf of (farmed) animals as a disadvantaged group (e.g., Radke et al., 2020;
14 Thomas, et al., 2019a). Although most research on collective action has focused on contexts in
15 which the action benefits the in-group, some studies have expanded collective action models to
16 investigate allyship actions on behalf of a disadvantaged outgroup (van Zomeren, 2013; e.g.,
17 Thomas et al., 2019b, Klavina & van Zomeren, 2020; Schmitt et al., 2019). In this study, we use
18 a measure of identification with animals from Amiot and Bastian (2017); specifically, the
19 solidarity subdimension, which involves a sense of commitment and bonding with fellow group
20 members, and has been found to be associated with collective action intentions on behalf of
21 animals (Amiot et al., 2020).

22 The research and theorizing described here suggest that individuals' identification with
23 vegans and animals should be key determinants of their motivation to engage in vegan activism

[6] Hereafter we will use just the term 'animals' for simplicity.

Journal Pre-proof

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1 (hence being focal in the current research). At the same time, it is important to acknowledge that,
2 like any social group, vegans are not monolithic and individuals identifying as vegan can hold
3 multiple motivations for veganism beyond the UK Vegan Society definition (e.g., health, the
4 environment, human rights, religious beliefs, anti-speciesism) (e.g., Janssen et al., 2016). Thus,
5 while we propose that these are the theoretically most important identities for vegan activism,
6 depending upon people's motivation for veganism, they are likely to vary in the extent to which
7 they identify with other vegans and animals.

8 ***1.2.3 Moral Convictions***

9 The third component of our model is moral conviction regarding veganism. Most
10 collective action research thus far has conceptualised moral convictions in a deontological sense;
11 that is, the perceived violation of universal moral rules or sacred values (i.e., "strong and
12 absolute attitudes on a moralized issue"; van Zomeren, 2013, p. 381). We expand previous
13 models by drawing on two philosophical theories of how people make moral judgments.
14 Specifically, we examine deontological (i.e., duty-based) and consequentialist (i.e., consequence-
15 based) orientations towards veganism. A deontological orientation refers to the tendency to view
16 some acts as right or wrong regardless of the consequences, whereas a consequential orientation
17 refers to the tendency to judge an act as right or wrong depending on the consequences
18 (Bentham, 1879/1983; Kant, 1785/1998; Tanner et al., 2008). In the context of veganism, we
19 suggest that some vegans may have a predominantly deontological orientation towards veganism
20 as a moral duty (e.g., viewing harming animals as intrinsically wrong, regardless of the
21 consequences), whereas other vegans may have a predominantly consequentialist orientation
22 based on supporting the overall positive consequences of veganism for society (e.g., viewing
23 veganism is better for human health, animal welfare, and the environment).

24 Moral convictions at an individual level can drive the formation of a shared social
25 identity (van Zomeren, 2013). We propose that deontological and consequentialist moral

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1 convictions will function in a similar way to individual differences variables (Agostini & van
2 Zomeren, 2021), and will predict more contextually-specific variables such as group
3 identification, collective efficacy and anger. That is, moral convictions are likely to be stable and
4 transfer across different situations, whereas a sense of identity, efficacy and anger may be more
5 variable across contexts[7]. These two kinds of moral orientation are also likely to have different
6 effects on the more proximal predictors of vegan activism (i.e., anger, collective efficacy, vegan
7 identification and identification with animals). In particular, these moral convictions may be
8 differentially associated with emotions like anger (see Section 1.3.4). In research on moral
9 dilemmas, the two orientations have been suggested to involve different cognitive processes, in
10 which deontological intuitions relate to empathy and emotional responses, and consequentialist
11 intuitions relate to a need for cognition and cognitive processes (Conway & Gawronski, 2013).
12 Since deontology focuses on rules and rule-breaking, we predict that there will be a stronger
13 relationship between a deontological orientation and anger than the relationship between a
14 consequentialist orientation and anger (see also Robinson, 2017).

15 ***1.2.4 Group-Based Anger***

16 In the collective action literature, the group-based emotion most commonly included in
17 models is anger or outrage (e.g., anger at the unjust treatment of the in-group by an outgroup)
18 (van Zomeren et al., 2018). Anger is also likely to play a role in vegan activism; however, it is
19 somewhat unclear who would be the target of this anger. Some current research directions might
20 suggest that this anger would be directed towards people who are not vegan. For example, some
21 vegans may view people who produce or consume animal products as a 'outgroup' with an
22 oppositional ideology (e.g., the notion of carnism and 'carnists'; Joy, 2010). However, this does

[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

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1 not fit with the notion of engaging in conversionary vegan *advocacy* (e.g., Wright, 2009), which
2 would involve making efforts to recruit 'them' (i.e., any non-veg*ns) to 'our side' (e.g., it seems
3 unlikely that anger towards new members would help with their recruitment). Additionally, the
4 negative consequences of industrial animal agriculture can be most clearly understood as a
5 *systemic* issue, rather than the responsibility of specific individuals or groups in society. That is,
6 if vegans identify as an ally group on behalf of animals or the environment (as a 'disadvantaged'
7 group), then the perceived source of harm in this context could be any one of the actors involved
8 in production and consumption systems. Given these complexities, we aimed to avoid specifying
9 a target of the anger (e.g., a specific event or group), and instead measured a general sentiment of
10 anger regarding the reasons that someone has decided to become vegan (e.g., Halperin & Gross,
11 2011).

12 ***1.2.5 Collective Efficacy***

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

22 **1.3 The Current Research**

23 To summarize, we propose that considering vegan as an opinion-based group can extend
24 research and theory on collective action in at least three ways: 1) by focusing on the predictors of
25 everyday vegan activism a form of "collective action" that is more individually-enacted in nature

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1 (rather than collective protests or political action); 2) by examining a social identity context that
2 does not have such clear 'in-groups' and 'outgroups' (i.e., 'non-vegans' are not in an 'outgroup'
3 but rather, are potential recruits); and 3) by examining different kinds of moral convictions and
4 their consequences (e.g., deontological and consequentialist orientations differentially predicting
5 anger). In addition to this, the current research can inform research on dietary identities and
6 behaviours, by testing a social identity model of individual vegan activism, as a form of
7 collective action. The key factors that we focus on in this context are moral convictions, vegan
8 identification, collective efficacy, anger, and identification with animals. We have made the
9 following hypotheses (these hypotheses were specified before the data were collected, and the
10 analytic plan was pre-specified and any data-driven analyses are clearly identified and
11 discussed)[8]:

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

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

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

[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.

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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$50 gift cards (Australian participants) or one in four £30 (UK participants) for a vegan supermarket. After removing responses that did not complete at least 95% of the survey, the resulting sample was 351 individuals (51% from Australia/New Zealand and 47% from the UK), who ranged in age from 18 to 68 (M = 35.07, SD = 12.01), with 289 individuals identifying their gender as female, 51 identifying as male, and 9 identifying with another option (e.g., non-binary), and 9 responses missing. The average length of time as a vegan was 6.26 years (SD = 7.62). The motivations for veganism that were rated as important included animals, the environment, health and human rights. However, when asked to identify their single most important motivation, 81% of participants stated "the animals".

Ethics approval for this study was granted by the Human Ethics Committee at the University of Melbourne (Ethics #:1852095.6). We pre-registered the hypotheses on the Open Science Framework prior to data collection (https://osf.io/mkezt). In the results section, we distinguish confirmatory and exploratory analyses, and describe any deviations from the pre-registered hypotheses and analysis plan. The measures included in the survey were presented in the following order, and were presented alongside other scales that were not included in the analyses (see the Supplementary Materials for a complete list of measures).

2.2 Measures

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1 ***2.2.1 Anger***

2 We measured Anger with three items (interspersed among items measuring other
3 emotions. including sadness, hope, guilt and compassion): "When you think about the reason(s)
4 why you are vegan, to what extent do you feel the following emotions... angry/furious/outraged"
5 ($\alpha = .91$). The scale ranged from 1 (*Not at all*) to 7 (*Very much).*

6 ***2.2.2 Moral Convictions***

7 We measured moral convictions towards veganism using three items per moral
8 orientation (adapted from Tanner et al, 2008). An example deontological orientation item is "I
9 am vegan...because it is consistent with the principles one should have to follow" ($\alpha = .69$), and
10 an example consequentialist orientation items is, "I am vegan… because in terms of its overall
11 consequences for society as a whole, it is the best of all available options" ($\alpha = .80$). The scale
12 ranged from 1 (*Not at all relevant*) to 7 (*Very relevant).* The two factors were supported by a
13 principal axis factoring analysis showing that consequentialist and deontological components
14 explained 49.49% and 18.66% of the variance respectively (see Table S1 in the Supplementary
15 Materials). The scales were moderately positively correlated ($r = .44$, $p < .001$), similar to what
16 has been found in previous research (e.g., Sacchi et al., 2014).

17 ***2.2.3 Identification with Vegans***

18 We measured identification with vegans with the following two items adapted from
19 Klavina and van Zomeren (2020): "I feel a sense of solidarity with other vegans." I feel
20 committed to vegans, as a group", ($r = .63$). The scale ranged from 1 (*strongly disagree)* to 7
21 (*strongly agree).*

22 ***2.2.4 Collective Efficacy***

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1 We measured collective efficacy with two items adapted from van Zomeren et al.
2 (2012b). We adapted the existing items to focus on efficacy in making a general positive impact
3 (rather than addressing a specific issue): "I believe that, as a group, vegans can collectively act to
4 make a positive difference", "I believe that vegans, together, can achieve their goal of making a
5 positive difference." (r = .74). The scale ranged from 1 (*strongly disagree)* to 7 (*strongly agree).*

6 ### *2.2.5 Frequency of Vegan Activism*

7 Low-cost vegan activism was measured with the following six items: "How frequently
8 have you engaged in the following behaviours in the last 12 months?... Actively supported vegan
9 businesses or companies/ Boycotted non-vegan businesses or companies/ Advocated veganism to
10 friends and family/ Posted about veganism on social media/ Tried to change food norms by
11 setting an example for others/ Signed a petition related to veganism" (α = .84). High-cost vegan
12 activism was measured with the following five items: "How frequently have you engaged in the
13 following behaviours in the last 12 months?... Attended vegan potlucks or social events/
14 Participated in vegan outreach stalls/ Donated to vegan organizations/ Participated in vegan
15 protests, marches or street performances/ Engaged in consultation, dialog and compromise with
16 authorities (e.g., lobbying governments and industry to take action on vegan issues)"(α = .77).
17 The scale for each measure ranged from 1 (*Never*), 2 (*Seldom*), 3 (*Occasionally*), 4 (*Often*), 5
18 (*Very frequently*). A principal axis factoring analysis with direct oblimin rotation indicated that
19 the items formed two clear factors. In the model, we focus on low-cost forms of activism rather
20 than high-cost forms of activism, because the majority of participants had not engaged in high-
21 cost activism in the past year (M = 2.04, SD = .84)

22 ### *2.2.6 Identification with Animals.*

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1 We measured identification with animals using two items adapted from Amiot and
2 Bastian (2017): "I feel a sense of solidarity with animals/ I feel committed to animals, as a
3 group.". The scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). ($r = .73$)

4 **3 Study 1 Results**

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

6 We tested the hypothesised model by conducting a path analysis in AMOS 25, in which we
7 entered all predictors simultaneously and included the hypothesised paths between variables (see
8 Figure 1)[9]. We made the following additions to the model based on the modification indices and
9 a strong theoretical rationale: 1) We added paths from vegan identification to collective efficacy
10 and anger, because researchers have argued that identification with a social identity can function
11 to increase a sense of collective efficacy and group-based anger, because group members begin
12 to view issues through a group lens and have heightened perceptions of relevant injustices as
13 well as the groups' power to address these injustices (e.g., van Zomeren et al., 2008; 2012a); 2)
14 We added paths from identification with animals to vegan identification and anger, because it is
15 likely that people who identify with animals also identify more strongly as a vegan. That is,
16 when individuals identify with animals it represents a psychological positioning of animals as a
17 type of "ingroup" member, and social identity theory suggests people are motivated to support,
18 protect, defend, ingroup members. So, individuals might do this in part by engaging in vegan
19 activism (hence the direct path to vegan activism) but also by committing themselves,
20 psychologically, to other related groups that share a common value around, and that ultimately
21 helps increase and protect animal welfare (hence the path from animal identification to vegan
22 identification); 3) We added a path from consequentialist orientation to identification with

[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.

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1 animals, because this was suggested by the modification indices and it seems plausible that
2 individuals endorsing a consequentialist orientation could also identify with animals (e.g., if they
3 include animals in their view of society).

4 As recommended by Byrne (2010), model fit was assessed by indices such as GFI and
5 CFI (values higher than .95 show good fit), SRMR (values less than .05 show good fit) and
6 RMSEA (values from .05 to .08 show good fit). The resulting path model (including non-
7 significant paths) showed adequate fit, χ^2 = 16.36, df = 5, p = .006, χ^2/df = 3.27, GFI = .99, CFI =
8 .98, SRMR = .03, RMSEA = .08. = We ran bootstrapping with 5000 resamples to obtain
9 significance tests for the indirect effects. In total, the predictors explained 32% of the variance in
10 self-reported frequency of engaging in vegan activism. The total standardized indirect effect of
11 deontological orientation on vegan activism was .25, 95%CI[.15, .27] and the total standardized
12 indirect effect of consequentialist orientation on vegan activism was .10, 95%CI[.03, .12] (see
13 the Supplementary Materials for all total, direct and indirect effects).

14 Thus, the hypotheses were partially supported. Consistent with the hypotheses, the effect
15 of a deontological orientation on vegan activism was mediated through higher vegan
16 identification, collective efficacy, anger, and identification with animals. Consistent with the
17 hypotheses, the path from consequentialist orientation to anger was non-significant (though the
18 absence of an effect is not evidence that an effect does not exist). Unexpectedly, however, there
19 were no significant effects of consequentialist orientation on vegan identification or collective
20 efficacy – only via identification with animals.

21

22 Table 1.

23 *Means, Standard Deviations and Bivariate Correlations between All Variables (Study 1).*

	M	SD	1	2	3	4	5	6

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1. Deontological orientation	5.94	1.21						
2. Consequentialist 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**

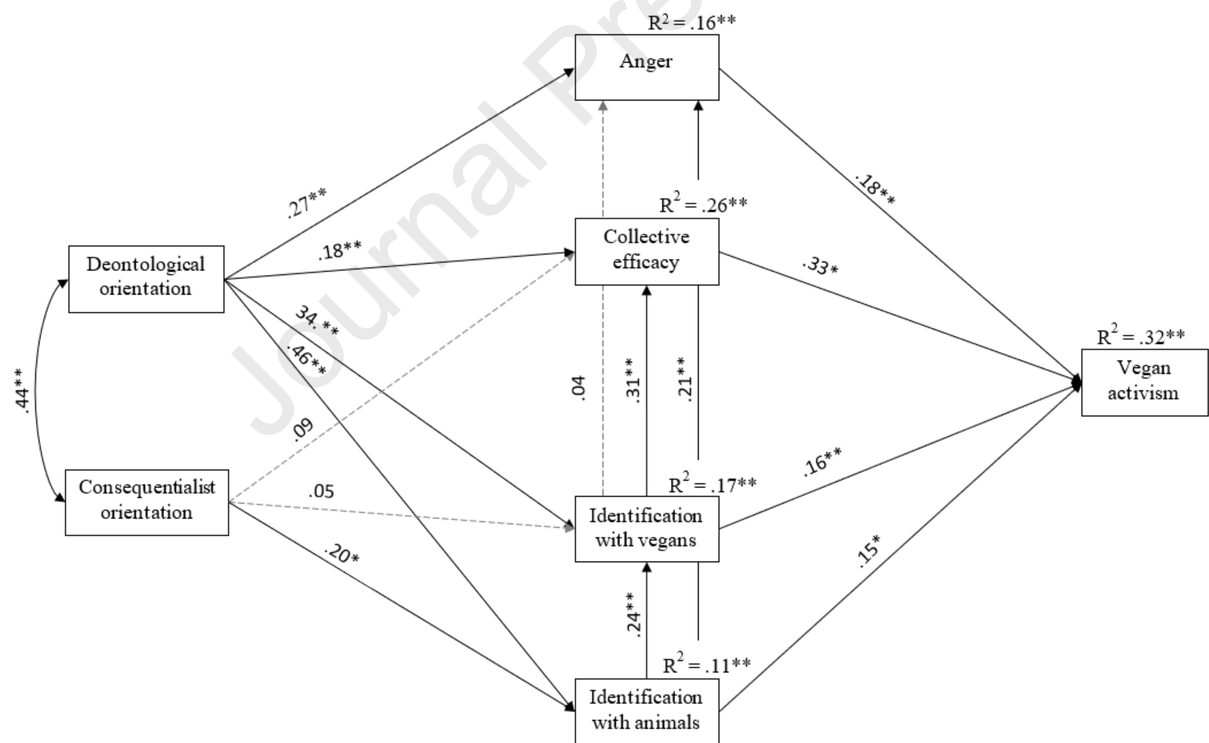

Figure 1. Path model predicting frequency of vegan activism (standardized coefficients). Model fit $\chi^2 = 16.36$, $df = 5$, $p = .006$, $\chi^2/df = 3.27$, GFI = .99, CFI = .98, SRMR = .03

4 Study 2 Method

4.1 Participants and Procedure

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1 Participants were 340 residents (294 UK and 46 US) who followed a vegan diet and
2 identified as a vegan. The participants were recruited via Prolific.co and paid £1.13 for a 9-
3 minute survey. We set pre-screening criteria that participants need to follow a vegan diet,
4 identify as vegan, and reside in the UK or US. There were 242 female participants, 85 male
5 participants and 13 participants who identified as non-binary (age range: 18-60, M = 31.50, SD =
6 9.74. They had been vegan for an average of 5.06 years (SD = 5.09). When asked to report the
7 main reason why they continue to be vegan, 64.10% said concern for animals, 17.40% said
8 concern for the environment, 14.10% said personal health, and 4.5% gave another reason. Ethics
9 approval for this study was granted by the Human Ethics Committee at the University of
10 Groningen (Ethics #: PSY-2021-S-0497). We pre-registered the hypotheses on the Open Science
11 Framework prior to data collection (https://osf.io/fxqek).

12 4.2 **Measures**

13 The measures for Study 2 were highly similar to those used in Study 1. We included a
14 few more items per variable, and as in Study 1, measures were reliable. Specifically, we
15 measured anger (three items, α = .94), deontological orientation (three items, α = .81)
16 consequentialist orientation (three items, α = .78), identification with vegans (three items, α =
17 .92), collective efficacy (four items, α = .96), individual vegan activism (six items, α = .79), and
18 identification with animals (three items, α = .90), in that order[10]. In Study 2, we also added an
19 exploratory qualitative item asking participants to list "one or two of the core defining
20 characteristics of a vegan (e.g., their traits, attitudes, behaviours)" which we adapted from
21 Turner-Zwinkels et al. (2017). The findings for this item are reported in the Supplementary
22 Materials.

23 **5 Study 2 Results**

[10] 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.

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1 The means, standard deviations and correlations between all variables in Study 2 can be
2 found in Table 2. We again performed a path analysis in AMOS including the same hypothesised
3 paths, as well as the additional paths from vegan identification to collective efficacy and anger,
4 and from identification with animals to vegan identification and anger[11]. However, we did not
5 include a path from consequentialist orientation to identification with animals, as this was a post-
6 hoc decision in Study 1, and was not recommended by the modification indices in Study 2 (when
7 we added this path, it was non-significant). Overall, the results were quite similar to Study 1; in
8 combination, the variables explained 35% of the variance in vegan activism, with a deontological
9 orientation having a strong indirect effect (standardized indirect effect = .34, 95%CI[.28,.40]) on
10 vegan activism via all four mediators, but a consequentialist orientation having weak indirect
11 effect (standardized indirect effect = .06, 95%CI[.03,.11]) via one mediator (identification with
12 vegans).

13 Table 2.

14 *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	.49**	.34**	.62**	.40**	.30**	

[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* = .05).

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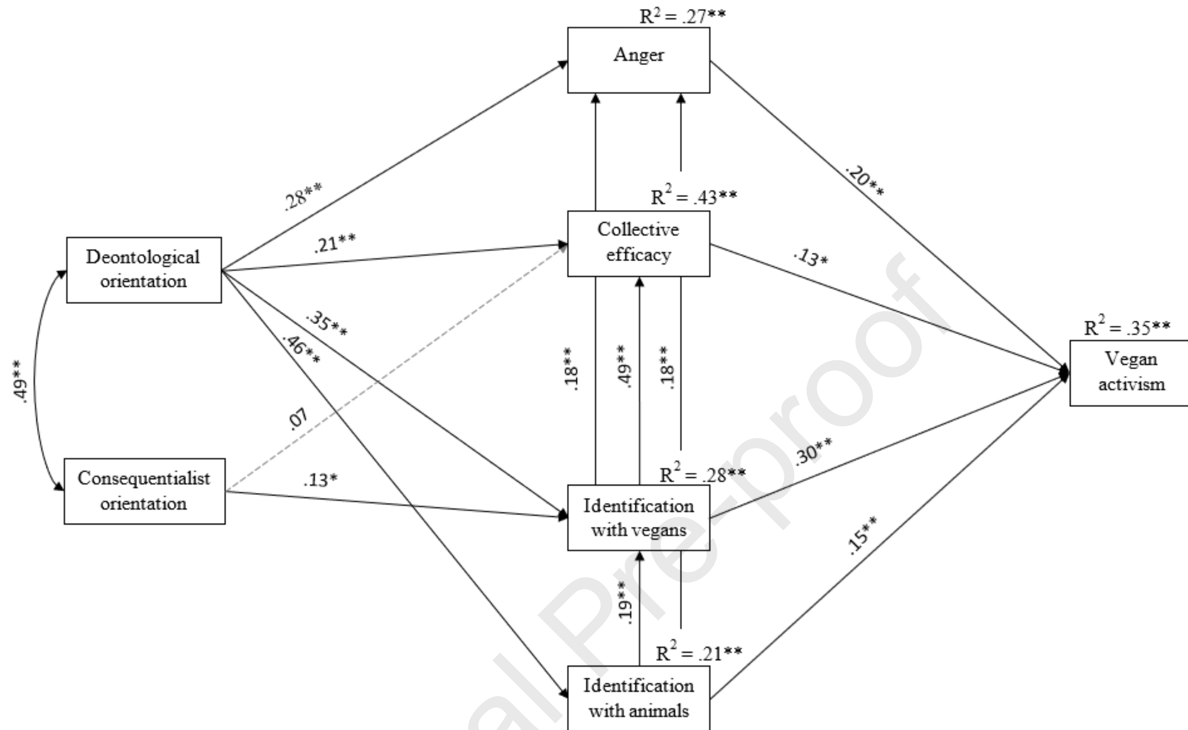
7. Vegan activism	3.07	0.85	.51**	.32**	.51**	.39**	.42**	.44**

1
2



3

4 *Figure 2.* Path model predicting frequency of vegan activism (standardized path coefficients).
5 Model fit $\chi 2$ = 29.32, df = 6, p < .001, $\chi 2$/df = 4.89, GFI = .98, CFI = .97, SRMR = .04, RMSEA
6 = 11.

7 # 6 Discussion

8 While there has been increasing attention to the role of social identities in motivating and
9 maintaining dietary behaviours (e.g., Bagci & Olgun, 2019; Nezlek & Forestell, 2020; Plante, et
10 al., 2019; Rosenfeld & Burrow, 2018; Rosenfeld, et al., 2020), there has been relatively less
11 discussion of the *content, function and consequences* of specific social identities in this context.
12 In this paper, we focused on the vegan social identity, and identified some of the key group-
13 related factors that motivate vegans to engage in vegan activism, which includes behaviours such
14 as consumer activism, knowledge sharing, and setting an example for others (i.e., trying to "be
15 the change you wish to see in the world"). The current findings show that the frequency of
16 engaging in vegan activism is predicted by similar predictors to collective action in other

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1 identity-based contexts (e.g., collective action surrounding racial justice or environmental
2 justice).. Overall, the hypotheses were partially supported, with a deontological orientation
3 having the predicted indirect effects on activism via anger, identification with vegans,
4 identification with animals and group efficacy, but with a consequentialist orientation having
5 relatively weak indirect effects via only identification with animals (Study 1) or identification
6 with vegans (Study 2). In combination, moral convictions, vegan identification, collective
7 efficacy, anger, and identification with animals, explained 33% of the variance in frequency of
8 vegan activism behaviours in Study 1, and 35% of the variance in Study 2 (collective efficacy
9 was a non-significant predictor in Study 2). This is comparable to the finding of 27% variance in
10 collective action explained in a recent meta-analysis of the collective action literature (Augostini
11 & van Zomeren, 2021). These results demonstrate the efficacy and importance of understanding
12 veganism as a collective process, in addition to an individualised dietary behaviour. They further
13 illustrate the capacity for models such as the SIMCA (van Zomeren et al., 2008) to be applied to
14 less conventional contexts of collective action, and suggest areas of these models that could be
15 expanded or modified (notably, here, group identification and moral conviction).

16 6.1 **Theoretical Implications**

17 The current research has several novel theoretical implications. First, with regard to
18 identification, we need to consider the potential for certain contexts of collective action to be
19 fuelled by individuals' identification with groups *other* than the in-group. Most previous research
20 on collective action has conceptualised it as action on behalf of the in-group, typically in
21 opposition to some specific outgroup. A broader perspective on identification has previously
22 been explored with regard to advantaged groups (or third parties) taking action on behalf of
23 disadvantaged outgroups (e.g., Klavina & van Zomeren, 2020; Thomas et al., 2019a; 2019b).
24 Our results suggest that this notion of 'allyship' identities could be productively applied to

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1 vegans' identification with non-human animals in the context of vegan activism[12]. However, it
2 should be noted the relationships between a sense of identification with animals and vegan
3 activism were relatively weak in both studies. This could be due to a ceiling effect, since most of
4 the participants strongly identified with animals. Another possible explanation is that just
5 identifying with animals alone may not be enough to promote collective action on behalf of
6 animals – there may need to be a perception that animals are being treated unfairly (i.e., seeing
7 animals as a *disadvantaged* group), or a rejection of the ideology of speciesism (e.g., Caviola et
8 al., 2019). Furthermore, it could be the case that identifying with a social movement with action-
9 oriented goals (i.e., veganism) may be a stronger predictor of action than identifying with
10 animals alone.

11 Second, our results illustrate that the moral conviction construct in collective action (see
12 van Zomeren et al., 2012a; 2018) could potentially be expanded. Here we have demonstrated that
13 a given moral issue can be approached from the perspective of deontological or consequentialist
14 morality, and that these two perspectives have different patterns of association with the more
15 proximal predictors of vegan activism (e.g., a deontological orientation predicted anger, but a
16 consequentialist orientation did not). Overall, participants did on average endorse the
17 consequentialist orientation and it wasn't extremely highly correlated with the deontological
18 orientation, supporting the value of this approach. This illustrates the potential for greater
19 development of the role of moral conviction in collective action, and the importance of testing
20 models such as SIMCA in non-traditional contexts as a means of testing and
21 expanding/modifying the key constructs. However, this was one of the first studies to include a
22 consequentialist orientation, and we should note that the findings for consequentialist orientation
23 were relatively weak (i.e., a consequentialist orientation was only independently related to

[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.

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1 identification with animals in Study 1, and identification with vegans in Study 2). This could
2 potentially be due to our sampling strategy, since in Study 1 we recruited participants from
3 mainstream vegan social networking sites that may have had predominantly deontologically-
4 oriented vegan members, although Study 2 recruited a more general vegan sample from
5 Prolific.co. Another possibility (as suggested by an anonymous reviewer) is that laypeople might
6 not find it easy to distinguish between deontological and consequentialist items, and there could
7 be better ways to measure these orientations. In this paper, we have conceptualised deontological
8 and consequentialist orientations as relatively distinct. However, as stated by the authors of the
9 scale that we adapted (Tanner et al. 2008), it is entirely possible for people to endorse *both* of
10 these orientations. Future research could take a person-centred approach to these two
11 orientations, to examine whether there are distinct profiles of vegans who endorse a relatively
12 more deontological orientation, a relatively more consequentialist orientation, both orientations,
13 or neither orientation. It would also be useful to examine alternative pathways via which
14 consequentialist orientations may have an effect on collective action; for example, via emotions
15 such as hope or sympathy (e.g., Robinson, 2017).

16 Thirdly, the current research suggests that it is useful to consider how best to
17 operationalize and arrange the predictors of collective action in contexts that involve systemic
18 'wicked' problems, without clear advantaged and disadvantaged groups (see also Fritsche et al.,
19 2018). For example, in our studies, we simply asked about whether participants experience anger
20 when thinking about the reasons why they are vegan, rather than asking about a specific
21 perceived injustice. Although most collective action research focuses on a perceived injustice
22 with a harmful agent, it may be possible that groups attempting to promote social change to
23 improve society or to address systemic issues do not necessarily perceive a salient 'outgroup'
24 that is the target of anger. This possibility is supported by some of our exploratory analyses in

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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 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).

Fourthly, 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.

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

9 6.2 **Applications**

10 The current research on the collective aspects of dietary behaviours could help identify
11 what motivates people to engage in vegan activism, which could then help with developing
12 campaigns to promote the diffusion of plant-based innovations in a particular societal context.
13 Organizations aiming to promote plant-based diets may benefit from considering the collective
14 factors that motivate people to engage in advocacy, in addition to individual behaviours. Some of
15 these factors may be motivating for some audiences and less motivating for other audiences. For
16 example, although anger was a predictor of advocacy, there is mixed evidence regarding whether
17 messages expressing negative emotions motivate people to adopt pro-environmental behaviours
18 (Gulliver et al., 2021). Given the common stereotype of the "angry militant vegan" (de Groeve et
19 al, 2021; Minson & Monin, 2012), it may be prudent to use strategies in organizational
20 messaging relating more to identity and efficacy than anger; however, this is also an area that
21 needs more research. Furthermore, encouraging a vegan social identity may also protect against
22 the negativity and stigmatization that some vegans report experiencing (e.g., MacInnis &
23 Hodson, 2017; Markowski & Roxburgh, 2019). It is important to consider the potential benefits
24 *and* disadvantages of vegan advocacy, especially in interpersonal interactions. Research on
25 morally-motivated deviance suggests that moral exemplars (or morally-motivated innovators)

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1 have the potential to inspire others and increase uptake of a moral behaviour (e.g., Bolderdijk et
2 al., 2018). However, in some contexts (e.g., where the observer is personally involved in the
3 immoral behaviour) morally-motivated deviance can also increase resistance and result in the
4 derogation and ostracism of the morally-motivated individual (Minson & Monin, 2012; Macinnis
5 & Hodson, 2017). This may have downsides for the movement as a whole. For example, a recent
6 study found that vegetarians experience anxiety regarding their interactions with vegans
7 motivated by animal concerns, which was correlated with less collective action and lower
8 intentions to remain vegetarian (Macinnis & Hodson, 2021). More research is needed in this
9 area.

10 6.3 **Limitations and Future Research**

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

20 Another limitation is that the sample for Study 1 was also recruited from specific
21 mainstream Facebook sites, and therefore is not likely to be representative of the entire
22 population of vegans (many of whom may not even engage with vegan social media networks) -
23 although Study 2 collected data from Prolific panellists may have included more diversity. Thus,
24 it is possible that there are groups of vegans that are not represented in the current sample and
25 have different kinds of motivations and moral convictions. For example, there are specific social

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networks for vegan feminism (http://veganfeministnetwork.com/), food empowerment (https://foodispower.org/), and vegans of color (http://www.veganismofcolor.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 also 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*anism, 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 (Bagci & 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 to be the 'disadvantaged' group, and

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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 in-group, and several programmes of research on veg*nism appear to try to construct a similar intergroup context (e.g., 'veg*ns' versus 'omnivores' 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 (Malek 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

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1 necessarily indicate their broader attitudes and beliefs regarding meat consumption (see
2 Hopwood & Bleidorn, 2019 for different profiles relating to rationalizing meat consumption).

3 Secondly, this social psychological practice of constructing a binary oppositional divide
4 tends to reinforce a common stereotype of 'angry' vegans as being hostile towards 'non-vegans',
5 when it is seems that there could be much more nuance to this issue. For example, it seems
6 possible that non-vegans would be seen as potential recruits who are simply unaware of the
7 consequences of their actions (which admittedly could be somewhat patronising; Wright, 2009).
8 Additionally, in market-based societies, multiple actors could be labelled 'responsible' for the
9 negative consequences of meat production and consumption, including consumers, farmers,
10 companies, and governments (see also, Lindenberg & Steg, 2013). Indeed, in our exploratory
11 analyses (see Supplementary Materials), vegan participants tended to rate consumers and
12 companies as equally responsible for the consequences of animal agriculture[13]. Thus, for vegans,
13 the target of anger may not necessarily be the behaviour of individual 'omnivores', but rather,
14 the ideological and institutional structures that support harmful production processes (of which
15 individual consumers are just one element). We recommend that future research examines the
16 source of perceived moral violations in the context of veganism, and that researchers in social
17 psychology consider including a more nuanced approach to labelling and researching the
18 'groups' in this context (i.e., not just framing the social context as 'omnivores' vs. 'vegans').

19 ### 6.4 Conclusion

20 In order to understand the growing popularity of plant-based diets in western societies, it is vital
21 to examine how social change processes might be happening at the micro level – in everyday
22 people's social change-oriented behaviours. In this paper, we developed and tested a social
23 identity-based model of the factors that motivate vegan activism, and have highlighted the

[13] It could also be interesting to investigate whether vegans think it is possible to be 'completely vegan', when one is part of a society that categorizes animals and nature as a resources to be exploited and in which meat consumption and production is a central element of the economy.

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1 contributions of several predictors that have been found to motivate collective action in other
2 contexts. Our findings suggest that "who we are" (i.e., vegan identities) and "what we (will not)
3 stand for" (i.e., moral convictions) are important components in everyday vegan activism (e.g.,
4 van Zomeren et al., 2018). We argue that, on a collective level, vegan activist behaviours are
5 likely to have a significant impact on the widespread adoption of (and potentially, resistance to)
6 plant-based diets in society. Thus, research on vegan activism could be a key component to
7 understanding broader societal transitions in dietary behaviours.

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1 6.5 **Author Contributions**

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

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9 data; in the writing of the report; or in the decision to submit the article for publication.

10 6.7 **Competing interests**

11 The authors declare no conflicts of interest.

12 6.8 **Availability of data and materials**

13 The datasets used and/or analysed during the current study are available from the corresponding
14 author on reasonable request.

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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 #: PSY-2021-S-0497). We pre-registered the confirmatory hypotheses on the Open Science Framework prior to data collection (https://osf.io/qtp8v/; https://osf.io/fxqek). Participants gave informed consent before taking part in the study.

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