A communicational approach to enhance open-mindedness towards meat-refusers

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ABSTRACT

Meat-refusers (vegetarians and vegans) are typically derogated by meat eaters because they threaten meat eaters’ moral self-image. In two preregistered experiments (N = 323 and N = 243), we examined the effects of communication style on this ‘do-gooder’ derogation. For this purpose, we developed a paradigm to create moral threat in participants in an online study. Afterwards, participants read an essay of a meat-refuser that was either static, confident, and result-oriented; or dynamic, uncertain, and process-oriented. Dynamically communicating meat-refusers were found to elicit less moral threat and be evaluated as less arrogant than static targets. Regardless of communication, meat refusers with non-moral motives were also evaluated as less threatening and arrogant than ethical vegetarians and vegans. We propose that dynamic communication can improve relations between meat eaters and meat-refusers and, thereby, may eventually inspire meat eaters to decrease their meat consumption in the future.

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People are increasingly aware of the negative consequences of meat consumption with regard to human health, animal welfare, and climate change (Sanchez-Sabate & Sabate, 2019). Meat production is associated with greenhouse gas emissions and biodiversity loss (Godfray et al., 2018). Additionally, meat consumption is linked with several diseases (Gonzalez, Marques, Nadal, & Domingo, 2020) including some forms of cancer (Domingo & Nadal, 2017), as well as an increased risk of pandemics transmitted from animals to humans (Li et al., 2020). In contrast, plant-based diets tend to be healthier and have a smaller impact on the planet, with lower emissions of greenhouse gases and nitrogen, and more efficient use of land and water (Bruno et al., 2019; Veeramani et al., 2017).

And yet, vegetarians and vegans are often ridiculed, discriminated and rejected. MacInnis and Hodson (2017) found that stereotypes of vegetarians and vegans are quite negative and that stereotyping people on this basis is widely accepted in our society, unlike for instance stereotypes based on race or gender (which does occur as well but is regarded as socially undesirable by many). Thus, whereas meat-refusers could potentially pose a moral example and inspire others to change their eating habits and reduce their ecological footprint, they may often fail to do so because of negative preconceptions about them.

Presumably, the psychological basis of these negative views lies in the moral threat that meat-refusers pose to meat eaters. People typically view themselves as morally good and even morally better than others (Allison et al., 1989). Generally, moral refusers (‘do-gooders’) pose a reminder of the moral questionability of behaviours that other people often thoughtlessly go along with, such as meat eating. Thus, vegetarians and vegans implicitly threaten the self-image of meat eaters (Minson & Monin, 2012; Monin et al., 2009).

In previous studies, this moral threat has been conceptualized as Anticipated Moral Reproach (AMR, Minson & Monin, 2012). To measure it, participants are asked to rate how they expect a moral refuser to rate their own morality and his or her own morality. Presumably, the larger the difference in disadvantage of the participant, the more they feel morally threatened.

This threat may evoke defensive responses (in the meat-refuser realm, this has been described by e.g. Bastian & Loughnan, 2017; Piazza et al., 2015; Rotherger, 2012; 2014) and can also result in resentment of the moral refuser. While moral refusers generally tend to be seen as independent, strong, and socially conscious, i.e., high on...
agency/competence-related traits, they are typically judged as low on communion/warmth-related traits, e.g., as annoying, arrogant, self-righteous, and judgmental (Minson & Monin, 2012; Monin et al., 2008).

Note that while meat-refusers might in fact feel morally superior to meat eaters, evidence indicates that a large part of the negative expectancies resides in the eye of the beholder, the meat eater. For example, ratings of a meat refuser are more negative when thoughts about how the meat refuser might view the meat eater’s diet are made more salient (Minson & Monin, 2012). Furthermore, meat refusers are not derogated when they have non-moral motives for their vegetarian diet, such as personal health reasons (Gramwinckel et al., 2013). It appears that resentment of meat-refusers is often caused by the moral threat that meat eaters expect from meat-refusers, rather than the actual resentment that meat-refusers convey.

In sum, instead of inspiring meat eaters, meat-refusers tend to evoke backlash effects. Our main question is how these negative responses can be reduced so that meat-refusers are seen as less annoying and self-righteous. Since the negative judgments presumably originate from an implicit moral threat (Minson & Monin, 2012), we aim to reduce this threat. We want to do this by changing how meat refusers communicate about their diet. In two studies, we examine how meat-refusers’ communication style affects perceptions of them.

Three aspects of communication seem important. First, the diet can be described as either the final and unchangeable end result of a decision or as ‘work in progress’. In the latter case, it is not seen as a fixed, stable solution, but as a process that is still going on and can always further develop. In this case, the meat-refuser would not appear to be someone who thinks their journey is completed while others still have a long way to go. Also, most meat-refusers were once meat eaters themselves, and by expressing that, they may reduce the psychological distance between them and the meat eater.

Second, people can communicate about their choice to refrain from meat either in an all-or-none, black-and-white manner or as a shift on a continuum with many intermediate points in between. In the former case, the message might implicitly convey that their own choice is ‘good’ and others’ choices are ‘bad’, and it may strike others as dogmatic and superior. In the latter case, the message is more nuanced. Thereby, the difference between the meat eater and the meat-refuser may appear more gradual.

Third, and related to the previous two components, messages may vary in how firm and confident they are. A confident communication style conveys high agency and authority. However, it may also be perceived as smug and self-righteous, yielding higher ratings on arrogance-related traits. On the other hand, a communication style reflecting more uncertainty, search and struggle, could reduce the expectancy that the meat refuser would morally judge and feel superior to the meat eater.

Thus, we expect that meat-refusers who communicate about their diet as a continuum rather than a dichotomy, an ongoing process rather than the result of having found the only ‘right’ answer, and with doubt rather than confidence, may be seen as less morally threatening and arrogant. In the remainder, this process-oriented communication style will be called dynamic and its opposite static. The differences will be discussed in greater detail in the Method section.

To our knowledge, the current research is the first to examine different communication styles as a means to reduce negative judgments of meat-refusers. In two experimental studies, we manipulated a target person’s motives to refuse meat and their communication style. We expected that a target person refusing meat for moral reasons (vegetarian or vegan; henceforth called moral refuser) elicits higher moral threat and, consequently, is rated less favourably on traits related to arrogance than a meat-refuser with non-moral motives. Second, we hypothesized that meat-refusers with a dynamic communication style elicit less moral threat and, consequently, are derogated less than those with a static communication style.

1. Pilot study

We first conducted a pilot study among college students participating for course credit. This was done to test our procedure, materials, and scales, which were consequently adapted slightly to improve our paradigm. A detailed description of the methods is provided in the supplementary materials.

After being reminded of their meat consumption using two multiple choice and one open question, participants read an essay that was allegedly written by a target person who either followed a flexitarian, vegetarian or vegan diet. The essay was written in either a static or dynamic communication style. Subsequently, as an index of experienced moral threat, participants were asked to anticipate morality ratings by the target person: ‘If [the target person] saw what I normally eat, they would think I am ... ’ (AMRparticipant) and ‘[The target person] would rate themselves as ... ’ (AMRtarget). The difference between these items is an index of AMR (Minson & Monin, 2012). In the analyses, a significant effect of either target diet or communication would thus be indicated by a significant interaction term between rating object (target/participant) X target diet or communication. After the measure of AMR, participants rated the target person on traits related to arrogance and agency. We discarded participants who failed the attention checks and those who ate meat less than thrice a week, leaving a total of 178 participants in the final analyses.

1.1. Results and discussion

When the target was a vegetarian or vegan, meat eaters in our study expected that targets would rate themselves as more moral and the participant as less moral than when the target was a flexitarian, $F(2,172) = 3.97; p = .021; \eta_p^2 = .042$, 90% CI [0.00, 0.10], indicating higher anticipated moral reproach in the former conditions. Furthermore, vegetarians and vegans were rated as marginally more arrogant than flexitarian targets (items judgmental, preachy and self-righteous), $F(2,172) = 3.05; p = .050; \eta_p^2 = 0.03, 90\% \text{CI} [0.00, 0.08]$, but not as more agentic (items intelligent, mature, independent and realistic), $F(2,172) = 0.82; p = .96$.

Regarding the effect of communication on anticipated moral reproach, there was no significant interaction effect of rating object (target, participant) X communication, $F(1,172) = .72; p = .397$. Dynamically compared to statically communicating targets were also not rated as less arrogant, $F(1,172) = 0.87; p = .35$. Thus, communication style did not affect anticipated moral reproach and ratings of arrogance as we had expected.

Overall, the level of resentment appeared rather low in this study. In all conditions, targets were rated at least moderately favourably, even the static vegan target whom we had expected to be regarded as quite arrogant and superior. In this respect, our target persons did not arouse the level of annoyance about meat-refusers that often occurs in everyday life. Monin et al. (2008) found that derogation of do-gooders occurred only when participants had themselves just engaged in the immoral act that the target refused (‘actors’, not just observers). In the pilot study, we attempted to simulate this by asking participants about their meat-eating habits at the beginning of the study and to elaborate on their last meal with meat, but this may not have been sufficient.

In our main studies, we therefore enhanced the level of threat evoked by the meat refuser, by creating a setting in which participants actively

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1 In all our studies, despite several differences in the traits used, the optimal solution in factor analyses was a two-factor solution representing agency and arrogance. An expected third factor (warmth) was not found.

2 According to Lakens (2013), $\eta_p^2$ (partial eta squared) is the most appropriate effect size measure for our analyses. It represents the proportion of the variance in the dependent variable (in this case: anticipated morality rating) that can be attributed to the independent variable (in this case: rating object X target diet).
choose meat just before observing the target’s refusal.

2. Study 1

In the pilot study, we established that a flexitarian is rated more favourably than a vegetarian and vegan. In the main experiments, we dropped the flexitarian and, instead, introduced a non-threatening control condition, a meat-refuser with non-moral motives, in order to maximise the differences between threat and no-threat conditions.

We wanted to conduct the study online and at the same time get participants actively involved so that the target’s meat refusal would be more confronting to them. To accomplish this, we developed a procedure aimed to produce an experience similar to the ‘actor’ conditions in the studies by Monin et al. (2008), i.e., conditions in which participants observe a target who refuses to comply with something that they themselves just went along with. After some general questions about eating habits, we introduced a food-choice task in which participants were to make choices between pairs of food – among them choices between two meat products. The subsequent essay of the target was introduced as written by an alleged other participant who had selected ‘neither’ on a choice between two meat items. The choice of the participant, which was a meat product, was presented on the screen next to the target’s choice which was ‘neither’. In the vegetarian and vegan conditions, the target clarified this choice by explaining their ethical motives for their diet. In the control condition, the reason was that the target could not eat meat due to a food allergy.

In Study 1, we tested the effects of target diet (vegetarian, vegan, control) and communication style on anticipated moral reproach and ratings of the target person. Our hypotheses were preregistered at the Open Science Framework (OSF; Vonk & Weiper, 2020a). We hypothesised that participants in moral refuser conditions, compared with the control group, would experience more moral threat as manifested in higher anticipated moral reproach (AMR). As a consequence, there would be more derogation of the target in these conditions, as indicated by higher ratings on arrogance-related traits and lower ratings on interpersonal attraction traits. Second, we also expected higher AMR, higher arrogance ratings, and lower interpersonal attraction for statically communicating targets than dynamically communicating ones.3

2.1. Method

Procedure. The study was conducted online in English and could not run on a smartphone. Participants were informed that the study would take 15–30 min and were asked to complete the entire study in one run. They were told in advance that they would answer some questions about their opinions, preferences, and habits, read an essay by another participant who already completed the study, and at the end would write an essay themselves.

Fig. 1 presents an impression of the different parts of the experiment. The first part consisted of demographic questions, including questions about participants’ eating habits and meat eating. In the second part, they were asked to make choices between twelve pairs of food items which were presented one by one, e.g. ‘Hotdog – Snickers’, ‘Apple – French fries’ and ‘Tomato – Banana’. They were asked to imagine that they would actually receive the item that they picked and to indicate what they felt like eating at that moment. The fifth, eighth and eleventh pair were meat-meat pairs: ‘Hamburger – Kebab’, ‘Kebab – Spare ribs’ and ‘Spare ribs – Hotdog’. After this task, participants were told that one of the twelve pairs would be randomly selected and they were asked to write a brief clarification of their choice on this pair. In actuality, the selected pair was not random but was always one of the meat – meat pairs, one where the participant had in fact chosen a meat product. They were told

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3 Our pre-registration contains several other hypotheses about dependent variables, the results of which are described in the supplementary materials.
that later, at the end of the study, they would be asked to write an essay on their food preferences and habits.

In the third part, after completing their short clarification, participants were told that they would be matched with another participant who had already completed the study, and who had allegedly been assigned to elaborate on the same pair that they had. They were told that they would get to see the other participant’s short clarification and essay, ‘so you can compare your preference with theirs’. On the next screen, they were shown their own choice (in Fig. 1, ‘Spare ribs’; this depended on the participant’s own choice) next to the choice of the other participant which was always ‘neither’, along with a brief clarification depending on condition (see supplementary materials and Tables 1 and 2). To convey the impression that they were actually matched to another participant, this information appeared after a short delay of 1.9 s. Subsequently, participants were shown the essay that allegedly had been written by the target at the end of the study. The target was always referred to as ‘the other participant’, without any information on name or gender.

After the essay, participants were asked to briefly describe their first impression of the essay and its author by means of five to ten keywords. This was done to bolster the initial intuitive impression, before potentially being affected by the questions from the researchers. In the remaining parts of the study, we assessed AMR, impressions of the target, manipulation and attention checks, and other measures; see Measures and supplementary materials. Finally, participants were debriefed and informed that they would not have to write an essay.

**Design and stimulus materials.** We used a 3 (target diet: control, vegetarian, vegan) x 2 (communication: static, dynamic) factorial between-subjects design. The manipulations were administered via the information from the alleged other participant. In all conditions, participants saw that the target had selected ‘neither’ on the meat-meat pair where they themselves had selected one of the two meat products, along with a short explanation by the target about this choice. Participants in the control condition read ‘I chose neither because I don’t eat any meat due to a food allergy’ (static and dynamic). In the other conditions, they read: ‘I chose neither because I don’t eat any meat and I want to stick to being a vegetarian (vegan)’ (static) or ‘I chose neither because I don’t eat any meat and I try to stick to my vegetarian (vegan) diet’ (dynamic; italics added).

On the next screen, they read the target’s essay which, allegedly, the target had written about their food choice in the study and about their eating habits and preferences in general at the end of the study. The essay, written by the researchers, indicated that the target was a student and contained information about the student’s living and eating habits, such as eating with family and friends or at university. The target’s diet and motives for it depended on the condition (see Tables 1 and 2). Note, that the reason for meat-refusal in our control condition was personal and not applicable to other people so that it would not be threatening to meat eaters. In contrast, targets in the vegetarian and vegan conditions elaborated on the moral implications of meat eating (animal welfare and effects on climate change).

In the static condition, the target presented their diet as a fixed habit that was easy and unchangeable, whereas the target person in the dynamic condition described their diet as a temporary state that is changeable and that sometimes is difficult. Differences between the essays are presented in Table 2. This table includes only the sentences that were different between conditions. The entire essay contained more irrelevant information at the beginning and in between (which was the same in both communication conditions), to avoid that the student would only communicate about their meat refusal. It can be found in the supplementary materials.

The dynamic essay contains more words (the total number of words in this condition was 409) than the static communication (379 words). This is inevitable, considering that strict, confident communication without any doubts, almost by definition is more succinct.

**Measures.** Unless noted otherwise, we used continuous 100-point sliders for all measures. They were administered in the order in which they appear below. Additional questionnaires can be found in the supplementary materials.

**Anticipated moral reproach.** The questions related to anticipated moral reproach described in the pilot study were embedded within two filler items: ‘The other participant would like (dislike) my meals’ and ‘The other participant would think that I like easy, convenient meals (elaborate cooking)’. We did this because, differing from the pilot, these were now the first closed-format questions about the target and we wanted to avoid suspicion by hitting the reproach in their face too ostentatiously.

**Perception of the target person.** Before rating the target person on trait scales, we assessed interpersonal attraction by asking to what extent participants would like to (a) have the target person as a friend or (b) as a colleague and (c) go on a weekend trip with the target person (α = 0.87; λ2 = 0.88). This measure was adapted from Monin et al. (2008).

 Afterwards, participants rated the target person on items representing arrogance, ‘preachy – lenient’; ‘judgmental – tolerant’, ‘modest – feels superior’ (mirrored) and ‘humble – self-righteous’ (α = 0.87; λ2 = 0.87) and agency, ‘stupid – intelligent’; ‘strong – weak’ (mirrored), ‘confident – insecure’ (mirrored) and ‘immature – mature’ (α = 0.79; λ2 = 0.80). Furthermore, we included the items ‘inspiring – boring’ (mirrored) to assess inspiration and ‘moral – immoral’ (mirrored) to assess participants’ rating of the target’s morality. In the questionnaire, the items from different scales were mixed.

**Attention and manipulation checks.** After the assessment of the main dependent variables, participants completed several manipulation checks about the communication style. Participants responded on four continuous bipolar scales asking about how the participants perceived the target’s description of their eating habits. Responses ranged from ‘strict, dogmatic – flexible’, ‘uncertain, hesitant – confident’ (mirrored), ‘rigid – lenient’, and ‘stable – dynamic’.

We also asked the participant to select one of multiple diets (e.g. vegetarian, gluten-free, omnivore, …) which best described the target’s diet. If they chose a diet that included meat-refusal (i.e. vegetarian, vegan, or flexitarian diet), they were asked for the reasons of the target person to follow this diet (with the correct answer being ‘health reasons’ in the control condition; ‘animal welfare reasons’ or ‘climate change reasons’ in the moral refuser conditions). We also included two attention checks, embedded within a series of other questions with continuous scales, instructing the participant to move the slider all the way to the right or left. The measures described here were used as a basis for excluding participants as will be described below.

**Participants.** Data collection took place in June 2020 via the online platform Prolific. Participants were living in the United States and the United Kingdom and mainly took part in the study between 4 and 7 p.m., to increase the chance that they would feel like eating meat during the food choice task. Based on power analysis, we aimed for an N of 323 participants for testing the hypotheses. In total, 387 individuals completed the dependent measures. Following the preregistered exclusion criteria, we excluded 64 participants in total. Eleven were excluded because they completed the study in less than 500 s. Based on several attention and manipulation checks of the target diet, we identified 12 other participants who did not pay attention. In addition to the pre-registered criteria, we also excluded 5 other participants who went through the essay of the target person in less than 17.4 s (based on reading speed calculations by Primativo et al., 2016) and who additionally failed at least one of the attention or manipulation checks.
total, 359 participants were included in reliability and factor analyses. For testing the hypotheses, we excluded another 28 participants who ate meat less than three times a week and 8 other participants who chose neither in all three meat-meal items of the food choice task. On average, participants ate meat 5.51 days a week, 238 of them (73.7%) at least five days a week, and 238 of them (73.7%) at least five days a week. Almost half of them (114 participants) eat meat every day. Of these participants, 156 identified as male and 166 participants as female. One person did not give information about their gender. They ranged 18 through 80 in age with a mean of $M = 31.76$ ($SD = 13.23$). All participants were native English speakers.

### 2.2. Results

#### Manipulation checks.

In total, 293 (90.7%) of the participants remembered the diet of the target person correctly. A $3 \times 2$ multivariate analysis of variance (MANOVA) on the manipulation checks for communication showed that participants in the dynamic communication condition rated the target as significantly less strict and dogmatic, $F(1,317) = 21.47; p < .001$; $\eta^2_p = 0.06$; 90% CI [0.02, 0.12], less rigid, $F(1,317) = 22.12; p < .001$; $\eta^2_p = 0.07$; 90% CI [0.02, 0.12], more uncertain and hesitant, $F(1,317) = 42.67; p < .001$; $\eta^2_p = 0.12$; 90% CI [0.06, 0.19], and more dynamic, $F(1,317) = 39.12; p < .001; \eta^2_p = 0.11$; 90% CI [0.05, 0.18].

#### Anticipated moral reproach.

We conducted a repeated measures MANOVA with target diet and communication as within-subject factors on anticipated morality ratings by the target (i.e. how the participant expected the target person to rate the morality of themselves and of the participant) with rating object (target, participant) as a within-subject factor. There was a significant effect of rating object, $F(1,317) = 761.59; p < .001$; $\eta^2_p = 0.71$; 90% CI [0.66, 0.74]. Overall, participants expected target persons to judge themselves as significantly more moral ($M = 80.03; SD = 0.94$) than the participant ($M = 36.61; SD = 1.13$). This effect was significantly stronger in the vegetarian and vegan conditions than in the control condition, interaction $F(2,317) = 74.84; p = .001$; $\eta^2_p = 0.32$; 90% CI [0.24, 0.39]. As can be seen from the third and fourth row of Table 3, ratings for AMR were particularly low in the two threat conditions, indicating that participants felt the moral refuser targets would think low of the participant’s morality and much higher of their own.

An interaction effect of rating object X communication, $F(1,317) = 3.04; p = .041$ ($\eta^2_p = 0.02$); $\eta^2_p = 0.01$; 90% CI [0.00, 0.04], indicated that, as predicted, the discrepancy between AMR and $AMR_{\text{target}}$ was larger in static than dynamic conditions; see third and fourth row of Table 4.

#### Rating of the target person.

A 6 (target diet) \(\times\) 2 (communication) MANOVA on the three variables attraction, arrogance and agency, yielded a significant multivariate effect of target diet, $F(6,630) = 12.27; p < .001$; $\eta^2_p = 0.11$; 90% CI [0.06, 0.14], as well as of communication, $F(3,315) = 11.91; p < .001$; $\eta^2_p = 0.10$; 90% CI [0.04, 0.16]. The interaction effect was not significant, $F(6,630) = 0.25; p = .96$.

Univariate analyses showed a significant effect of target diet on arrogance, $F(2,317) = 28.40; p < .001$; $\eta^2_p = 0.15$; 90% CI [0.08, 0.22], but not on agency, $F(2,317) = 2.55; p = .09$, or attraction, $F(2,317) = 0.87; p = .419$. Participants in moral refuser conditions rated the target higher on arrogance than in the control condition ($p < .001$).

Table 3 presents means, standard deviations, and confidence intervals.

Regarding the effects of communication, the dynamic target was perceived as less arrogant than the static target, $F(1,317) = 18.89; p < .001$; $\eta^2_p = 0.06$; 90% CI [0.02, 0.11], as predicted. There was no significant difference in agency, $F(1,317) = 0.68; p = .41$, and attraction, $F(1,317) = 0.37; p = .546$.

### 2.3. Discussion

In this study, we examined how vegetarians and vegans are perceived by meat eaters and whether a static versus dynamic communication style influences these perceptions. We found that meat eaters expected more moral reproach from vegetarian and vegan targets with moral motives than from targets who refuse meat on personal grounds. Moreover, moral refusers were also rated as higher on the arrogance continuum.

### Table 2

| Static communication | Dynamic communication |
|----------------------|-----------------------|
| Results-orientation | I never eat meat. Since I had decided on this, my eating pattern has never changed. |
| Diet as a discrete category | Eating more meat is clear to me since I know about this. I eat vegetables, peas, and beans instead, and sometimes meat substitutes, so it’s no problem at all. |
| Ease and certainty | Therefore, I’m sure I will continue this diet. |
| Struggle and uncertainty | I’m sure my eating pattern will not change easily. |
| --- | --- |
| Process-orientation | For now, I don’t eat meat. I used to, but my eating pattern has gradually changed. |
| Diet as a continuum | I started considering eating no more meat since I know about this. I used to eat it every day and I gradually started to eat more vegetables, peas, and beans instead, and sometimes meat substitutes. It takes time getting used to, but I hope I will continue this diet. |

As we preregistered a hypothesis about this effect, this p-value represents a one-tailed test. P-values of two-tailed tests were significant as well.

### Table 3

| Allergy | Vegetarian | Vegan |
|---------|------------|-------|
| Arrogance | M (SD) | 95% CI | M (SD) | 95% CI | M (SD) | 95% CI |
| Arrogance | 36.79 | [33.65, 40.93] | 51.19 | [47.94, 54.45] | 52.01 | [48.82, 55.20] |
| Agency | 73.43 | [70.44, 76.42] | 69.34 | [66.43, 72.26] | 73.20 | [70.38, 76.02] |
| Agency | 70.07 | [66.93, 73.21] | 83.82 | [80.56, 87.09] | 86.21 | [83.01, 89.40] |
| AMR | 53.13 | [49.35, 56.91] | 29.24 | [25.31, 33.16] | 27.47 | [23.63, 31.32] |

Note. Within a row, means with non-common subscripts differ significantly from each other (p < .05). $AMR_{\text{target}}$ and $AMR_{\text{participant}}$ differed from each other in all conditions. Significance levels of this table represent results from the univariate tests, multivariate results are described in the main text. CI = Confidence Interval.
In contrast to our hypothesis and results reported by Monin et al. (2008), we found no effects of moral threat on interpersonal attraction as measured by the interest in interacting with the target. Therefore, as specified below, we altered these items in the second study to make them more applicable to the online context of our study.

Since the interaction effect of rating object and communication on anticipated morality ratings was significant only in a one-tailed test, we specified below, we altered these items in the second study to make them more applicable to the online context of our study.

In testing our hypotheses, we excluded 92 other participants because they ate meat less than twice a week and ten participants because they did not choose any meat in the food choice task. Our final sample thus consisted of 244 participants with a mean age of 33.29 (SD = 16.65). Of these, 184 participants identified as female (75.4%), and 58 identified as male (23.8%). Two participants did not give information on their gender identity. Most of the participants (88.1%) were native Dutch speakers and hence completed the Dutch version of the questionnaire.

### 3.2. Results

**Manipulation checks.** A MANOVA testing the effects of communication on the four manipulation checks resulted in a significant multivariate effect, $F(4,239) = 16.98; p < .001; \eta^2_p = 0.22; 90\% CI [0.13, 0.30]$. Participants rated the dynamically communicating target as significantly less strict and dogmatic, $F(1,242) = 12.89; p < .001; \eta^2_p = 0.05; 90\% CI [0.01, 0.11]$, less rigid, $F(1,242) = 9.32; p = 0.03; \eta^2_p = 0.04; 90\% CI [0.00, 0.09]$, more uncertain and hesitant, $F(1,242) = 28.25; p < .001; \eta^2_p = 0.11; 90\% CI [0.04, 0.18]$, and more dynamic, $F(1,242) = 58.37; p < .001; \eta^2_p = 0.19; 90\% CI [0.11, 0.28]$, than the statically communicating target.

**Anticipated moral reproach.** A repeated measures MANOVA with anticipated moral reproach as a dependent variable, rating object (participant, target) as within-subject factor and communication (static, dynamic) as between-subjects factor resulted in a significant effect of rating object, $F(1,242) = 642.88; p < .001^1; \eta^2_p = 0.73; 90\% CI [0.67, 0.77]$. Participants expected the target person to rate themselves as much more moral ($M = 84.86; SD = 1.01$) than the participant ($M = 37.02; SD = 1.43$).

As hypothesised, this effect was qualified by an interaction with communication style, $F(1,242) = 3.16; p = .039 \eta^2_{two-tailed} = .077$, $\eta^2_p = 0.01; 90\% CI [0.00, 0.05]$. Participants expected the target person to rate the difference in morality between themselves and the participant as

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**Table 4** Ratings on the dependent variables as a function of communication style in study 1.

|                  | Dynamic communication | Static communication |
|------------------|-----------------------|----------------------|
|                  | M (SD) | 95% CI       | M (SD) | 95% CI       |
| Arrogance        | 42.59 (1.33) | [39.97, 45.21] | 50.74 (1.32) | [48.14, 53.33] |
| Agency           | 71.30 (1.18) | [68.98, 73.62] | 72.66 (1.17) | [70.37, 74.96] |
| AMRtarget        | 78.67 (1.34) | [76.04, 81.30] | 81.39 (1.32) | [78.79, 83.99] |
| AMRparticipant   | 37.96 (1.61) | [34.80, 41.12] | 35.27 (1.59) | [32.14, 38.39] |

Note. Within a row, means with non-common subscripts differ significantly from each other ($p < .05$). AMRTarget and AMRParticipant differed from each other in all conditions. Significance levels of this table represent results from the univariate tests, multivariate results are described in the main text. CI = Confidence Interval.

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### 3.1. Methods

**Procedure.** Just as the first experiment, the study was also conducted online. In this case, there was an English and a Dutch version, and participants were recruited from both language regions. First, they elaborated on their meat choice, as in Study 1, participants were introduced to a male or female. Then proceeded to the food choice task. After elaborating on and participants were recruited from both language regions. First, they elaborated on their meat choice, as in Study 1, participants were introduced to a male or female. Then proceeded to the food choice task. After elaborating on and participants were recruited from both language regions. First, they elaborated on their meat choice, as in Study 1, participants were introduced to a male or female. Then proceeded to the food choice task. After elaborating on and participants were recruited from both language regions. 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smaller in the dynamic communication condition than in the static communication condition (see Table 5).

**Rating of the target person.** For the effects on target ratings, we conducted a MANOVA using communication style (static, dynamic) as a between-subjects factor. There was a significant multivariate effect of communication condition (see Table 5).

The effect of communication condition was significant for ratings of the target person, multivariate $F(1,242) = 11.07; p < .001$; $\eta^2_p = 0.12; 90\%$ CI [0.05, 0.19]. As in Study 1, this effect was instigated by a significant effect on arrogance, univariate $F(1,242) = 29.78; p < .001$; $\eta^2_p = 0.11; 90\%$ CI [0.05, 0.19]. As predicted, participants rated dynamic targets as significantly less arrogant than static targets (see Table 5). Again, there were no significant effects on attraction, $F(1,242) = 0.33; p = .57$, or agency, $F(1,242) = 0.33; p = .57$.

### 3.3. Discussion

Our second study aimed at replicating the effects of a dynamic versus static communication style. Generally, we were able to find the same effects of dynamic communication on both perceived moral threat and ratings on arrogance-related traits (both higher in the static communication condition). Just as in the first study, communication had no effect on the attractiveness of the target nor on the ratings of agency. In contrast to study 1, the dynamic target person in this study did not mention former meat consumption. This bolsters our assumption that the effects are due to the target’s communication style and not to differences in content. Note also that we did not find any effects of target gender or participant gender (see supplementary materials). Hence, the communication effect is robust across gender variations.

### 4. General discussion

This research addressed the effects of moral threat elicited by meat-refusers in meat eaters and how this threat reflects in negative responses to meat-refusers. Target persons who refused to eat meat for moral reasons elicited more moral threat and were judged as more arrogant than vegetarians who did not have moral motives but were allergic to meat (study 1). These findings converge with earlier results, showing that moral refusers are derogated because of the moral threat they arouse (Monin et al., 2008). This applies to moral refusers in all kinds of domains (e.g., Bashir et al., 2013; Bolderdijk et al., 2018; Cramwinckel et al., 2013; 2015) and also to meat refusers (Minson & Monin, 2012).

Note that our participants did themselves acknowledge some difference in morality between themselves and the meat-refuser, but they expected meat-refusers to regard this difference as considerably higher. In line with findings by Minson and Monin (2012) who suggested that anticipated moral reproach is one of the major causes of rejection of meat-refusers, we also found that meat-refusers were rated as higher on traits reflecting moral arrogance, such as judgemental, prejudice and feels superior.

But the problem is not only on the side meat eater; vegetarians and vegans do in fact sometimes describe their choices in a confident, self-righteous, non-compromising way, trying to persuade others (#govegan; Bryant, 2019). This is understandable considering their concerns about animals and the planet, but in light of the sensitivities on meat consumption. This bolsters our assumption that the effects are due to the target’s communication style and not to differences in content. Note that we did not find any effects of target gender or participant gender (see supplementary materials). Hence, the communication effect is robust across gender variations.

### 4.1. Limitations and future directions

In our studies, we focused primarily on the effects on the perceptions of meat-refusers. Regarding behavioural outcomes, we only included exploratory measures for this at the end of the study. We did not obtain any effects on these measures. As described by, for instance, the theory of planned behaviour (Ajzen, 1991), behavioural intentions, as well as behaviour itself, often occurs at the end of a long sequence of several preceding steps. Reading about a meat-refuser who communicates dynamically might only be the first step in a much longer process of behaviour change. A very important step, we think, because resenting the messenger presumably is a huge obstacle in adopting the message (Cialdini & Sagarin, 2005).

Note that, for the interaction of rating object and communication on anticipated moral reproach, our $p$-values are relatively high and our effect sizes small. Thus, we cannot be certain how robust these findings are. Neither did we find any evidence, in measures reported on in the supplementary materials, that the dynamic communication style inspired participants to consider a vegetarian diet themselves. However, behaviour change might only occur after interacting with multiple meat-refusers whom one likes and can relate to, instead of only one. The small effects observed in our study on the basis of one meat refuser could magnify after multiple positive interactions with dynamically communicating meat-refusers. Future research should address this possibility more thoroughly. Possibly, exposure to multiple meat refusers with a dynamic communication style would gradually change the stereotype of meat-refusers as dogmatic and judgemental, as would be predicted by the bookkeeping model of stereotype change (e.g. Queller & Smith, 2002).

In contrast to Monin et al. (2008), none of our studies showed any effects on interpersonal attraction as measured by the interest in...
interacting with the target. As noted before, this might be related to the fact that their study was conducted in the laboratory and ours via internet. This may have reduced the ecological validity of the attraction scale and our adjustments to the scale in the second study may not have been sufficient to accommodate this difference. Thus, future research should examine the robustness of our findings across online and offline settings more thoroughly. This is especially relevant when taking into account that communication between different groups in society increasingly takes place online e.g. via social media.

Nevertheless, our online moral-threat paradigm appears to provide substantial advantages for future research and can contribute to the growing body of literature on the rejection of ethical do-gooders. Our results suggest that participants were not merely passive observers, but were caught in complying with a request that they could easily have refused. In combination with a more diverse pool of participants than what is usually drawn upon in on-campus experiments (Prolific, 2021), the online setting of our studies allowed us to recruit plenty of meat eaters and conduct this research even during times of a global pandemic.

4.2. Practical implications

Next to the methodology and theoretical contributions, this study has several applied implications. We have argued that moral do-gooders (in this case, meat-refusers) provoke a moral threat which typically results in psychological reactance and self-defence instead of feeling inspired to change one’s behaviour. This counter-productive response can be reduced by a dynamic, process-oriented communication style that allows room for search and flexibility.

Social movements, as well as organizations that advocate animal rights and climate justice, can benefit from the results of this study in their communication. Research on animal advocacy campaigns already indicated that dynamic messages such as ‘Try vegan’ might more readily lead to behaviour change than messages with a more static communication such as ‘Go vegan’ (Bryant, 2019). Instead of presenting plant-based diets as stable and unchanged, campaigns might thus be more efficient by using dynamic communication and thereby promoting a positive image of meat-refusers, which can eventually lead to a decrease in meat-consumption.

Our participants saw only one meat refuser. Eventually, if they are exposed to more meat-refusers or social movements who communicate about plant-based diets in a dynamic way, they may be more likely to start reconsidering their own choices. Moreover, if the negative stereotype of vegetarians and vegans is disconfirmed, it is also more likely, that meat eaters engage in interpersonal interactions with them, rather than avoid them.

In the past years, attitudes on the topic of meat consumption have become polarised. Friendly intergroup contact can reduce conflict and may eventually increase the odds of social change instigated by the minority group. In the case of meat, this could not only reduce animal suffering and biodiversity loss (Godfray et al., 2018) but also improve human health, prevent future pandemics transmitted from animals to humans (González et al., 2020; Li et al., 2020) and slow down the climate crisis (Bruno et al., 2019; Veeramani et al., 2017).

5. Conclusion

This study examined the moral threat induced by meat-refusers, subsequent defensive derogation, and how these effects can be diminished. Our novel approach to use different communication strategies as a way to enhance open-mindedness towards meat-refusers showed promising results. We demonstrated that dynamic communication decreases the derogation of meat-refusers and thereby increases their likeability. Eventually, this can result in more possibilities for behavioural and social change. The findings of our two studies provide a reliable basis to conduct further research on ways to communicate about plant-based diets in daily interactions as well as in society.

Declaration of competing interest

The authors declare no conflict of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.appet.2021.105602.

Ethical statement

This manuscript was not submitted anywhere else. The research was conducted with human participants who participated voluntarily after informed consent. All ethical guidelines in the treatment of participants and in conducting and analysing the studies were followed. All raw data are freely available to any researcher wishing to use them for non-commercial purposes, without breaching participant confidentiality.

This research was approved by the ethical committee of the Behavioural Science Institute at Radboud University.

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