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Compassionate Goals as a Buffer: Investigating Their Role in
Mitigating Psychological Reactance to Measures Aimed at
Reducing Meat Consumption

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Lena Scharnböck BSc

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Abstract

This research explored the impact of message phrasing on psychological reactance by examining whether high-controlling and low-controlling messages aimed at reducing meat consumption differ significantly from each other and a control group. Additionally, the moderating role of compassionate goals in this relationship was assessed. In an online survey (N = 396), participants were randomly assigned to one of three groups, reading either a high-controlling, low-controlling, or a neutral message. The results showed that high-controlling language elicited higher levels of psychological reactance than both low-controlling language and the control group. Moreover, a moderation analysis confirmed the mitigating effect of compassionate goals in the context of high-controlling messages. Specifically, individuals with higher levels of compassionate goals were less affected by high-controlling messages than those with lower levels of compassionate goals. These findings highlight the importance of message design in effectively communicating restrictive messages.

Keywords: message phrasing, high-controlling, low-controlling, psychological reactance, compassionate goals

Abstract

Diese Studie untersuchte den Einfluss der Formulierung einer Nachricht auf psychologische Reaktanz, indem überprüft wurde, ob sich hoch-kontrollierende und niedrig-kontrollierende Nachrichten zur Reduzierung des Fleischkonsums signifikant voneinander und von einer Kontrollgruppe unterscheiden. Darüber hinaus wurde die Rolle von mitfühlenden Zielen als Moderator in dieser Beziehung analysiert. In einer Online-Umfrage (N = 396) wurden die Teilnehmenden zufällig einer von drei Gruppen zugeordnet, in der sie entweder eine hoch-kontrollierende, niedrig-kontrollierende oder eine neutrale Nachricht lasen. Die Ergebnisse zeigten, dass hoch-kontrollierende Sprache höhere Werte an psychologische Reaktanz hervorrief als sowohl niedrig-kontrollierende Sprache als auch die Kontrollgruppe. Zudem bestätigte eine Moderationsanalyse die mildernde Wirkung von mitfühlenden Zielen im Kontext hoch-kontrollierender Nachrichten. Konkret waren Personen mit höheren Werten an mitfühlenden Zielen weniger stark von hoch-kontrollierenden Nachrichten betroffen als Personen mit niedrigeren mitfühlenden Zielen. Diese Ergebnisse unterstreichen die Bedeutung der Gestaltung von Botschaften für eine effektive Kommunikation restriktiver Inhalte.

Schlüsselwörter: Sprachgestaltung, hoch-kontrollierend, niedrig-kontrollierend, psychologische Reaktanz, mitfühlende Ziele

Compassionate Goals as a Buffer: Investigating Their Role in Mitigating Psychological Reactance to Measures Aimed at Reducing Meat Consumption

Each year, Austrians consume an average of 59 kilograms of meat, accounting for one-fourth of our ecological footprint (Umweltverband WWF Österreich, 2023). In 2022, Austria recorded 72.6 million tons of CO₂-equivalent greenhouse gas emissions, with 8.1 million tons directly arising from the agricultural sector (Umweltbundesamt GmbH, 2023). Notably, 67 % of all food-related greenhouse gas emissions can be attributed to the production of meat products, resulting in each person in Austria generating 2.500 kilograms of food-related CO₂ equivalent per year, roughly the same as driving from Vienna to Peking and back by car (Umweltverband WWF Österreich, 2023).

Given the significant impact on the environment, communicating and recommending dietary changes, specifically the reduction of meat consumption, is essential to counteract the effects of climate change (e.g. Schiermeier, 2019). However, despite the gravity of these environmental challenges, many people are reluctant to adopt pro-environmental behaviors, such as changing their dietary habits. In general, it has been observed that compliance with such recommendations is often unlikely, as individuals frequently do not follow them (e.g. Chang, 2021; Sparkman et al., 2021; Yuan & Lu, 2020). This raises an important question: Why do some people resist recommendations for pro-environmental behaviors that could not only benefit the planet but also promote their own well-being?

Prior research identified psychological barriers that can hinder people from adopting pro-environmental behaviors. One of these barriers is psychological reactance, a defensive reaction to perceived threats to one's freedom (Gifford, 2011). When individuals perceive a message as controlling or restrictive to their autonomy, they may experience psychological reactance, leading them to either reject the recommendations (Brehm, 1966; Miller et al., 2007) or adopt opposing behaviors (Byrne & Hart, 2009). Specifically, the wording of such

messages is crucial in determining whether individuals feel that their freedom is restricted (Miller, 2015; Miller et al., 2007; Quick et al., 2012).

But one question remains: Why do some people choose to follow these recommendations for pro-environmental behaviors, while others resist them? The explanation for these differing reactions may be rooted in social motivation (Ospina et al., 2021).

Previous research has shown that individuals primarily motivated by compassionate goals view all people as interconnected and prioritize the well-being of others (Crocker & Canevello, 2008). This cooperative mindset, typical for compassionate goals, can foster pro-environmental behaviors, such as reducing meat consumption (Ospina et al., 2021; Yue & Yang, 2022). This suggests that people with higher levels of compassionate goals may be less affected by restrictions than those with lower levels and, therefore, are more likely to follow recommendations.

Consequently, this study aimed to examine the relationship between message phrasing, psychological reactance, and compassionate goals in a pro-environmental context.

Theoretical Background

People tend to value the freedom to make their own decisions. When this freedom gets taken away, like in this study, by presenting measures to reduce meat consumption people can react negatively (Brehm, 1966).

Psychological Reactance Theory

A central theory that addresses this is Psychological Reactance Theory (PRT), which is based on Cognitive Dissonance Theory (Brehm, 1966; Festinger, 1957). Both theories concentrate on motivational arousal and its reduction, with the main difference being that Psychological Reactance Theory focuses on maintaining an individual's freedom to choose certain behaviors (Brehm, 1966) while Cognitive Dissonance Theory focuses on reducing dissonance and establishing consonance (Festinger, 1957).

According to PRT an individual's freedom to choose is crucial to their lives and if this freedom is threatened or eliminated, they experience psychological reactance, a motivational state that triggers freedom restoration (Brehm, 1966). The fundamental concept of Psychological Reactance Theory is this motivation to restore a threatened freedom. PRT is defined by two assumptions. The first assumption claims that people have a set of freedoms they believe they can act upon. These freedoms can include behaviors associated with the past, present, or future (Brehm, 1966). The second assumption proposes that individuals are motivated to restore their freedom when these behaviors are threatened or eliminated (Brehm, 1966).

Furthermore, PRT can be broken down into four core components: freedoms, elimination of or threat to freedom, arousal of psychological reactance, and freedom-restoration (Dillard & Shen, 2005). These components are important for understanding how individuals react when their freedoms are threatened. In the context of freedom-threatening

communication, like messages aimed at reducing meat consumption, these factors can help to understand why some messages trigger psychological reactance.

As previously mentioned, people have a set of freedoms they can enact at any time (Brehm, 1966). But not all behaviors are considered freedoms. Individuals need to be aware of their freedom, meaning they need to know that it exists and feel capable of acting upon said freedom (Brehm & Brehm, 1981). In conclusion, freedoms are subjective, if a person thinks they have a freedom and feel able to enact it, that freedom exists (Wicklund & Brehm, 1968).

The second component, elimination or threat to freedom, is derived from the assumption, that restriction of a freedom is unpleasant and results in motivation to restore that freedom (Brehm, 1966). Specifically, when people are hindered completely from enacting a behavior, a freedom is considered eliminated (e.g., outright bans; Mazis et al., 1973). Conversely, anything that does not entirely eliminate a freedom but restricts it is defined as a threat (e.g., social influence; Brehm, 1966).

The third component, arousal of psychological reactance, depends on the freedom's characteristics, and the threat itself (Brehm, 1966). PRT proposed, that the level of arousal is defined by the number of freedoms being threatened and the personal importance of a threatened freedom (Brehm & Brehm, 1981). The severity of a threat determines the level of arousal, such that more severe threats elicit higher levels of psychological reactance (Brehm, 1966; Organ, 1974). Another factor that can influence the level of psychological reactance is the perceived intention of a threatening agent. If the recipient perceives the agent as attempting to explicitly persuade them, the level of psychological reactance is likely to be heightened (Brehm, 1966).

For the fourth component of Psychological Reactance Theory, freedom restoration, can manifest itself directly or indirectly. Individuals may restore their freedom directly by

acting upon the restricted behavior (e.g. drinking when confronted with an alcohol ban) or by resisting a recommended behavior (e.g. rejecting vaccination recommendations) (Reynolds-Tylus, 2019). These reactions are often referred to as the boomerang effect (Byrne & Hart, 2009). Individuals may attempt to indirectly restore their freedom by social implication, for example, by watching another person enacting a similar behavior (Brehm & Brehm, 1981). Another way to reduce discomfort caused by psychological reactance is by increasing the attractiveness of a restricted behavior (Brehm & Rozen, 1971) or by expressing hostility towards the source of a threat (Nezlek & Brehm, 1975).

Psychological Reactance Theory allows hypotheses to be derived about how and under which conditions psychological reactance is triggered and about the role of restrictive communication. In this study, I applied this theory to the context of reducing meat consumption by examining how different message phrasings affect psychological reactance. The theory is central to understanding why certain phrasings are perceived as threats to a person's freedom, eliciting psychological reactance.

Psychological Reactance and Message Design

For this reason, Psychological Reactance Theory plays a major role in communication research (Quick et al., 2012), particularly when using promotional messages for both commercial and public interest purposes (Miller et al., 2007). Persuasive messages are of great interest in communication research (Reynolds-Tylus, 2019), especially in health communication, for example, when trying to counteract smoking (Grandpre et al., 2003), drug use (Miller et al., 2007), or alcohol consumption (Rains & Turner, 2007). Although some campaigns aimed at promoting or discouraging certain behaviors are successful (Anker et al., 2016) others, even when well-intentioned, can lead to people adopting opposing behaviors (Byrne & Hart, 2009). Psychological Reactance Theory offers an explanation for these boomerang effects in communication. According to PRT, freedom-threatening

language, which explicitly tries to restrict a person's autonomy, will lead to higher levels of psychological reactance than non-freedom-threatening language (Brehm & Brehm, 1981; Quick et al., 2012).

Prior research suggested that messages using freedom-threatening phrases can be highly ineffective across different contexts (e.g. Chang, 2021; Dillard & Shen, 2005; Ma & Miller, 2022; Sparkman et al., 2021; Staunton et al., 2020). Across literature this type of language is referred to by several different terms, such as “controlling language” (Miller et al., 2007), “dogmatic language” (Quick & Stephenson, 2008), “domineering language” (Quick et al., 2015), and “forceful language” (Quick & Considine, 2008). For clarity, in this study I used the term “controlling language” to describe this concept. High-controlling language encompasses explicit statements, commands, demands, and orders, leading to higher levels of reactance and resistance than low-controlling language that uses recommendations or suggestions (Miller, 2015). Typical phrases used in high-controlling messages include “should”, “ought”, and “must”, which convey direct and explicit orders to individuals (Miller, 2015; Staunton et al., 2020). While such language may be task-efficient, clear, and straightforward (Grice, 1975), it also generates greater psychological reactance compared to low-controlling language (Quick et al., 2012). Another characteristic of high-controlling language is its use of imperatives instead of propositions or suggestions (Grandpre et al., 2003; Miller et al., 2007). This form of language tends to increase perceived freedom threat, thereby eliciting psychological reactance (Miller et al., 2007). Additionally, opinionated language, characterized by absolute statements, represents another form of controlling language threatening autonomy and consequently generating psychological reactance (Miller, 2015). Phrases like “It cannot be denied” or “There is no doubt” reflect the source’s opinion on a topic in a controlling manner (Miller, 2015).

In contrast to high-controlling language, low-controlling language is characterized by less assertive and more autonomy-supportive language, generating lower levels of psychological reactance (Rosenberg & Siegel, 2018). This type of language includes phrases like “perhaps”, “possibly”, and “maybe”. Such implicit messages are considered to be more effective in encouraging desired behaviors (Miller, 2015; Staunton et al., 2020). By leaving room for interpretation, low-controlling language receivers are prompted to draw their own inferences and implications, resulting in higher levels of autonomy and independence (Miller et al., 2007).

The distinction between high-controlling and low-controlling language is particularly relevant for my study, as it demonstrates how different message phrasings aimed at reducing meat consumption elicit different levels of psychological reactance when compared to each other and to a control group (Quick et al., 2012). Based on this theoretical framework, I developed the following hypothesis:

H1a: The use of high-controlling phrasing and low-controlling phrasing in messages to reduce meat consumption leads to higher levels of psychological reactance compared to a control group.

Building on this, high-controlling messages trigger higher levels of psychological reactance due to their freedom-threatening phrasing, while low-controlling messages, characterized by their autonomy-supporting phrasing, lead to lower levels of psychological reactance (Miller, 2015; Rosenberg & Siegel, 2018). Therefore, I developed the following hypothesis:

H1b: The use of high-controlling phrasing in messages to reduce meat consumption leads to higher levels of psychological reactance compared to low-controlling phrasing.

Egosystem and Ecosystem Motivation

Understanding individual differences in social motivation is important for explaining why some people react more strongly to controlling messages than others. While Psychological Reactance Theory explains people's reactions to threats to their autonomy (Brehm, 1966), it does not fully include these individual differences, underlying these reactions. Egosystem and ecosystem motivation offer further explanations about how goals might influence a person's reaction to a controlling message (e.g. Crocker & Canevello, 2012; Crocker & Canevello, 2018).

The theory of the egosystem and ecosystem is based on the assumption that social motivation systems evolved from motivational systems for self- and species-preservation (Crocker & Canevello, 2018). The primary function of the self-preservation system, also known as the fight-or-flight system, is to ensure the survival of the individual by mobilizing biological resources (De Catanzaro, 1991). In contrast, the species-preservation system, often referred to as the caregiving system, promotes the survival of individuals, their offspring, and the social group by suppressing fight-or-flight responses, thereby allowing individuals to take care of others (Henry & Wang, 1998). These two evolved motivational systems, along with uniquely human cognitive capacities, form the basis for human social motivation (Crocker & Canevello, 2018).

Egosystem Motivation

In contrast to the self-preservation system, which utilizes resources in response to threats to survival, the egosystem mobilizes resources in response to threats to an individual's desired self-image (Crocker & Canevello, 2018). This system is defined by the assumption that outcomes (e.g. jobs, relationships, or being treated with respect) depend on status and other people's impressions of an individual (Crocker & Canevello, 2012). Consequently, individuals aim to highlight their desirable qualities while downplaying or concealing their

negative qualities (Crocker & Canevello, 2012, 2018). By controlling the impressions they make, individuals try to convince others that they are deserving of favorable outcomes (Crocker & Canevello, 2012). Establishing positive impressions goes beyond just having desirable qualities. It is crucial that others recognize these qualities (Crocker & Canevello, 2012).

Another characteristic of individuals driven by the egosystem is their tendency to prioritize their own needs and desires over those of others. They may show indifference to the consequences their actions have on others, as long as their own needs are met. Other individuals only matter if they contribute to the satisfaction of one's own wishes and desires (Crocker & Canevello, 2012).

Similar to the self-preservation system, the egosystem may offer short-term advantages but lead to long-term disadvantages. On one hand, being aware of the impressions they have on other people can be beneficial for individuals, especially during initial meetings or when trying to improve their status (Crocker & Canevello, 2018). On the other hand, egosystem motivation occupies cognitive resources, which consequently become unavailable for other goals, such as understanding others (Crocker & Canevello, 2018). These characteristics of egosystem motivation play a significant role in self-image goals, which are hallmarks of this motivational system. (Crocker & Canevello, 2012, 2015).

Self-image Goals. One of the main aspects of self-image goals is the comparison with others; for instance, individuals not only strive to be seen as qualified for a job but aim to appear more qualified than their competitors (Crocker & Canevello, 2012). This competitiveness leads individuals with self-image goals to view relationships as zero-sum or win-lose scenarios, based on the assumption, that gains for one individual come at the expense of another (Crocker & Canevello, 2008, 2012). Individuals with self-image goals prioritize their own needs and desires over those of others, which can lead to conflicts and

loneliness (Crocker & Canevello, 2008). Additionally, those with these goals may view others as threatening, as they have the power to grant or deny desired resources, such as status or affection (Crocker & Canevello, 2008).

Ecosystem Motivation

While the species-preservation system focuses on supporting relatives and close individuals, it can become costly when applied to a larger social system (Brown & Brown, 2006). In contrast, individuals motivated by the ecosystem emphasize sustainable support for a larger interpersonal or even interspecies system, ensuring that the support benefits both the self and others (Crocker & Canevello, 2018). The ecosystem can encompass not only ingroup members but also outgroup members, acquaintances, strangers, and even those who differ from or are in conflict with oneself (Crocker & Canevello, 2012).

In the ecosystem people view their own needs and desires as interconnected with those of other people or species, recognizing that their well-being depends on the well-being of others and a broader social system. Therefore, meeting others' needs becomes as important as fulfilling one's own, as prioritizing personal desires at the expense of others can disadvantage both the entire system and the individual (Crocker & Canevello, 2012). Both the system and its members flourish, when the needs of every individual are met (Canevello & Crocker, 2017). People motivated by the ecosystem believe that their needs and desires will be met by other members of the system, as they genuinely care about their well-being rather than engaging in reciprocal exchanges of benefits (Crocker & Canevello, 2015).

In this context, individuals motivated by the ecosystem often experience a sense of cooperation with others and hold non-zero sum beliefs about desirable outcomes, meaning they assume that one person's gains do not come at the expense of others (Crocker & Canevello, 2008). These cooperative mindsets enable individuals to feel more at ease,

peaceful, and clear in their social interactions, in contrast to competitive mindsets (Canevello & Crocker, 2017; Crocker & Canevello, 2008).

Like the species-preservation system, the ecosystem may be costly in the short-term, but beneficial in the long-term. For instance, people may fail to gain status because they do not prioritize other people's impressions of them. Instead, they utilize their cognitive resources to understand others and their needs, fostering deeper and more sustainable relationships in the long-term (Crocker & Canevello, 2018). While self-image goals are hallmarks of egosystem motivation, ecosystem motivation can be characterized by compassionate goals.

Compassionate Goals. These goals focus on helping others not for personal gain but out of genuine concern for their well-being. Individuals with compassionate goals aim to be constructive in their interactions and to avoid harming others (Crocker & Canevello, 2008). They are characterized by a desire to be supportive of others (Crocker & Canevello, 2008, 2012), which fosters feelings of ease and connection in social situations, partly because people feel like their supportive goals align with those of others (Canevello & Crocker, 2017). Compassionate goals can be both static and dynamic, fluctuating depending on the context and time (Crocker & Canevello, 2012). Additionally, these goals foster a cooperative and collaborative mindset (Canevello & Crocker, 2017; Crocker & Canevello, 2008), which is associated with a higher likelihood of engaging in prosocial behaviors (Curtin & Jia, 2020; Klein et al., 2022).

In this study, compassionate goals function as a moderator, as they can play a significant role in explaining individual reactions to controlling messages. Specifically, in the context of pro-environmental behaviors, like the reduction of meat consumption, prior research has shown that compassionate goals robustly predict prosocial behaviors, such as donating to the Red Cross (Lim & DeSteno, 2016). Individuals with higher compassionate

goals, who feel interconnected, are expected to act in ways that protect their ecosystem and enhance the well-being of both themselves and others (Ospina et al., 2021). They might be less affected by controlling messages, because their altruistic orientation aligns with the pro-environmental goals of the message. Based on these theoretical considerations, I developed the following hypotheses:

H2a: Compassionate goals moderate the relationship between message phrasing and psychological reactance. Specifically, individuals with higher levels of compassionate goals will exhibit lower psychological reactance in response to both high-controlling and low-controlling messages, compared to those with lower levels of compassionate goals.

H2b: Compassionate goals moderate the relationship between message phrasing and psychological reactance. Specifically, individuals with higher levels of compassionate goals will exhibit lower psychological reactance in response to high-controlling messages compared to those with lower levels of compassionate goals, and this effect will be more pronounced compared to their reaction to low-controlling messages.

The moderating effect of compassionate goals is examined across the three conditions: high-controlling, low-controlling, and control group.

Contribution to Research

The primary focus of this study is to integrate the concept of compassionate goals with Psychological Reactance Theory. Specifically, it aims to examine whether compassionate goals moderate the relationship between message design and psychological reactance. Before exploring the moderating role of compassionate goals, the study seeks to confirm whether Psychological Reactance Theory can be further supported in the context of

pro-environmental behaviors, such as reducing meat consumption. This is investigated by comparing high-controlling and low-controlling messages with a control group.

Over the past few decades, extensive research on psychological reactance has focused on message design in various health-related contexts, including vaccination (Ma & Miller, 2022), anti-smoking (Clayton et al., 2020; Grandpre et al., 2003), and organ donation (Quick et al., 2015) campaigns. However, the application of Psychological Reactance Theory in the context of pro-environmental behaviors, such as the reduction of meat consumption has been limited. For example, while Sparkman et al. (2021) demonstrated that direct appeals to reduce meat consumption resulted in psychological reactance, it remains unclear whether more subtle appeals would result in similar responses. Additionally, Yuan and Lu (2020) found that aggressive messages promoting pro-environmental behaviors elicit greater psychological reactance than non-aggressive ones.

While much of the existing research focused on message design and its impact on psychological reactance, by exploring how different types of message phrasing affect psychological reactance, this study contributes to existing literature, providing further insight into the current understanding of psychological reactance.

Additionally, the role of personal goals in mitigating psychological reactance has been largely overlooked in prior literature. By considering compassionate goals as a potential moderator, this study addresses an important gap, offering new insights into how personal motivation can influence the acceptance of pro-environmental messages. Previous research primarily focused on compassionate goals in the context of close relationships (e.g. Crocker & Canevello, 2015), with limited attention on their role in prosocial behaviors.

However, compassionate goals were shown to predict prosocial behaviors, including pro-environmental behaviors. Studies indicated that individuals ranking high in compassionate goals are more likely to engage in such behaviors (Ospina et al., 2021; Yue &

Yang, 2022). By integrating these findings, this study not only aims to extend the application of compassionate goals to a new context but also to contribute to a broader understanding of how personal motivations can mitigate psychological reactance.

The Present Study

Overall this study has two main objectives. The first goal is to explore the relationship between message phrasing and psychological reactance to determine whether differences in phrasing (i.e., high-controlling or low-controlling) elicit different levels of psychological reactance. To test this, participants were randomly presented with one of three possible messages: a high-controlling message, a low-controlling message, or a neutral message. Afterwards psychological reactance was assessed.

The second aim is to investigate whether individual differences, in the form of compassionate goals, buffer the effect of message phrasing on psychological reactance. To test this, participants' compassionate goals were measured and analyzed through a moderation analysis.

Method

Participants

A prior power analysis indicated that a total sample size of 344 participants was required. The original sample included 435 participants, of whom 39 were excluded due to missing values, resulting in a final sample of 396 participants (197 female, 179 male, 13 divers, seven no answer, $M_{\text{age}} = 29.18$ years, $SD_{\text{age}} = 11.22$). Participants were recruited through a combination of convenience and snowball sampling.

The educational background of the participants was as follows: 155 participants held at least a bachelor's degree (35.6%), 132 had a high school diploma (30.3%), 61 had a master's degree (14%), 31 had completed an apprenticeship (7.1%), nine participants had a doctor's degree (2.1%), three people had their mandatory school leaving certificate (0.7%), and one participant had no degree (0.2%). The remaining four participants had other qualifications (0.9%).

The online survey was conducted via Unipark and took between 3 and 5 minutes to complete. Initially, the study was sent to friends and family, who then shared it with additional contacts. Subsequently, the survey was posted on multiple social media platforms, including Facebook, Twitter, and Reddit. To qualify, participants were required to be at least 18 years old and not exclusively vegan or vegetarian. Those who did not meet these criteria were excluded from further participation in the survey.

Design and Procedure

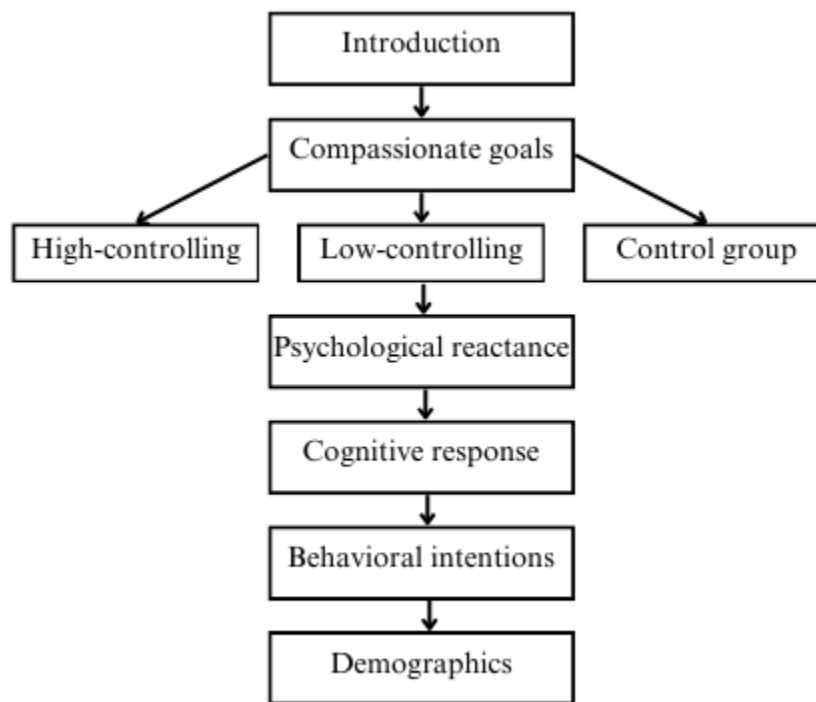
This study employed a between-subjects design, with participants randomly assigned to one of three conditions: a high-controlling condition, a low-controlling condition, and a control group. These three conditions represented the independent variable, which was operationalized through different types of message phrasing. Random assignment ensured the elimination of selection bias and comparability between the groups. Psychological reactance

served as the dependent variable, while compassionate goals acted as a moderator, examining how these goals might influence the relationship between message phrasing and psychological reactance.

As illustrated in Figure 1, at the start of the survey, participants were briefed on the study's purpose, estimated duration, and provided with contact information for any questions or concerns. They were also informed about their rights and the privacy policies regarding their data.

Next, participants were asked whether they followed a strictly vegan or vegetarian diet. If the answer was "yes", the survey ended. Those who continued were asked about their compassionate goals, followed by the presentation of one of the three messages aimed at reducing meat consumption. Of the 396 participants, 132 (30.3%) were assigned to the high-controlling condition, 136 (31.3%) to the low-controlling condition, and 128 (29.4%) to the control group.

After reading the assigned message, psychological reactance was assessed by asking participants to rate four emotions: angry, irritated, annoyed, and aggravated. This was followed by cognitive response and behavioral intentions, along with demographic information, including gender, age, and level of education.

Figure 1*Experimental Design***Materials**

This study utilized three different text messages regarding meat consumption. Depending on the assigned condition, participants received either a high-controlling message, a low-controlling message, or a neutral message for the control group.

In the high-controlling condition, participants read the following message: “Versetzen Sie sich in folgende Situation: Die Regierung hat eine dringende Maßnahme ergriffen, um unseren Fleischkonsum in öffentlichen Einrichtungen wie Büros oder Schulen zu kontrollieren. Ab sofort ist es untersagt, Fleisch ohne gültige Fleischmarken zu erwerben. Jede Einrichtung erhält monatlich eine festgelegte Anzahl an Fleischmarken. Man darf nicht über diese Grenzen hinaus Fleisch kaufen. Diese Maßnahme ist unabdingbar, um den Fleischkonsum zu regulieren und die negative Auswirkungen auf das Klima zu reduzieren. Es

ist unsere Pflicht, diese Regelung strikt einzuhalten und einen Beitrag zum Schutz unserer Umwelt zu leisten.“ This message used high-controlling language, incorporating phrases like “it is forbidden”, “not allowed”, and “it is our duty”.

In the low-controlling condition, participants received this message: “Versetzen Sie sich in folgende Situation: Laut aktuellen Studien legen Ernährungsempfehlungen nahe, dass pro Tag nicht mehr als 42 Gramm Fleisch gegessen werden sollen. In Deutschland und Österreich liegt der durchschnittliche tägliche Fleischkonsum jedoch weit über diesen Empfehlungen – bei 141 Gramm bzw. 161 Gramm. Vielleicht möchten wir alle gemeinsam darüber nachdenken unseren Fleischkonsum zu überdenken und gegebenenfalls zu reduzieren.“ This message used low-controlling language, featuring phrases like “recommendation”, “maybe we could”, and “possibly”.

Participants in the control group received this neutral text: “Versetzen Sie sich in folgende Situation: Sie entdecken online, dass in Österreich jede Person durchschnittlich 59 Kilogramm Fleisch pro Jahr konsumiert, während zusätzlich jährlich im Durchschnitt 124 Kilogramm Gemüse und 75 Kilogramm Obst pro Person verzehrt werden.“

Compassionate Goals

The scale used to measure compassionate goals was adapted from Crocker and Canevello (2008) and translated into German. It comprises seven items: “I want to or try to be supportive of others”, “I want to or try to have compassion for others’ mistakes and weaknesses”, “I want to or try to avoid doing anything that would be harmful to others”, “I want to or try to make a positive difference in someone else’s life”, “I want to or try to be constructive in my comments to others”, “I want to or try to avoid being selfish or self-centered”, and “I want to or try to avoid doing things that are not helpful to me or others”. Participants responded on a 5-point Likert scale (1 = *not at all* to 5 = *always*), with high values indicating higher levels of compassionate goals. The mean score of the seven items

was calculated for further analysis. The scale demonstrated acceptable internal consistency, with a Cronbach's Alpha of 0.77.

Psychological Reactance

Psychological reactance was measured following the procedure outlined by Dillard and Shen (2005). Participants were asked to rate how angry, irritated, annoyed, and aggravated they felt after reading the assigned message. The four items were translated into German and rated on a 5-point Likert scale (1 = *none of this feeling* to 5 = *a great deal of this feeling*), with high values indicating higher levels of psychological reactance. The mean score of the four items was calculated for further analysis. The scale demonstrated high internal consistency with a Cronbach's Alpha of 0.88.

Cognitive Response

Independent of psychological reactance, participants' cognitive responses were conducted with the following item: "Briefly describe what went through your mind when you read the text." Responses were given in an open-text field.

Behavioral Intentions

Additionally, participants' behavioral intentions were measured using the following item: "How much would you be willing to reduce your meat consumption?" Responses were given on a 5-point Likert scale (1 = *not at all* to 5 = *to a great extent*), with high values indicating more willingness to reduce meat consumption.

Results

To test H1a and H1b, I conducted a one-way ANOVA using SPSS, with the three conditions (high-controlling, low-controlling, and control group) as the independent variable and psychological reactance as the dependent variable. Psychological reactance was calculated by averaging the scores from the four items used to measure it. Initially, a Tukey post-hoc test was planned to identify specific group differences following a significant ANOVA.

Before conducting the analysis, the assumptions of normality and homogeneity of variance were tested in SPSS. The Shapiro-Wilk test indicated a significant deviation from normality ($p < .001$), however, this deviation was considered less problematic due to the large sample size ($n > 10$) and the approximately equal number of participants in each group (Bortz & Schuster, 2010).

Levene's test for homogeneity of variances was also significant ($p < .001$), indicating a violation of this assumption. Consequently, a Welch-ANOVA was performed, followed by a Games-Howell post-hoc test to account for unequal variances.

H2a and H2b were tested by conducting three moderation analyses using the SPSS macro PROCESS. Mean scores were calculated for both the moderator (compassionate goals) and the dependent variable (psychological reactance). The analyses compared the high-controlling condition to the control group, the low-controlling condition to the control group, and the high-controlling condition to the low-controlling condition.

Before conducting the analyses the assumptions of linearity and multicollinearity were checked. Linearity was assessed by visually analyzing scatterplots, which confirmed that the relationships among the variables were approximately linear. Multicollinearity was evaluated using a correlation matrix, which revealed no correlations higher than 0.8, indicating that multicollinearity was not a concern.

Descriptive statistics were generated for the demographics of the sample. Frequencies were reported for gender and level of education, while mean and standard deviation were computed for age. Additionally, two exploratory analyses were conducted. The first analysis involved categorizing participants' open-text responses, where they described their thoughts while reading the message. Responses were classified into three groups: positive, neutral, and negative, based on the nature of the answers. This variable was then included as a dependent variable in the ANOVA. The second exploratory analysis focused on participants' behavioral intentions to reduce meat consumption, which was included as a dependent variable in the ANOVA.

Message Phrasing and Psychological Reactance

To test the first two hypotheses, I conducted a one-way ANOVA to determine whether the dependent variable, psychological reactance, differs significantly across the three conditions of the independent variable, message phrasing (high-controlling, low-controlling, and control group).

The Welch-ANOVA results revealed a significant difference among the three conditions, $F(2, 393) = 31.31, p < .001, \eta^2 = 0.14$. The follow-up Games-Howell post-hoc test indicated significant differences between the high-controlling condition ($M = 2.31, SD = 1.13$) and the control group ($M = 1.46, SD = 0.74$) ($p < .001$) and a significant difference between the high-controlling condition ($M = 2.31, SD = 1.13$) and the low-controlling condition ($M = 1.64, SD = 0.83$) ($p < .001$). No significant difference was found between the low-controlling condition ($M = 1.64, SD = 0.83$) and the control group ($M = 1.46, SD = 0.74$) ($p = .16$). Levels of psychological reactance in the high-controlling condition ($M = 2.31, SD = 1.13$) were significantly higher than in the control group ($M = 1.46, SD = 0.74$) and the low-controlling condition ($M = 1.64, SD = 0.83$). Means and standard deviations are presented in Table 1 and Figure 2.

Table 1

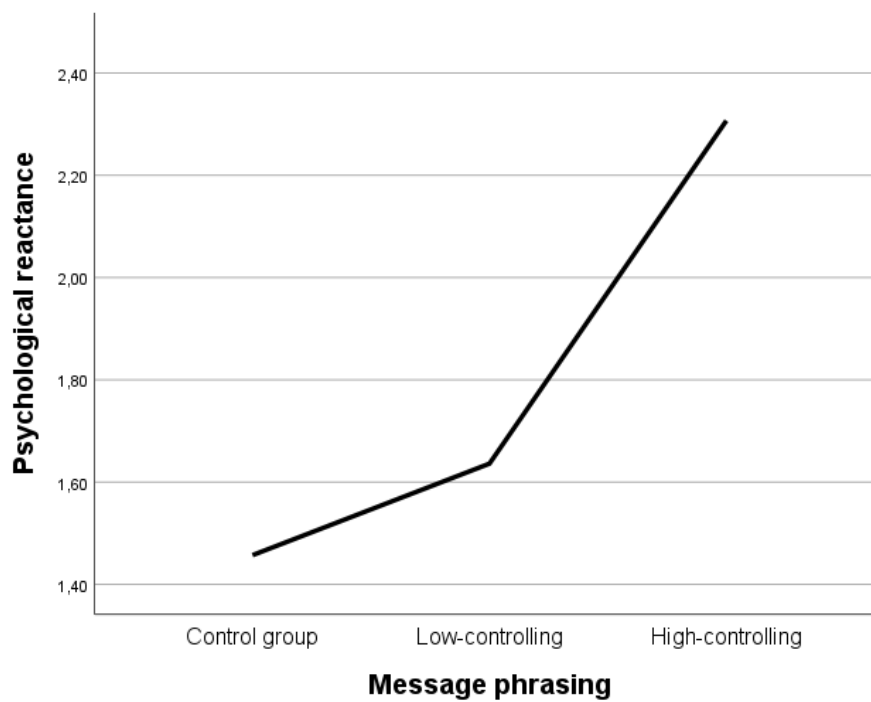
Mean and Standard Deviation of Psychological Reactance across the Conditions

Group	M	SD
Control group	1.46	0.74
Low-controlling	1.64	0.83
High-controlling	2.31	1.13
Total	1.80	0.98

Note. A Games-Howell post-hoc test revealed significant differences between the high-controlling condition and both the control group ($p < .001$) and the low-controlling condition ($p < .001$).

Figure 2

Means of Psychological Reactance across the three Conditions



Compassionate Goals as a Moderator of Message Design and Psychological Reactance

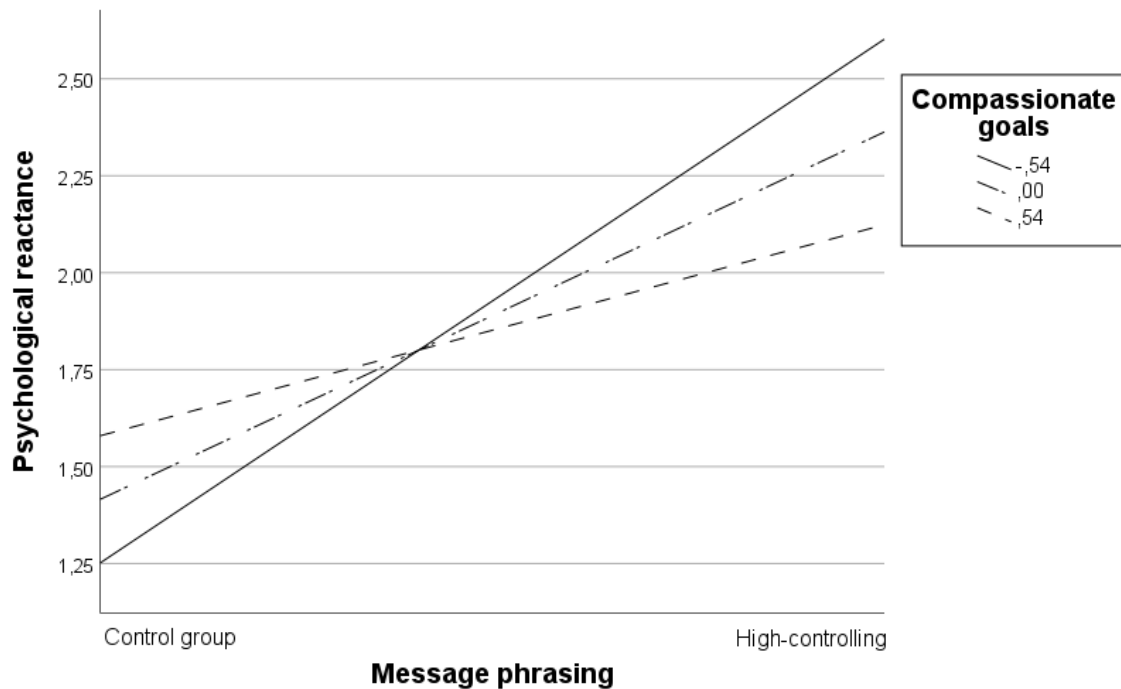
With the moderation hypotheses, I aimed to investigate whether the moderator, compassionate goals, influences the relationship between the independent variable, message phrasing, and the dependent variable, psychological reactance. Specifically, I tested the first hypothesis using a moderation analysis to examine whether higher levels of compassionate goals mitigate the effect of message phrasing on psychological reactance more effectively than low levels, when comparing the high-controlling condition to the control group.

The overall model was significant, $F(3, 256) = 21.14, p < .001$, predicting 19.85% of the variance. Both the main effect of message phrasing on psychological reactance, $b = 0.43, SE = 0.06, t = 7.29, p < .001, 95\% CI [.3111, .5415]$ and the main effect of compassionate goals on psychological reactance, $b = 0.60, SE = 0.26, t = 2.32, p = .02, 95\% CI [.0909, 1.1069]$ were significant. Additionally, the analysis revealed that compassionate goals significantly moderated the relationship between message phrasing and psychological reactance, $b = -0.33, SE = 0.11, t = -3.06, p = .002, 95\% CI [-.5490, -.1192]$.

Simple slope analyses indicated that the relationship between message phrasing and psychological reactance was stronger for low levels of compassionate goals (one standard deviation below the mean), $b = 0.61, SE = 0.08, t = 7.32, p < .001, 95\% CI [.4443, .7712]$ compared to medium levels of compassionate goals (mean), $b = 0.43, SE = 0.06, t = 7.29, p < .001, 95\% CI [.3111, .5415]$, and high levels of compassionate goals (one standard deviation above the mean), $b = 0.24, SE = 0.08, t = 2.93, p = .004, 95\% CI [.0803, .4094]$. Figure 3 confirms that higher levels of compassionate goals mitigated the effect of message phrasing on psychological reactance, particularly when comparing the high-controlling condition and control group.

Figure 3

Moderation of Compassionate Goals on Psychological Reactance: High-controlling vs. Control Group



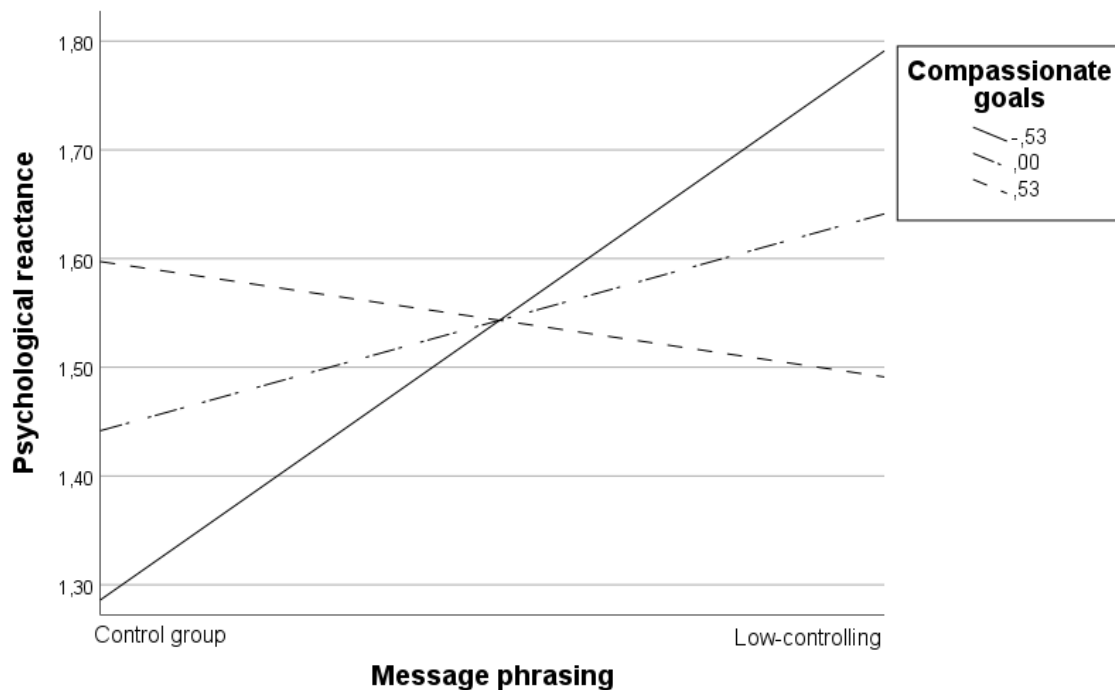
I tested the second hypothesis using a moderation analysis to examine whether higher levels of compassionate goals mitigate the effect of message phrasing on psychological reactance more effectively than lower levels, when comparing the low-controlling condition to the control group.

The overall model was significant, $F(3, 260) = 3.86, p = .01$, predicting 4.27% of the variance. While the main effect of message phrasing on psychological reactance, $b = 0.18, SE = 0.10, t = 1.87, p = .06, 95\% CI [-.0098, .3689]$ was not significant, the main effect of compassionate goals on psychological reactance, $b = 0.78, SE = 0.30, t = 2.62, p = .01, 95\% CI [.1940, 1.3731]$ was significant. The analysis indicated that compassionate goals significantly moderated the relationship between message phrasing and psychological reactance, $b = -0.52, SE = 0.18, t = -2.84, p = .0049, 95\% CI [-.8790, -.1585]$.

Simple slope analyses showed that the relationship between message phrasing and psychological reactance was stronger for low levels of compassionate goals (one standard deviation below the mean), $b = 0.45$, $SE = 0.14$, $t = 3.32$, $p = .001$, 95%, CI [.1848, .7243], but not significant for medium levels of compassionate goals (mean), $b = 0.18$, $SE = 0.10$, $t = 1.87$, $p = .06$, 95%, CI [-.0098, .3689] and high levels of compassionate goals (one standard deviation above the mean), $b = -0.10$, $SE = 0.14$, $t = -0.70$, $p = .48$, 95%, CI [-.3637, .1727]. Figure 4 illustrates the moderating effect of compassionate goals on the relationship between message phrasing and psychological reactance, displaying that the effect varies across different levels of compassionate goals.

Figure 4

Moderation of Compassionate Goals on Psychological Reactance: Low-controlling vs. Control Group



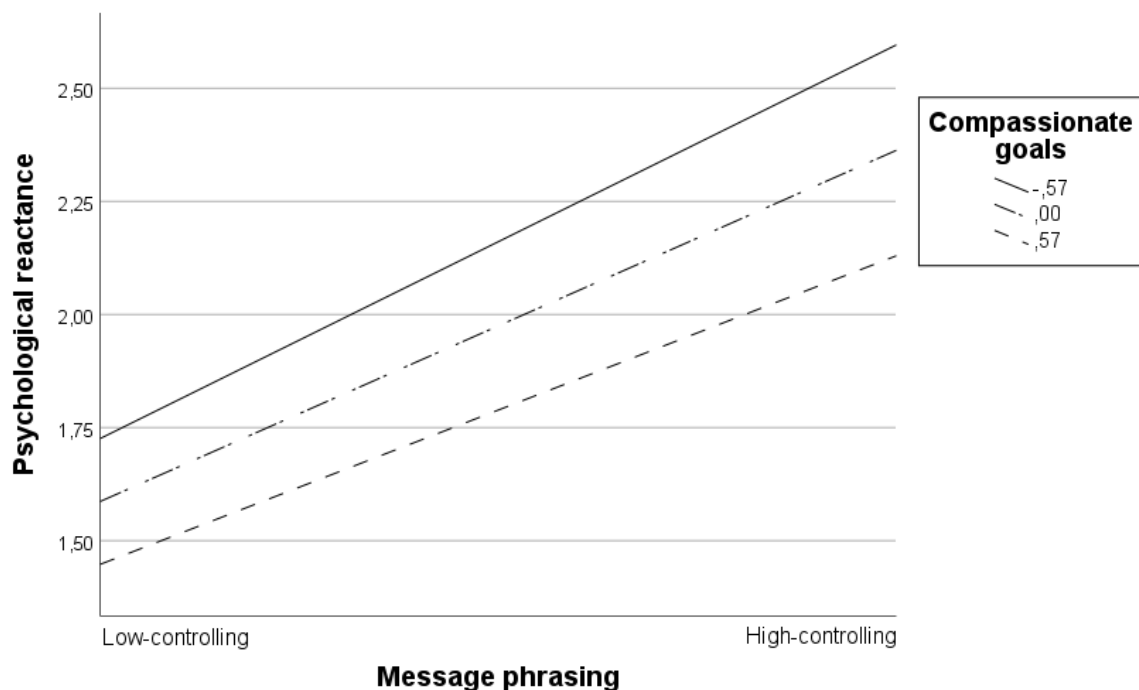
I tested the third hypothesis using a moderation analysis to examine whether higher levels of compassionate goals mitigate the effect of message phrasing on psychological

reactance more effectively than lower levels, when comparing the high-controlling condition to the low-controlling condition.

The overall model was significant, $F(3, 264) = 14.03$, $p < .001$, predicting 13.75% of the variance. The main effect of message phrasing on psychological reactance, $b = 0.70$, $SE = 0.12$, $t = 5.85$, $p < .001$, 95% CI [.4634, .9334] was significant. However, the main effect of compassionate goals on psychological reactance, $b = 0.04$, $SE = 0.54$, $t = 0.08$, $p = .93$, 95% CI [-1.0219, 1.1117] was not significant. The analysis indicated that compassionate goals did not significantly moderate the relationship between message phrasing and psychological reactance, $b = -0.15$, $SE = 0.21$, $t = -0.71$, $p = .48$, 95% CI [-.5656, .2667]. Figure 5 illustrates the interaction between message phrasing and compassionate goals.

Figure 5

Moderation of Compassionate Goals on Psychological Reactance: High-controlling vs. Low-controlling



Exploratory Analysis

To determine whether the three conditions (high-controlling, low-controlling, and control group) differed significantly in their cognitive responses, a one-way ANOVA was initially planned. However, before conducting the analysis, participants' responses to the open-text field, where they described their thoughts while reading the messages, were analyzed and coded for further analysis. Responses were categorized into three groups based on their nature: positive, neutral, or negative. Positive responses were coded as "1", neutral responses as "2", and negative responses as "3".

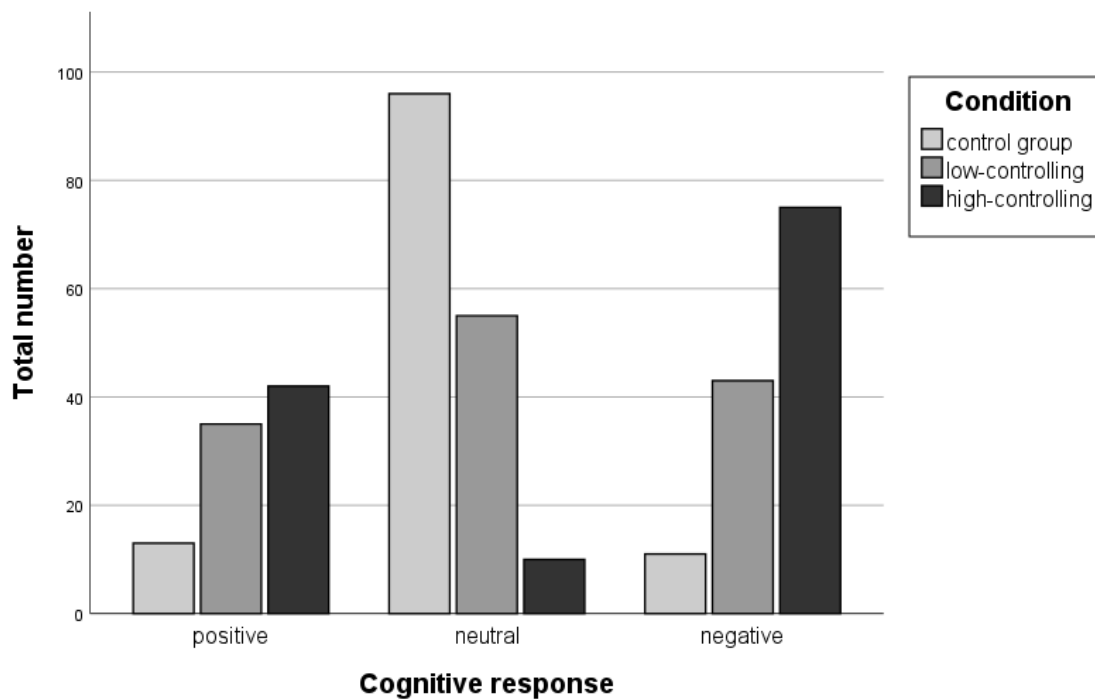
Since the dependent variable is ordinal rather than metric and did not meet the assumptions required for an ANOVA, a Kruskal-Wallis test was conducted to assess differences across the three conditions (high-controlling, low-controlling, and control group).

The results indicated a significant difference between the conditions, $H(2) = 12.20$, $p = .002$, $\eta^2 = 0.03$. A post-hoc analysis revealed that participants in the high-controlling condition ($M = 2.26$, $Mdn = 3.00$) tended to have more negative responses compared to the control group ($M = 1.98$, $Mdn = 2.00$), which favored neutral responses, with $z = -3.40$, $p = .002$. This difference can be quantified with $r = 0.21$, indicating a small effect size (Cohen, 1992). However, no significant difference was found between the high-controlling condition ($M = 2.26$, $Mdn = 3.00$) and low-controlling condition ($M = 2.06$, $Mdn = 2.00$), with $z = -2.38$, $p = .05$, nor between the low-controlling condition ($M = 2.06$, $Mdn = 2.00$) and the control group ($M = 1.98$, $Mdn = 2.00$), with $z = -1.10$, $p = .82$.

As illustrated in Figure 6, a descriptive analysis showed that in the high-controlling condition, the majority of responses were negative (59.1%) followed by positive (33.1%) and neutral (7.9%). In the low-controlling condition, most responses were neutral (41.4%), followed by negative (32.3%) and positive (26.3%). In the control group, the majority of responses were neutral (80.0%), followed by positive (10.8%) and negative (9.2%).

Figure 6

Total Number of Positive, Neutral, and Negative Responses across the three Conditions



Because the dependent variable is ordinal rather than metric, a Kruskal-Wallis test was performed instead of the previously planned one-way ANOVA to examine whether the three conditions (high-controlling, low-controlling, and control group) differed significantly in their behavioral intentions to reduce meat consumption. The results showed a significant difference among the three conditions, $H(2) = 6.07$, $p = .048$, $\eta^2 = 0.01$). However, follow-up post-hoc tests revealed no significant differences between the high-controlling condition and control group ($p = .078$), the high-controlling condition and the low-controlling condition ($p = .128$), or the low-controlling condition and control group ($p = 1.00$).

Discussion

Given the environmental impact of meat consumption, it is crucial to understand how the way a message is phrased can impact a person's reaction. In this study, I aimed to explore the influence of message phrasing on psychological reactance, specifically in the context of reducing meat consumption. More precisely, I investigated whether high-controlling and low-controlling message phrasing leads to different levels of psychological reactance.

To get a more holistic understanding of psychological reactance and individual differences, I examined compassionate goals as a moderator in the relationship between message phrasing and psychological reactance. Compassionate goals, which foster a sense of cooperation and interconnectedness, may reduce perceived threats to autonomy triggered by controlling messages. Therefore, I hypothesized that people with higher levels of compassionate goals are less affected by controlling messages compared to people with lower levels of compassionate goals.

The results confirmed that high-controlling message phrasing (e.g. "it is forbidden", "not allowed", "it is our duty") elicits greater psychological reactance compared to both the control group and low-controlling message phrasing (e.g. "recommendation", "maybe we could", and "possibly"). These findings indicated that participants in the high-controlling condition report stronger feelings of anger, annoyance, irritation, and aggravation than those in the low-controlling condition and the control group, with these emotions operationalizing psychological reactance (Dillard & Shen, 2005).

This study provides strong support for Psychological Reactance Theory, which posits that individuals experience psychological reactance when they perceive a threat to their freedom (Brehm, 1966). In particular, high-controlling language is perceived as more freedom-threatening than autonomy-supporting or low-controlling language, thereby generating higher levels of psychological reactance (e.g. Clayton et al., 2020).

Moreover, the study went beyond comparing high-controlling language with a control group by further comparing high-controlling with low-controlling language. The finding that low-controlling messages elicit lower levels of psychological reactance than high-controlling messages suggests that the phrasing of a message can lead to significantly different reactions from the recipient, even when promoting the same behavior. These findings align with prior research about message phrasing and psychological reactance. For instance, Yuan and Lu (2020) demonstrated that more aggressive language elicits higher levels of psychological reactance than less aggressive language. Similarly, Clayton et al. (2020) found that dogmatic language in public service announcements generates higher levels of psychological reactance compared to more suggestive language.

Despite these findings, the data did not provide evidence that low-controlling messages elicit more psychological reactance than the control group. These results may be attributed to the similarities in phrasing between the low-controlling messages and the control group. Nevertheless, these outcomes underscore the importance of message phrasing when communicating persuasive messages to the public, as this research demonstrated that low-controlling or autonomy-supporting language does not generate high levels of psychological reactance.

Most prior studies compared high-controlling language with either a control group or low-controlling language to confirm that high-controlling language results in higher levels of psychological reactance (e.g. Ma & Miller, 2022; Miller, 2015; Staunton et al., 2020). However, few studies directly compared low-controlling language with a control group, highlighting a notable gap in the existing research, which was addressed in this study.

In addition to examining message designs, it is important to recognize that people vary significantly in their pro-environmental behaviors, attitudes, and their personal goals, which can influence the effectiveness of different messages aimed at promoting the reduction

of meat consumption. For instance, individuals may differ in how they perceive their responsibility toward others and the environment. Some may adopt an ecosystem perspective, prioritizing the well-being of others, while others may focus more on their own needs and desires, adopting an egosystem perspective (Crocker & Canevello, 2008). These differences in personal goals can play a crucial role in the effectiveness of persuasive messages, specifically when examining the moderating effect of compassionate goals on the relationship between message phrasing and psychological reactance. Accordingly, this study explores whether individuals' compassionate goals could mitigate the impact of message phrasing on psychological reactance.

Previous studies showed that compassionate goals can serve as a predictor of prosocial behaviors (Yue & Yang, 2022). Moreover, individuals with high levels of compassionate goals tend to perceive all life as interconnected across time and space, fostering a cooperative mindset (Canevello & Crocker, 2017; Crocker & Canevello, 2008). As a result, individuals with higher levels of compassionate goals are expected to experience less reactance and fewer negative emotions (e.g., anger) when confronted with a high-controlling message promoting the reduction of meat consumption, compared to those with lower levels of compassionate goals.

In line with this, the present research found that compassionate goals can act as a buffer in the relationship between message phrasing and psychological reactance, particularly when participants were confronted with a high-controlling message. People with higher levels of compassionate goals were not as affected by high-controlling messages compared to those with lower levels of compassionate goals. One explanation for these findings lies in the mindset associated with high levels of compassionate goals. Compassionate goals emphasize prioritizing the well-being of others and fostering a sense of interconnectedness. As a result, people with high levels of compassionate goals may view high-controlling messages as less

threatening to their freedom, perceiving the message to be aligned with the broader purpose of promoting the well-being of a larger system through pro-environmental behaviors.

Conversely, those with lower levels of compassionate goals may not feel as connected to or supportive of others, leading them to perceive these controlling messages as more restrictive.

Furthermore, the study found that when people were confronted with low-controlling messages, the buffering effect of compassionate goals was not as effective compared to high-controlling messages. This might be because low-controlling messages elicit lower levels of psychological reactance, as they were perceived as less threatening, thereby, diminishing the moderating role of compassionate goals.

Despite, previously confirming the effectiveness of compassionate goals as a moderator, the third analysis did not reveal a significant moderating effect of compassionate goals when comparing high-controlling and low-controlling messages. This lack of significance may be due to the smaller effect size observed for compassionate goals in this comparison. Specifically, the difference between the two conditions might not be substantial enough to highlight a significant moderating effect of compassionate goals. This suggests that while compassionate goals can indeed mitigate the impact of message phrasing on psychological reactance, their effectiveness is context-dependent.

In conclusion, the buffering effect of compassionate goals is strongest when individuals are confronted with high-controlling messages that severely restricted their autonomy. These findings suggest that people who prioritize the well-being of others tend to adopt a more cooperative mindset, experiencing less psychological reactance as they may perceive these messages as serving a collective goal, such as promoting pro-environmental behaviors.

The exploratory analysis showed that high-controlling messages elicited significantly different cognitive responses compared to the control group. Participants in the high-

controlling condition were more likely to voice negative opinions about the message than those in the control group. While some participants in the high-controlling condition agreed with the message and indicated a willingness to comply with the measure, the majority expressed their distaste for the message. Many communicated that they did not appreciate someone else making decisions for them, feeling that their autonomy was restricted. A few participants even voiced their disagreement quite strongly, showing hostility toward the source of the message. Since participants in the control group were presented with a neutral text stating facts about meat, fruit, and vegetable consumption in Austria, a direct comparison between the conditions would be difficult. Understandably, those in the control group showed significantly different cognitive responses to the text, expressing more positive or neutral opinions. Nonetheless, given that the difference between the high-controlling and low-controlling conditions was only marginally insignificant, a trend can be assumed, such that high-controlling messages are more likely to elicit negative cognitive responses than both the control group and low-controlling messages. However, these results should be interpreted with caution.

These findings are consistent with previous literature, which suggests that psychological reactance consists of cognitive and affective responses. Specifically, threats to a person's freedom can trigger both anger and negative cognitions; the stronger a freedom-threat, the stronger the negative cognitions (Chang, 2021; Dillard & Shen, 2005). Supporting this, the present study showed that when comparing the three conditions, participants in the high-controlling condition exhibited more negative cognitive responses compared to neutral or positive ones.

The second exploratory analysis showed that although participants in the three conditions differed significantly in their willingness to reduce their meat consumption, post-hoc tests did not reveal any significant differences between groups. This suggests that

willingness to reduce meat consumption may not be strongly influenced by the language used in these messages. Willingness to reduce meat consumption is considered a form of behavioral intention, an outcome of psychological reactance. According to previous research, higher levels of psychological reactance typically result in lower levels of behavioral intention; conversely, lower levels of psychological reactance lead to higher levels of behavioral intention, meaning that if a message triggers higher levels of psychological reactance, recipients are less likely to comply with the message. (Han & Kim, 2019; Kavvouris et al., 2020). However, another study found no significant differences in behavioral intention between dogmatic and suggestive messages (Clayton, 2022), which aligns with the results of this study. This could be attributed to the fact that, although the differences between the three conditions were sufficient to induce different levels of psychological reactance, these differences may not have been large enough to significantly impact behavioral intention.

Limitations and Future Research

While this study provided valuable insight into the relationship between message phrasing and psychological reactance, as well as the moderating role of compassionate goals, several limitations need to be considered.

Firstly, psychological reactance is defined as a combination of anger and negative cognitions (Dillard & Shen, 2005). Although both anger and cognitive response were measured in this study, the main analysis focused solely on the affective component of anger. Cognitive responses were assessed through thought-listing in the exploratory part of the study. Considering the limits of a master's thesis, it was not feasible to employ more than one coder to categorize the cognitive responses from the open text field. Consequently, these results reflect the author's subjective judgment and should be interpreted with caution. To minimize potential bias, the analysis was conducted independently. Still, to achieve a broader

understanding of psychological reactance, including cognitive responses would have been beneficial.

Additionally, only one item was used to measure behavioral intentions: “To what extent would you be willing, to reduce your meat consumption?” with response options of “not at all”, “hardly”, “a little”, “quite a bit”, and “completely”. This item may have been too vague, therefore, future research should draw upon multiple items to assess behavioral intention more accurately.

Another limitation is the reliance on a convenient sample. The majority of the sample is made up of young academics from German-speaking regions, which may affect the generalizability of the results to the broader population.

Furthermore, this study was conducted within a single context, namely the reduction of meat consumption. This focus limits the applicability of the findings to other contexts. The pro-environmental context was chosen due to its relevance in contemporary discussions. While it would be possible to argue for the reduction of meat consumption on animal welfare grounds, this research did not pursue that angle. People may be more inclined to accept restrictions framed as benefiting animals, which contrasts with the expectation that the context would elicit different levels of psychological reactance. Therefore, future research should investigate the role of message design, compassionate goals, and psychological reactance across various contexts.

Moreover, the messages used were hypothetical scenarios, which may elicit different psychological and emotional responses compared to actual messages used in public communication. Additionally, it remains uncertain whether the contents of the messages were perceived as realistic, particularly in the high-controlling condition. Future research should include actual messages to provide more accurate insights.

Finally, participants self-reported their levels of psychological reactance and compassionate goals, which may have led to bias due to social desirability.

Implications

The results of this study have several theoretical and practical implications. Firstly, this research provides further insight into how different types of message designs can influence psychological reactance in public communication. Specifically, it confirmed that low-controlling language is less likely to elicit psychological reactance compared to high-controlling language when promoting pro-environmental behaviors. These findings contributed to existing literature by demonstrating the relationship between message phrasing and psychological reactance, suggesting that less restrictive, autonomy-supportive language may be more effective in promoting pro-environmental behaviors. Consequently, stakeholders involved in public communication should be careful when designing messages. To mitigate psychological reactance, it is advisable to utilize autonomy-supportive strategies and avoid high-controlling language. This approach could help construct messages that are more likely to be well-received by the public.

Additionally, this study explored factors influencing pro-environmental behaviors, such as compassionate goals. Given that measures or restrictions may be necessary to counteract climate change, understanding how different individuals react to these measures is crucial. The findings indicated that people with higher compassionate goals are less likely to react negatively to restrictive measures compared to those with lower compassionate goals. This suggests that psychological reactance may depend on the recipient's characteristics. By designing messages that activate compassionate goals, psychological reactance to restrictions can be reduced. For example, when framing messages about reducing meat consumption, emphasizing how their actions affect others' well-being and appealing to people's broader goals and values may result in less psychological reactance.

Conclusion

In summary, this study confirmed the importance of message phrasing in the context of psychological reactance. Specifically, high-controlling language elicited higher levels of psychological reactance compared to both low-controlling language and the control group. Furthermore, the moderating role of compassionate goals was partially confirmed, as individuals with higher levels of compassionate goals were less affected by high-controlling messages than those with lower levels of compassionate goals. These findings suggest that compassionate goals and the associated concern for others' well-being mitigate the perceived restriction of autonomy and, therefore, psychological reactance that arises from such messages.

Consequently, this research highlights the relevance of effective message designs in public communication. Stakeholders should be mindful when utilizing messages aimed at promoting specific behaviors, whether in health or pro-environmental contexts. By framing messages to ensure autonomy and highlight the significance of collective well-being, psychological reactance can be mitigated, leading to a more positive overall reaction compared to messages that restrict a person's freedom.

Notes

In order to write this master's thesis the following Artificial Intelligence programs were used: ChatGPT, DeepL Translate, and Grammarly. ChatGPT was primarily used for proofreading and rephrasing individual sentence segments. DeepL Translate was used for translating between German and English, and Grammarly was used for additional proofreading.

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Appendix

Introduction of the Survey

Liebe Teilnehmerinnen und Teilnehmer,

im Rahmen meiner Masterarbeit an der Fakultät für Psychologie der Universität Wien möchte ich untersuchen, wie verschiedene Ansätze zur Reduzierung des Fleischkonsums von Menschen aufgenommen werden und ob persönliche Ziele dabei eine Rolle spielen.

Um an dieser Studie teilnehmen zu können, müssen Sie **mindestens 18 Jahre** alt sein und **keine** ausschließlich **vegetarische** oder **vegane Ernährung** haben.

Die Bearbeitung des Fragebogens wird ca. 5 Minuten in Anspruch nehmen.

Bei Fragen stehe ich Ihnen gerne unter der folgenden E-Mail-Adresse zur Verfügung:
a01642875@unet.univie.ac.at

Teilnahme und Datenschutz

Alle von Ihnen gemachten Angaben werden selbstverständlich **anonym** und **vertraulich** behandelt. Die Teilnahme an der Studie ist **freiwillig**, und kann jederzeit, ohne Angabe von Gründen, abgebrochen werden. Die Teilnahme ist mit keinen Risiken oder negativen Konsequenzen verbunden. Die anonymen Daten werden elektronisch gespeichert und ausschließlich für Forschungszwecke verwendet.

PS: Nutzer der Forschungsplattform SurveyCircle.com erhalten für ihre Teilnahme SurveyCircle-Punkte.

Ich bedanke mich bereits im Voraus herzlich für Ihre Teilnahme an meiner Studie!

Einverständniserklärung

Hiermit bestätige ich, dass ich die oben beschriebenen Informationen gelesen habe und mit den Teilnahmebedingungen einverstanden bin. Zusätzlich bestätige ich, dass ich das 18. Lebensjahr vollendet habe.

☐ Ja

☐ Nein

Criterion for Exclusion

Ernähren Sie sich ausschließlich vegetarisch oder vegan?

☐ Ja

☐ Nein

Compassionate Goals

Beantworten Sie bitte die folgenden Fragen auf einer Skala von 1 bis 5:

Wie sehr versuchen Sie/wünschen Sie, andere zu unterstützen?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Wie sehr versuchen Sie/wünschen Sie, Mitgefühl für die Fehler und die Schwächen anderer zu haben?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Wie sehr versuchen Sie/wünschen Sie, etwas zu vermeiden, das anderen schaden könnte?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Wie sehr versuchen Sie/wünschen Sie, einen positiven Unterschied im Leben anderer zu machen?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Wie sehr versuchen Sie/wünschen Sie, in Ihren Kommentaren anderen gegenüber konstruktiv zu sein?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Wie sehr versuchen Sie/wünschen Sie, zu vermeiden egoistisch oder selbstbezogen zu sein?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Wie sehr versuchen Sie/wünschen Sie, Dinge zu vermeiden, die Ihnen oder anderen nicht helfen?

- ☐ Überhaupt nicht
- ☐ Wenig
- ☐ Gelegentlich
- ☐ Häufig
- ☐ Immer

Messages

Auf der nächsten Seite erscheint ein kurzer Text.

Bitte lesen Sie den folgenden Text **sorgfältig** durch und versuchen Sie, sich in die **Situation** hineinzuversetzen.

Versetzen Sie sich in folgende Situation:

Die Regierung hat eine dringende Maßnahme ergriffen, um unseren Fleischkonsum in öffentlichen Einrichtungen wie Büros oder Schulen zu kontrollieren. Ab sofort ist es untersagt, Fleisch ohne gültige Fleischmarken zu erwerben. Jede Einrichtung erhält monatlich eine festgelegte Anzahl an Fleischmarken. Man darf nicht über diese Grenzen hinaus Fleisch kaufen. Diese Maßnahme ist unabdingbar, um den Fleischkonsum zu regulieren und die negativen Auswirkungen auf das Klima zu reduzieren. Es ist unsere Pflicht, diese Regelung strikt einzuhalten und einen Beitrag zum Schutz unserer Umwelt zu leisten.

Versetzen Sie sich in folgende Situation:

Laut aktuellen Studien legen Ernährungsempfehlungen nahe, dass pro Tag nicht mehr als 42 Gramm Fleisch gegessen werden sollen. In Deutschland und Österreich liegt der durchschnittliche tägliche Fleischkonsum jedoch weit über diesen Empfehlungen – bei 141 Gramm bzw. 161 Gramm. Vielleicht möchten wir alle gemeinsam darüber nachdenken unseren Fleischkonsum zu überdenken und gegebenenfalls zu reduzieren.

Versetzen Sie sich in folgende Situation:

Sie entdecken online, dass in Österreich jede Person durchschnittlich 59 Kilogramm Fleisch pro Jahr konsumiert, während zusätzlich jährlich im Durchschnitt 124 Kilogramm Gemüse und 75 Kilogramm Obst pro Person verzehrt werden

Psychological Reactance

Denken Sie bei der Beantwortung dieser Fragen bitte an den zuvor **gelesenen Text**.

In welchem Ausmaß fühlen Sie sich ...

Wütend?

☐ Überhaupt nicht

☐ Leicht

☐ Teils-teils

☐ Stark

☐ Sehr stark

Genervt?

- ☐ Überhaupt nicht
- ☐ Leicht
- ☐ Teils-teils
- ☐ Stark
- ☐ Sehr stark

Irritiert?

- ☐ Überhaupt nicht
- ☐ Leicht
- ☐ Teils-teils
- ☐ Stark
- ☐ Sehr stark

Verärgert?

- ☐ Überhaupt nicht
- ☐ Leicht
- ☐ Teils-teils
- ☐ Stark
- ☐ Sehr stark

Cognitive Response

Beschreiben Sie bitte kurz, was Ihnen beim Lesen des Textes durch den Kopf gegangen ist.

Behavioral Intention

Wie sehr wären Sie bereit, Ihren Fleischkonsum zu reduzieren?

- ☐ Überhaupt nicht
- ☐ Kaum
- ☐ Ein wenig
- ☐ Ziemlich
- ☐ Vollständig

Demographics

Welchem Geschlecht fühlen Sie sich zugehörig?

- ☐ Männlich
- ☒ Weiblich
- ☐ Divers
- ☐ Keine Angabe

Wie alt sind Sie?

Jahre

Was ist Ihr höchster Bildungsabschluss?

Closing Page

Vielen Dank, dass Sie an meiner Studie teilgenommen haben!

Wenn Sie Fragen zur Studie haben oder weitere Informationen haben wollen, stehe ich Ihnen unter folgender E-Mail-Adresse zur Verfügung:
a01642875@unet.univie.ac.at

Die Studie ist nun zu Ende und Sie können die Seite nun schließen.

Für Nutzer von SurveyCircle (www.surveycircle.com): Der Survey Code lautet: JN53-2EB1-D6N1-K5SW

Survey Code mit einem Klick einlösen: <https://www.surveycircle.com/JN53-2EB1-D6N1-K5SW/>