

**RESEARCH ARTICLE**

# Being green in a materialistic world: Consequences for subjective well-being

Pia Furchheim<sup>1</sup>  | Christian Martin<sup>2</sup> | Felicitas Morhart<sup>3</sup> 

<sup>1</sup>ZHAW School of Management and Law, Institute of Marketing Management, Winterthur, Switzerland

<sup>2</sup>School of Business, Maynooth University, Maynooth, Ireland

<sup>3</sup>University of Lausanne (HEC), Lausanne, Switzerland

**Correspondence**

Pia Furchheim, ZHAW School of Management and Law, Institute of Marketing Management, Theaterstrasse 17, CH-8401 Winterthur, Switzerland.  
Email: pia.furchheim@zhaw.ch

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**Abstract**

This paper explores the potential negative side-effects of the sustainability movement in societies with large segments of materialistic consumers. Across three studies, there is evidence that a conflict between materialistic and green value profiles can arise in consumers. When it arises, it seems to be related to diminished well-being. Study 1 shows that consumers with a higher value conflict (VC) experienced higher levels of stress. Consumers with higher degrees of stress then reported lower satisfaction with life. Study 2 reveals the underlying process by which this value conflict affects well-being. The results suggest that the value conflict is related to a reduced clarity of consumers' self-concept (SCC), which in turn is related to increased levels of stress and a lower satisfaction with life. Results of Study 3 show that preference for consistency (PFC) serves as a boundary condition to this effect. The negative effect of VC on SCC is most pronounced among consumers high in PFC, while low PFC consumers seem to suffer less from the negative consequences of a conflict between green and materialistic values. Conceptual and public-policy implications of these results are discussed.

**KEYWORDS**

green values, materialism, preference for consistency, satisfaction with life, self-concept clarity, stress, value conflict

**1 | INTRODUCTION**

In 1987, the UN-Report of the Brundtland Commission characterized the challenges of a sustainable lifestyle as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). Ever since, ecological, sustainable, and ethical issues have become a mainstream preoccupation for companies and governments alike (Shaw, Grehan, Shiu, Hassan, & Thomson, 2005; Shaw & Newholm, 2002; Sheth, Sethia, & Srinivas, 2011). Relatedly, a popular strategy in social marketing is to persuade consumers to care about the environment and to reduce their levels of consumption (e.g., Kronrod, Grinstein, & Wathieu, 2012; Peattie & Peattie, 2009). At the same time, environmentally motivated anti-consumption lifestyles have emerged as a way of contributing to achieving sustainable goals (Black & Cherrier, 2010; García-de-Frutos, Ortega-Egea, & Martínez-del-Río, 2018;

Kropfeld, Nepomuceno, & Dantas, 2018; Nepomuceno & Laroche, 2017). For example, consumers nowadays perform a variety of environmentally oriented practices, such as saving energy, reusing products, buying environmentally friendly alternatives, or avoiding environmentally harmful products (Black & Cherrier, 2010; García-de-Frutos et al., 2018). In general, consumers have become more aware of the need to protect the environment and to incorporate this aspect into their daily consumption habits (National Geographic & GlobeScan, 2014).

On the other hand, there are still sizable segments of materialistic consumers in many Western societies (Burroughs & Rindfleisch, 2012; Twenge & Kasser, 2013). Despite having ample possessions, many Western consumers “spend significant time, effort, and money on buying new things” (Dholakia, Jung, & Chowdhry, 2018, p. 260). Additionally, more and more consumers in historically more communal societies, such as China, seem to adopt a materialistic mindset as well (Podoshen, Li, & Zhang, 2011). While there are exceptions to this

(e.g., Nepomuceno & Laroche, 2017; Tatzel, 2002), materialism is a value profile that is often associated with increased levels of consumption (e.g., Richins, 2011) and negative effects for the environment (Hurst, Dittmar, Bond, & Kasser, 2013). Importantly, values develop over the course of a lifetime, and cannot be changed easily (Rokeach, 1979). Therefore, increasing attempts to convince consumers, and among them materialistic consumers, to adopt a green value orientation and ideally an environmentally motivated anti-consumption lifestyle might create an internal value conflict in materialistic consumers. This might lead to unintended negative psychological consequences for these consumers.

While the positive consequences of green value orientations and related anti-consumption lifestyles for the environment have been well established in the literature (e.g., García-de-Frutos et al., 2018; Haws, Winterich, & Naylor, 2014), potential consequences for individual consumers' well-being remain understudied (see Iyer & Muncy, 2016; Lee & Ahn, 2016; Welsch & Kühling, 2018 for exceptions).

This article addresses this gap by studying the human value basis for environmentally oriented anti-consumption (i.e., green value orientations) in conjunction with materialistic value orientations in consumers. In particular, the aim of the present paper is to discuss negative consequences of a potential value conflict between green and materialistic value orientations for consumer well-being. The article builds on the seminal article by Burroughs and Rindfleisch (2002) who explored the interplay of materialism and collective-oriented values from a value conflict perspective. However, their work leaves several questions unanswered. For example, they showed that only some of the collective-oriented values (i.e., family values and religious values) induced stress as a result of a conflict with materialism while others (i.e., community values) did not. Hence, it seems warranted to explore other forms of collective-oriented values, such as green values, and their interplay with materialism.

Given the ongoing discussion concerning the compatibility of materialism and environmentally oriented anti-consumption behavior, it seems particularly important to study whether the insights from value conflict theory apply to this context. Moreover, although a general value conflict-stress link has been predicted and documented in extant literature, research that investigates the underlying psychological processes and boundary conditions of this relationship is missing.

Across three studies, the paper demonstrates that consumers who simultaneously prioritize conflicting values in the form of green and materialistic values report higher levels of stress and lower well-being. In addition, the paper adds to the value conflict theory by showing the underlying process by which a value conflict (i.e., equal adherence to conflicting values) reduces well-being in consumers. The authors suggest that a value conflict leads to stress mainly through its negative influence on a person's self-concept clarity (SCC), which is of importance for consumer well-being (Hirsh & Kang, 2016). SCC describes the extent to which self-beliefs are unambiguously and confidentially defined (Campbell et al., 1996).

This adverse effect might not be the same for every consumer facing a value conflict. Rather, it is suggested that this effect particularly shows for consumers that strive for consistency in their lives. The paper therefore introduces and tests one important boundary condition (i.e., preference for consistency [PFC]) to this relationship. PFC is thereby defined as the tendency to inform and align present behavior and attitudes with one's past behavior and attitudes (Cialdini, Trost, & Newsom, 1995). Indeed, the data in this article support this proposition and indicate that the negative effect of a value conflict on self-concept is more pronounced (vs. less pronounced) for consumers who are high (vs. low) in preference for consistency.

## 2 | CONCEPTUAL MODEL

### 2.1 | Green values and materialism

Values serve as standards and direct human action and decisions (Schwartz, 2012). Over the last decades, a considerable stream of research has emerged around the concept of human values and its relationship with sustainable consumer behavior. Two types of value orientations that have received particular attention in this regard are green and materialistic value orientations. Green values are defined as "the tendency to express the importance of environmental protection through one's purchases and consumption behaviors" (Haws et al., 2014, p. 338). They seem to be inherently linked to sustainable consumption activities (Shaw & Black, 2010). That is, consumers who endorse green values are likely to try to reduce, avoid, or reject consumption for environmental reasons. For example, environmental consciousness in consumers seems to be associated with the desire to use products for as long as possible before replacing them and with a more simplistic lifestyle in general (Kropfeld et al., 2018). In addition, environmentally conscious consumers have been found to reduce or avoid the usage of environmentally harmful products by choosing environmentally friendly alternatives (García-de-Frutos et al., 2018; Haws et al., 2014; Shaw & Black, 2010). Instead of avoiding, reducing, or rejecting consumption per se (i.e., following a narrow perspective of anti-consumption; García-de-Frutos et al., 2018), those consumers choose consumption (i.e., "buycotting" sustainable alternatives) as viable path to enacting their green values and identities (García-de-Frutos et al., 2018; Onel et al., 2018; Shaw & Clarke, 1999). The prevalence of green consumers thereby seems to have increased in society over the last years. In 2001, Laroche, Bergeron, and Barbaro-Forleo (2001) identified a considerable large consumer segment (i.e., 13.1%) that was willing to spend more for environmentally friendly products. A recent global consumer survey showed that nowadays, a majority of consumers (65%) is willing to pay higher prices for sustainable products (Nielsen, 2015).

However, despite the growing sustainable consciousness among consumers it should be noted that sustainability would ideally require people's deconsumption (Black & Cherrier, 2010; García-de-Frutos et al., 2018; Kropfeld et al., 2018; Sheth et al., 2011). In

contrast to this, individual consumption levels are on a constant rise (GfK, 2018). At the end of 2017, the Consumption Climate Index in Europe has reached a new high in 10 years (GfK, 2018).

One reason why the transition to a more minimalistic way of life might be particularly difficult might lie in the ubiquity of another contemporary value orientation, namely materialism. Materialism is symptomatic of a “culture of consumption” (Kasser, Ryan, Couchman, & Sheldon, 2004). It is often described as a consumer value orientation that focuses on “attaining financial success, having nice possessions, having the right image (produced, in large part, through consumer goods), and having a high status” (Kasser et al., 2004, p. 13). Materialists consider money and the things it can buy as the main asset in their pursuit of happiness and satisfaction (Ahuvia, 2015; Richins, 2017). Importantly, it is not the mere possession or use of things materialists strive for, but rather the anticipated consequences and benefits of it (Richins, 2011, 2013). This results in a so-called hedonic treadmill of constantly wanting more and better things (Chancellor & Lyubomirsky, 2011). Accordingly, materialistic consumers pursue major life goals through consumption which contributes to overconsumption and in turn negatively affects the environment (Crompton & Kasser, 2009).

The implications of materialism on sustainability might be more complex than this however. Some research suggests that materialism and sustainable practices do not necessarily always have to be at odds. For instance, under certain circumstances, materialists may forgo consumption today to buy “dream items” in the future (Nepomuceno & Laroche, 2017; Tatzel, 2002). They may also be prone to finding new and different uses for products and alternative methods of product disposal (Evers, Gruner, Sneddon, & Lee, 2018) and appear to be more likely to keep and restore things (Cherrier, 2010). However, it should be noted that those observed seemingly sustainable practices are likely driven by materialistic tendencies. Moreover, the question as to how these tendencies affect the overall levels of consumption of materialistic consumer remains unanswered. That is, materialists might be likely to keep things longer or be creative with end-usage practices, however, that does not necessarily imply that they abstain from future purchases. This is particularly so, because materialism in general seems to be associated with unsustainable tendencies, such as compulsive buying (Dittmar, 2005) and an inherent desire to improve one’s standard of living through continuous consumption (Richins, 2011, 2013). Both tendencies are inherently incompatible with green values. Taken together, the literature suggests in our reading that materialism on average can be considered as harmful for the environment, even if there are some exceptions to this rule. This interpretation of the literature is in line with a recent metastudy which found a negative relationship between materialism and environmentally relevant behavior (Hurst et al., 2013). That is, materialistic consumers seem to be less likely to report sustainable practices.

Consumers seem to actively experience a conflict between green and materialistic goals as well. For example, Tang and Hinsch (2018) study the interaction between consumers’ awareness of environmental issues and their materialistic value orientations. In their

research, consumers who were high in their awareness of environmental issues and at the same time materialistic were more likely to report indirect environmentally relevant behavior (e.g., support for increased taxes for environmental causes) than other consumers. These authors interpret this as consumers being aware of the environmental impact of their materialistic consumption and trying to compensate for it.

On a theoretical level the suggested opposing relationship between materialism and green values can also be explained through the theory of human values (Schwartz, 1992, 1994). Schwartz (1992, 1994) identified 10 basic human values. Values can either be unrelated, complementary, or in conflict with one another (Schwartz, 1992, 1994).

Literature that tries to define materialistic behavior is often suggestive that materialism can be classified as a self-enhancement motive along with values, such as power and achievement (Burroughs & Rindfleisch, 2002; Kilbourne, Grünhagen, & Foley, 2005). For example, one of the materialism dimensions (i.e., success) in Richins and Dawson’s (1992) framework considers possessions as a fundamental part of the demonstration of success in life. In contrast, the majority of research which investigated the relationship of human values and sustainable behavior suggests that the self-transcendence motive is important for green consumers (e.g., Follows & Jobber, 2000; Thøgersen & Ölander, 2002). According to Schwartz’s (1992) model, on a theoretical level, green and materialistic value orientations can therefore be conceptualized as conflicting with each other.

## 2.2 | Value conflict and its impact on well-being

Research proposes that people are more likely to experience well-being when they are able to live according to their values (Sagiv & Schwartz, 2000). In contrast, the pursuit of conflicting values leads to psychological tension (Burroughs & Rindfleisch, 2002; Schwartz, 1992). Consequently, in situations where a person cannot express and fulfill their values well-being diminishes (Bouckennooghe, Buelens, Fontaine, & Vanderheyden, 2005; Burroughs & Rindfleisch, 2002; Emmons & King, 1988; Sagiv & Schwartz, 2000). This finding is also consistent with Festinger’s (1957) work on cognitive dissonance in which he states that the existence of internal dissonance within a person’s mind is psychologically uncomfortable. For instance, Elliot and Devine (1994) asked their participants to write an essay on the use of animals in scientific experimentation. This topic might be important for some groups but not important for others. The affective outcome of this essay depended on whether it contradicted a consumer’s worldview (e.g., vegan activists) or not. Consumers who believed that animal experimentation is ethically questionable, but who had to justify it in their essays supposedly experienced dissonance between their behavior and beliefs which induced negative affect. There was supposedly less or no such dissonance for consumers who felt indifferent toward (or supportive of) animal experimentation when they wrote the same essay on animal experimentation (Elliot & Devine, 1994). In general, the violation of well-internalized and self-defining standards seems to evoke negative

affect (e.g., discomfort and guilt; Devine, Monteith, Zuwerink, & Elliot, 1991).

In addition to that, Emmons and King (1988) reported that consumers who valued conflicting goals were less likely to pursue any of these conflicting goals. Moreover, these consumers spend considerably more cognitive resources contemplating on their course of action with regard to their conflicting goals compared with other consumers. Not surprisingly, given that conflicted consumers seem to be in a state of constant contemplation without much progress toward their goals, goal conflicted consumers reported heightened levels of stress compared with other consumers (Emmons & King, 1988).

The same principle applies to values. Values serve as a moral compass in decision-making processes and are highly relevant for defining who a person is (Hitlin, 2003). Any conflict between personally held values is likely to produce a state of discomfort (Sagiv & Schwartz, 2000). Even though this theoretical reasoning is appealing, Burroughs and Rindfleisch (2002) did not find universal support in the context of materialism and conflicting communal values. Only some value conflicts (i.e., materialism vs. family values and religious values) were associated with increased psychological tension and subsequently lowered satisfaction with life, while others were not (i.e., materialism vs. community values). It is therefore important to empirically scrutinize the relationship between materialism and green values with consumer well-being.

In sum, even though there are exceptions (e.g., Nepomuceno & Laroche, 2017; Tatzel, 2002), in our reading, the majority of existing studies suggest that there is a conflict between materialism and environmental consciousness in consumers (Hurst et al., 2013). In addition, even though not all conflicting values seem to be associated with diminished well-being (e.g., Burroughs & Rindfleisch, 2002), the general consensus seems to be that such a relationship can be expected (e.g., Emmons & King, 1988). We therefore propose that:

**H1:** *Consumers who conjointly endorse green and materialistic values will experience stress which is then related to diminished satisfaction with life.*

### 2.3 | Consumers' self-concept clarity as mediator

Self-concept clarity (SCC) is the extent to which self-beliefs are unambiguously and confidentially defined. A person with a high SCC holds internally consistent and temporally stable beliefs about self-attributes. In contrast, low SCC is associated with inconsistent thoughts and uncertainty about one's self (Campbell et al., 1996).

SCC seems to diminish when important parts of a consumer's self-concept are not well integrated. For example, Osborne and Taylor (2010) show that consumers who operated in a culturally diverse environment and who were swayed between different cultural backgrounds reported lower SCC compared with consumers who did not experience this cultural ambiguity. This is because

cultural identities that are not well integrated lead to a confusion about who one actually is. A similar phenomenon can occur on social networking sites. Valkenburg and Peter (2011) argue that consumers who spend considerable time online, might develop different personalities to facilitate their various online interactions on social networking sites. Since the different personalities are switched on and off depending on the online context rather than being integrated, consumers who spend considerable time on social networking sites seem to experience diminished SCC (Sharif & Khanekharab, 2017).

Generally, the aspects of a consumer's self-concept (e.g., different social and personal identities) provide guidance on ideal and desirable behavior. If these different aspects are not well aligned, they might not be able to provide clear guidance, which in turn leads to a blurry idea of one's own self (Hirsh & Kang, 2016). The situation of value conflicted consumers is similar. High-priority values are essential for the self-concept (Hitlin, 2003; Schwartz, 2017). Conflicting value profiles, such as materialism and green values, might therefore dilute a person's perception of himself or herself when both are endorsed at the same time. Such consumers cannot necessarily always pursue their environmental goals because of their materialistic strivings and vice versa. Rather, it is likely that they need to compromise or switch back and forth between their materialistic and green goals which leads to ambiguous signals about one's self-concept. It is therefore suggested that a value conflict negatively influences a person's self-concept clarity.

**H2:** *Higher levels of value conflict are associated with lower levels of self-concept clarity.*

There is evidence for the relationship between self-concept clarity and subjective well-being as well. For example, SCC has been linked to increased satisfaction with life (Ritchie, Sedikides, Wildschut, Arndt, & Gidron, 2011) and overall psychological well-being (Hanley & Garland, 2017). Likewise, extant research reported associations between a low self-concept clarity and stress, anxiety, and negative affect in general (Campbell et al., 1996; Constantino, Wilson, Horowitz, & Pinel, 2006). It has been proposed that this link is caused by differences in environmental perceptions between high and low SCC consumers. Low SCC consumers might perceive their surroundings as more chaotic and less predictable than high SCC consumers (Smith, Wethington, & Zhan, 1996). Such lack of predictability is associated with a reduced control over one's life (Hogg, 2000). A neuropsychological account for this observed effect is provided by Hirsh and Kang (2016). These authors argue that a lack of clear behavioral guidance as provided by consumers' self-concepts (i.e., when SCC is low) stimulates heightened activity in the behavioral inhibition system in the brain. This heightened activity is typically associated with increased negative emotions. To sum up, extant literature found a positive relationship between SCC and satisfaction with life (Ritchie et al., 2011). Accordingly, lower levels of SCC are likely to produce psychological tension manifested through stress, anxiety, or negative affect (Campbell et al., 1996; Constantino et al., 2006). In the context of the present research, it is hence proposed that SCC serves as additional mediator in the VC-stress-SWL

relationship. It is proposed that higher levels of value conflict are associated with lower levels of SCC (H2), and that a lower level of SCC increases stress, which in turn affects satisfaction with life:

**H3:** *The effect of a value conflict on satisfaction with life is serially mediated by self-concept-clarity and stress.*

## 2.4 | Preference for consistency as moderator

It is possible that being inconsistent is not equally detrimental for all consumers. While some consumers may suffer from contradicting themselves and might develop an unstable and blurry self-view, other consumers may not. The authors of this paper propose that differences in PfC in consumers can help predict and explain potential differences in the consequences of a conflict between green and materialistic value orientations between consumers. PfC is defined as the tendency to inform and align present behavior and attitudes with one's past behavior and attitudes (Cialdini et al., 1995).

Low PfC consumers seem to showcase spontaneity, and unpredictability in their interactions with other consumers or in their reaction to contextual variations. These consumers seem to pay little attention to their past behaviors and do not use them as a strong guiding mechanism as to how to behave in or react to a given context. Rather, these consumers embrace flexibility and behave as they see fit (Guadagno & Cialdini, 2010). High PfC consumers, on the other hand, observe their past behavior and strive to behave similarly again in similar interactions or situations in the future (Guadagno & Cialdini, 2010). Accordingly, consumers high in PfC who hold a high VC might experience difficulties in replicating their past behavior since their past behavior was driven by two conflicting value orientation. These difficulties might lead to a confusion about their own self-concept (i.e., low SCC) in high PfC consumers. Low PfC consumers, on the other hand, do not experience such difficulties to the same extent as they do not rely on their past behavior to inform present behavior to the same extent as high PfC consumers do. Even if these consumers are characterized by a high VC, they are keeping less tabs on their past behavior. These consumers might therefore not be as aware of their own inconsistency and might not experience confusion about their self (i.e., high SCC).

**H4:** *The relationship between value conflict and self-concept clarity is stronger (weaker) in high (low) preference for consistency consumers.*

## 3 | STUDY OVERVIEW AND EMPIRICAL STRATEGY

Taken together, it is predicted that high (vs. low) value conflict is associated with lower (vs. higher) SCC and that SCC in turn impacts stress and eventually satisfaction with life. The VC–SCC link is thereby moderated by consumers' PfC.

The theoretical model is tested across three studies. Study 1 establishes that the VC between green consumption values and materialistic values is associated with stress and satisfaction with life. Study 2 replicates Study 1 and tests the mediating role of SCC. Study 3 tests whether preference for consistency is a boundary condition to this effect. Figure 1 provides a graphical overview of the different studies.

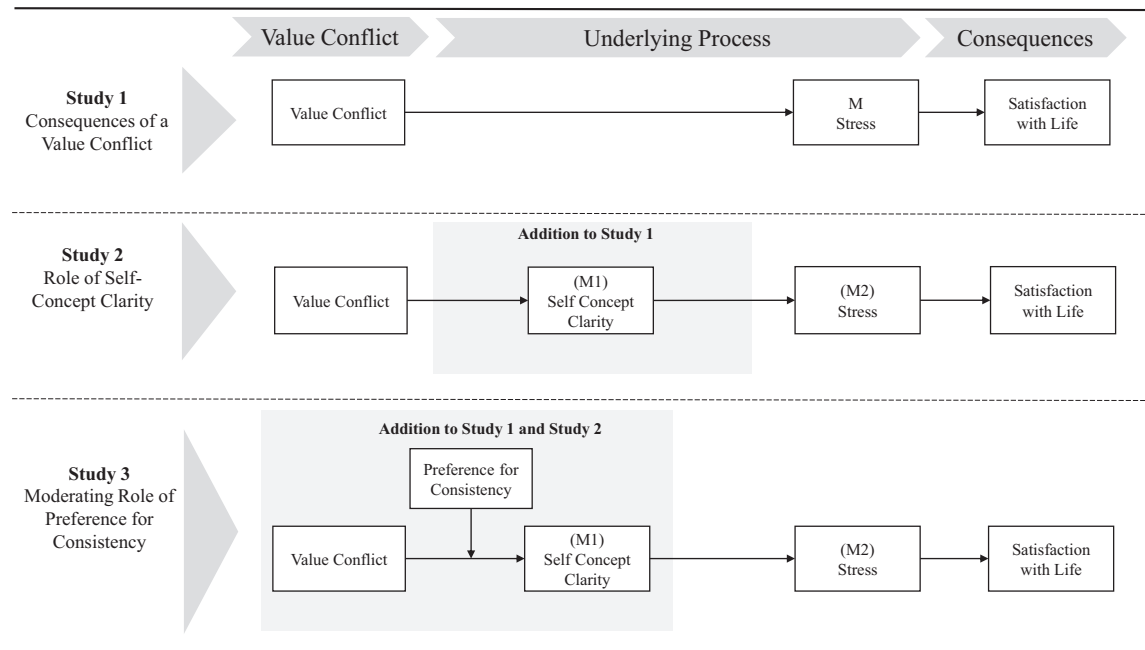
All models control for age and gender in line with prior research (e.g., Burroughs & Rindfleisch, 2002; Lodi-Smith & Roberts, 2010). This is important to increase our results' validity. For example, age has been shown to be related to sustainable behavior (Wiernik, Ones, & Dilchert, 2013), materialism (Jaspers & Pieters, 2016), and self-concept clarity (Lodi-Smith & Roberts, 2010). Similarly, gender has been shown to be related to environmentally friendly behavior (Brough, Wilkie, Ma, Isaac, & Gal, 2016) and self-concept clarity (Crocetti et al., 2016) as well. Not including these controls could therefore result in artificially inflated or lowered coefficients in our models.

In addition, Study 1 and Study 2 test whether VC is a better predictor of stress than materialism alone. The latter is important as the literature on materialism has repeatedly found negative effects on consumer well-being (see e.g., Dittmar, Bond, Hurst, & Kasser, 2014 for a metastudy).<sup>1</sup> Research suggests that materialistic individuals are caught in a so-called "hedonic treadmill" of constantly wanting what they do not have (Chancellor & Lyubormirsky, 2011; Richins, 2013) which is detrimental to well-being (Pandelaere, 2016). Closely related to this, Watson (2003) found positive relationships between materialism and the tendency to spend and the tendency toward borrowing money. On a similar account, research found that materialism is associated with personal debt and smaller account balances (Nepomuceno & Laroche, 2015; Ponchio & Aranha, 2008). Personal debt in turn is associated with lower levels of well-being (Brown, Taylor, & Wheatley Price, 2005; Richardson, Elliott, & Roberts, 2013). Consequently, it is important to rule out that a relationship between VC and stress in our data is merely representative of a relationship between materialism and stress.

## 4 | STUDY 1—THE CONSEQUENCES OF SIMULTANEOUSLY HELD GREEN AND MATERIALISTIC VALUES

Study 1 aimed to investigate the potential psychological consequences of a clash between materialistic and green values. In particular, it seeks to extend the findings of Burroughs and Rindfleisch (2002) in the context of a potential conflict between green and materialistic values. It also tests whether VC is indeed a better predictor of stress than materialism alone.

<sup>1</sup>We thank an anonymous reviewer for this suggestion.



**FIGURE 1** Overview of studies. Note: Letters M, M1, M2 refer to the place of a variable in the mediation model (see also mediation tables)

### 4.1 | Participants and method

This study was part of a larger laboratory study on student lifestyles. One hundred and twenty-eight students were recruited from the lab participant pool of a large public central European university. The questionnaire included measures on the value conflict of interest (i.e., materialism and green consumption values), as well as a measure of satisfaction with life. The measurement of the mediator variable (i.e., stress) was assessed in a follow-up questionnaire. Participants were invited to complete this second questionnaire online (e.g., at home) 2 weeks after the lab sessions had commenced. One hundred and eighteen participants completed this follow-up questionnaire (58% male; mean age = 21.3 years, i.e., 92% of matched questionnaires).

Materialism (MV) was measured with nine items using Richins' (2004) Material Value Scale and green values (GV) were measured using Haws et al.'s (2014) Green Consumption Values Scale. Example items are "I admire people who own expensive homes, cars, and clothes" and "My purchase habits are affected by my concern for our environment," respectively. In line with Burroughs and Rindfleisch (2002), stress was assessed with the stress subscale of the Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995; example item: "I find it hard to wind down"). The Satisfaction with Life Scale served as a measure of well-being (SWL; example item: "In most ways my life is close to my ideal"; Diener, Emmons, Larsen, & Griffin, 1985). All measures showed good internal consistency ( $\alpha > .83$ , see Appendix). A hypothesis guessing open question at the end of the questionnaire revealed that none of the participants correctly identified the purpose of the study.

The magnitude of participant's value conflict was calculated with Thompson, Zanna, and Griffin's (1995) formula. Although this formula was initially developed to measure attitude ambivalences,

it has been used to calculate value conflict as well (e.g., Peffley, Knigge, & Hurwitz, 2001). Applied to the present context, the formula reads as follows:

$$VC = (GV + MV)/2 - |GV - MV|$$

Importantly, the order of the constructs in the formula is arbitrary and switching the order does not alter the resulting value conflict score. As materialism and green values were measured as multi-item scales with each scale item being measured on a scale from 1 to 7 (where 1 = "strongly disagree" and 7 = "strongly agree"), the scores on both constructs can vary between 1 and 7. The most extreme case of conflict is where both constructs are highly endorsed by a consumer (i.e., both are 7 on the 7-point scale). In this extreme case, the formula produces a value conflict score of 7. The formula indicates that consumers experience less value conflict if they endorse both values less (e.g., value conflict score = 4, if a consumer scores 4 on both of the two value measures) or if a consumer endorses one value more strongly than the other (e.g., value conflict score = 4, if one value is 7 and the other is 5). The lowest possible score is -2 if a consumer scores one value orientation at 7 (i.e., most extreme score) and the other at 1 (i.e., least extreme score). To facilitate interpretation, the resulting value conflict range (i.e., -2 to 7) was rescaled to range from 0 (no conflict) to 1 (high value conflict). That is, we added 2 to the value conflict score of each participant and divided the resulting new score by 9. Importantly, this rescaled value conflict variable is still a metric measurement which can take on any value between 0 and 1. Descriptive information and correlations of all relevant constructs are included in Table A.1 in the Supporting Information.

## 4.2 | Results

The proposed mediation model was tested using PROCESS (Model 4, 10,000 bootstrap; Hayes, 2018). The model included VC as predictor, stress as the mediator, and satisfaction with life as the dependent variable. Gender and age were included as covariates. As can be seen in Table 1, participants with a higher VC experienced higher levels of stress than those with lower levels of value conflict and participants with higher degrees of stress reported lower satisfaction with life. The indirect effect was statistically significant as the 95% bias-corrected bootstrap confidence interval for the indirect effect did not include zero. This supports H1.

In addition, we tested the possibility that materialism alone could explain stress rather than the value conflict between materialism and green values. To test this alternative explanation, the mediation analysis (PROCESS Model 4, 10,000 bootstrap, Hayes, 2018) was repeated with materialism as independent variable (i.e., instead of VC). The results of the mediation analysis support existing literature and show that materialistic tendencies are positively related to stress (see Table A.2 in the Supporting Information for more details). However, value conflict is slightly better in explaining stress ( $R^2_{VC} = 0.171, p < .001$ ) in comparison to materialism ( $R^2_{materialism} = 0.137, p < .001$ ).

## 4.3 | Discussion

Overall, the results of Study 1 lend initial support to our theoretical model. Participants who scored high (vs. low) on VC were more (vs. less) likely to experience elevated levels of stress. These higher levels of stress, in turn, were related to lowered satisfaction with life. The data therefore suggest that the theory developed by Burroughs and Rindfleisch (2002) can also be applied to the green versus materialistic values conflict. This is an important finding. These authors predicted a conflict between self-transcendence values in general and materialism. Their data

however suggested that only some (i.e., family values and religion), but not all self-transcendence values (i.e., community values) conflict with materialism to the extent that consumers experience stress and diminished well-being. The findings by Burroughs and Rindfleisch (2002) could therefore not automatically be transferred to the green versus materialistic values context without a direct empirical investigation. The present research provides this missing evidence.

In line with prior research (Dittmar et al., 2014), materialism alone was associated with higher levels of stress and subsequently lower satisfaction with life. However, our findings indicate that VC predicts more variance in stress than does materialism alone. This lends further support to our theory that the tradeoff between environmentally oriented anti-consumption and materialistic consumerism impacts consumers' well-being.

Despite its promising results, Study 1 is limited in several ways. First, since all participants completed the crucial measures in the same order, one might be concerned about order effects. That is, scores on measures may have been influenced by the fact that participants completed other measures beforehand. We believe that this is not a concern with regard to the mediator (i.e., stress). This measure has been completed by participants in a separate questionnaire several days after the original study. It might have been, however, that participants completing the two focal value measures (i.e., green and materialistic values) directly before the satisfaction with life measure might have increased their awareness of their VC, which might have then impacted their score on the satisfaction with life measure.

Second, this study was narrow in its focus on the basic relationship of a value conflict with stress and satisfaction with life. The data do not, therefore, provide information about potential underlying processes of this effect. In addition, the study was conducted with a student sample. It is therefore not clear whether the theoretical model holds in a more diverse sample of consumers. Study 2 addresses these limitations.

**TABLE 1** Simple mediation model Study 1

Consequent	M (stress)			Y (SWL)		
	B	SE	p	B	SE	p
Intercept	1.80	0.83	.033	6.73	0.92	<.001
VC	2.60	0.61	<.001	-0.23	0.72	.754
Stress				-0.33	0.10	.002
Male	-0.45	0.20	.027	-0.08	0.22	.734
Age	0.02	0.03	.491	-0.02	0.04	.554
Observations	118			118		
$R^2$ /adj. $R^2$	0.171/0.149			0.108/0.077		
F statistics	7.844***			3.431*		
Indirect effect of VC on SWL through stress: -0.85 [-1.76, -0.24] <sup>a</sup>						

Abbreviations: B = unstandardized regression coefficients; SE = standard error; SWL = satisfaction with life; VC = value conflict.

<sup>a</sup>95% confidence interval.

\*\*\* $p < .001$ .

\* $p < .05$ .

## 5 | STUDY 2—THE MEDIATING ROLE OF SELF-CONCEPT CLARITY

Study 2 had several objectives. First, it served as a replication study to test the general model in a more diverse sample of consumers. Second, Study 2 aimed at testing the mediating role of self-concept clarity between VC and its well-being consequences (i.e., stress and satisfaction with life). A graphical illustration of Study 2 is included in Figure 1. In addition, we again tested whether VC predicts more variance in our stress measure than materialism (see Sections 3 and 4.3 for more details).

### 5.1 | Participants and method

Two hundred participants (30% male, average age 35.6 years) were recruited using ProA ([www.prolific.ac](http://www.prolific.ac)) for the purpose of this study and received financial compensation for their participation. ProA offers fair payment to study participants and has been found to provide high-quality data of a more diverse sample (Peer, Brandimarte, Samat, & Acquisti, 2017). All measures were identical to the measures used in Study 1, with the exception of self-concept clarity (Campbell et al., 1996), which had not been included in Study 1. An example item of SCC is: “My beliefs about myself often conflict with one another.” Participants started with the stress measure, followed by the satisfaction with life scale (SWL), self-concept clarity, materialism, green values, gender, and age. In particular, it was decided to measure the focal value measures (i.e., green values and materialism) after the other psychological constructs to rule out the possibility that these measures might “prime” or make participants aware of their value conflict before they completed the other measures. As in Study 1, we included a hypothesis guessing question at the end of the questionnaire. We again did not find any indication that participants guessed the purpose of the study.

VC was calculated from the MV and GV scales using the same formula used in Study 1. All measures again showed satisfactory

internal consistency ( $\alpha > .86$ , see Appendix). Additional information on all constructs used in the statistical analyses is included in Table B.1 in the Supporting Information.

### 5.2 | Results

First, a simple mediation analysis was computed (PROCESS Model 4; 10,000 bootstrap; Hayes, 2018). Results of this mediation analysis showed that the relationship between VC and SWL was again mediated by stress. The results replicate the findings from Study 1 in a more diverse online consumer sample and lend further support to H1 (see Table B.2 in the Supporting Information for details). As in Study 1 4.2, we ran a competing model with materialism as independent variable (see Table B.3 in the Supporting Information for more details), VC again predicted more variance in our stress measure than did materialism (i.e.,  $R^2_{VC} = 0.123, p < .001$ ;  $R^2_{materialism} = 0.103, p < .001$ ).

In a second step, Study 2 aimed at testing the role of self-concept clarity in the theoretical model (see Figure 1). It was hypothesized that consumers who experience higher degrees of value conflict will have a less clear self-concept which is related to increased stress. To test this proposition, a serial mediation model was estimated (PROCESS Model 6; 10,000 bootstrap; Hayes, 2018; see Table 2). VC served as independent and SWL as dependent variable. Moreover, self-concept clarity and stress were added as serial mediators to this relationship. Again, gender and age were included as covariates as discussed in Section 3. As predicted, VC was negatively related to self-concept clarity. Both, VC and SCC were associated with stress (see Table 2). Consumers with high (vs. low) levels of SCC experienced lower (vs. higher) levels of stress. This finding is in line with our theoretical reasoning. Moreover, stress was negatively related to satisfaction with life. Importantly, the indirect effect is significant as the 95% confident interval does not contain zero. The results of the serial mediation therefore support H3.

**TABLE 2** Serial mediation model Study 2

Consequent	M1 (SCC)			M2 (stress)			Y (SWL)		
	B	SE	p	B	SE	p	B	SE	p
Intercept	4.31	0.39	<.001	6.03	0.46	<.001	4.98	0.68	<.001
VC	-1.42	0.49	.004	1.27	0.46	.007	0.76	0.51	.137
SCC				-0.61	0.07	<.001	0.26	0.09	.003
Stress							-0.40	0.08	<.001
Male	-0.01	0.19	.970	-0.30	0.17	.089	-0.67	0.19	<.001
Age	0.01	0.01	.049	-0.01	0.01	.190	-0.02	0.01	.002
Observations	200			200			200		
$R^2$ /adj. $R^2$	0.075/0.061			0.390/0.377			0.312/0.294		
F statistics	5.272**			31.103***			17.595***		
Indirect effect of VC on SWL through SCC and stress: -0.35 [-0.68; -0.09] <sup>a</sup>									

Abbreviations: B = unstandardized regression coefficients; SCC = self-concept clarity; SE = standard error; SWL = satisfaction with life; VC = value conflict.

<sup>a</sup>95% confidence interval.

\*\*\* $p < .001$ .

\*\* $p < .01$ .



### 5.3 | Discussion

Study 2 corroborated the findings from Study 1 in an online consumer sample. Stress again mediated the VC-SWL relationship. As in Study 1, consumers who experienced a VC reported heightened levels of stress, and their stress level was then associated with lowered satisfaction with life. Similar to Study 1, VC again predicted more variation in the stress measure than did materialism. In addition, Study 2 shed light on the role of SCC in explaining why high VC consumers experience negative affect (i.e., stress), and relatedly, lowered SWL. Consumers seem to strive for consistent self-views. Consequently, well-being seems to diminish when competing value profiles implicate inconsistencies in consumers' self-views. These insights are an important addition to the understanding of how value conflicts affect consumers.

While Study 2 constitutes further support for the proposed theoretical model, potential limitations have to be discussed. First, one might be concerned about the fact that we have used one fixed ordering of the constructs for all participants instead of randomizing the order of the constructs. It is indeed possible that this might have induced order effects. We do not think that this has been the case, however. We have carefully selected the order of the constructs in this study (see Section 5.1 for details) to minimize the potential of order effects. While we cannot fully rule out the possibility of order effects, the fact that Study 2 replicated the findings from Study 1 with a different order of constructs and a different design (i.e., one vs. two questionnaires that had been administered several weeks apart) indicates that order effects are likely not a concern. In addition, a hypothesis guessing question at the end of the study suggested that participants were not able to guess what the purpose of our study was. These findings gave us confidence in our methodological choices. Accordingly, we used the same ordering of constructs in Study 3 again.

Second, so far, our studies have implicitly assumed that a VC has the same well-being related effects for all consumers. In line with our theoretical framework, however, this should not necessarily be the case. In our theoretical model, we propose that high preference for consistency consumers should be particularly vulnerable to VC-related decreases in well-being. We test this prediction in Study 3.

## 6 | STUDY 3—THE MODERATING ROLE OF PREFERENCE FOR CONSISTENCY

The main purpose of Study 3 was to test the role of preference for consistency in the theoretical model. The general assumption is that the potential adverse effects of VC on SCC are more (less) pronounced for consumers who strive for high (vs. low) consistency in their lives. A graphical illustration of this model is included in Figure 1.

### 6.1 | Participants and method

Three hundred and fifty-one participants (48% male, average age 34.8 years) were recruited via ProA (www.prolific.ac) and received

financial compensation for their participation. Study 3 used the same measures as in Study 1 and Study 2. Preference for consistency was measured using the 18-item scale by Cialdini et al. (1995) on a 7-point rating scale. An example item is: "I want to be described by others as a stable, predictable person." All scales showed good internal consistency (all  $\alpha > .86$ , see Appendix). At the end of the questionnaire, a question on hypothesis guessing was included. None of the participants correctly identified the goal of this study. Descriptive information is available in Table C.1 in the Supporting Information.

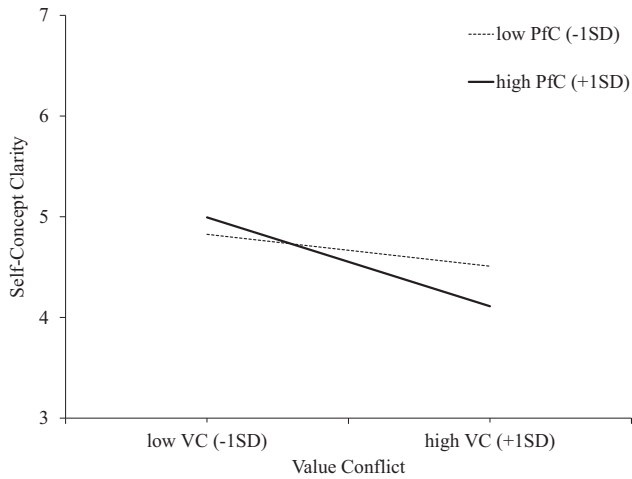
### 6.2 | Results

Study 3 replicates the general mediating effect of VC on SWL through its influence on stress (see Table C.2 in the Supporting Information). This lends further support to H1. The data also replicate the general findings of a serial mediation (i.e., a path from VC to SCC to stress to SWL; see Table C.3 in the Supporting Information for details). This supports H2 and H3. The analyses were completed with PROCESS (Models 4 and 6, respectively, 10,000 bootstrap samples; Hayes, 2018).

The main purpose of Study 3 was to test a potential boundary condition to the adverse effects of VC. This was done by running a simple moderation analysis (PROCESS Model 1, Hayes, 2018). Value conflict served as independent variable, PFC as moderator, and self-concept clarity as dependent variable. Gender and age were included as covariates.

Results of the moderation analysis lend support to our theoretical prediction that PFC moderates the VC-SCC relationship as the VC  $\times$  PFC interaction term was statistically significant ( $B = -0.84$ ,  $p < .05$ ). The interaction was probed by testing the conditional effects of VC at three levels of PFC (1SD below the mean, 1SD above the mean, and at the mean). Value conflict was significantly related to lower levels of self-concept clarity when PFC was 1SD above the mean and at the mean ( $p < .001$ ). However, when consumers' preference for consistency was 1SD below the mean, the relationship was not significant ( $p = .159$ ). In our data, the adverse effects of VC on SCC seem to be less pronounced for consumers who report a lower preference for consistency in their lives. Consumers who strive for consistency, on the other hand, might suffer more strongly from conflicting value profiles. To better understand the nature of this moderation effect, the interaction term was plotted. Figure 2 suggests that consumers who are high in PFC and who experience a strong VC report lower self-concept clarity compared with low PFC consumers who experience a strong VC. A different picture emerges for low VC consumers. These are consumers who are either high in green but low in materialistic values or high in materialism but low in green values. Among these consumers, high PFC consumers reported a higher self-concept clarity than low PFC consumers. Taken together, this set of findings supports H4.

In a next step, a moderated mediation model was run (PROCESS Model 83, Hayes, 2018) to test the overall model. SWL served as dependent variable, SCC and stress as mediators, and VC as the



**FIGURE 2** Moderation effect Study 3. Note: Pfc = preference for consistency; SD = standard deviation; VC = value conflict

independent variable. Preference for consistency was included as a moderator variable and it was tested whether it moderates the effect of value conflict on self-concept clarity. As in all models, gender and age were included as covariates. Table 3 summarizes the findings.

The index of moderated mediation (Hayes, 2018) is marginally statistically significant. While the 95% confidence interval includes zero, the 90% confidence interval does not (i.e., [-0.279, -0.001]). If we consider a simpler moderated mediation model (i.e., VC → SCC → stress), where Pfc again moderates the VC–SCC relationship, the index of moderated mediation is statistically significant (i.e., index of moderated mediation: 0.47; 95% confidence interval [0.01, 0.91]). The coefficients of this model are identical to the ones of the larger model shown in Table 3. Overall, these results support H4.

### 6.3 | Replication study

To test the robustness of these findings and add further confidence in their interpretation, a replication study was conducted. With one exception, this study used the same measurements as the preceding studies (i.e., materialism, green consumption values, preferences for consistency, self-concept clarity, and satisfaction with life scale). Instead of using the DASS scale, stress was measured with a list of 10 adjectives (e.g., *tense, uneasy, or distressed*; King, Burrows, & Stanley, 1983). The results of the replication study confirm the findings of Study 1, Study 2, and Study 3. In particular, the moderation effect (coefficient: -1.21;  $p < .001$ ) and the moderated mediation effect (index of moderated mediation: -0.31; 95% confidence interval [-0.50, -0.15]) were both statistically significant, lending further support to H4. All details (i.e., participants, methods and, results) are included in Part D of the Supporting Information.

### 6.4 | Discussion

Study 3 lends support to the prediction that preference for consistency is a boundary condition to the effect of a conflict between green and materialistic values. As hypothesized, the adverse effect of a value conflict on self-concept clarity was more pronounced for consumers who strive for consistency. In the presence of a strong VC, high Pfc consumers reported lower SCC compared with low Pfc consumers. Interestingly, in the absence of VC, high Pfc consumers reported higher SCC compared with low Pfc consumers. This indicates that high Pfc consumers do not just suffer more when they experience VC, but they also seem to benefit more when they hold only one dominant value orientation that is not conflicted with a second dominant value orientation. According to the theory presented here, high Pfc consumers (vs. low Pfc consumers) tend to monitor their past behavior

**TABLE 3** Moderated serial mediation Study 3

Consequent	M1 (SCC)			M2 (stress)			Y (SWL)		
	B	SE	p	B	SE	p	B	SE	p
Intercept	3.52	0.24	<.001	6.01	0.24	<.001	3.86	0.55	<.001
VCm	-1.67	0.42	<.001	1.32	0.33	<.001	0.05	0.47	.909
PfCm	-0.06	0.08	.433						
VCm × PfCm	-0.84	0.42	.049						
SCC				-0.56	0.04	<.001	0.21	0.07	.003
Stress							-0.28	0.07	<.001
Male	0.12	0.14	.405	-0.14	0.11	.227	-0.08	0.16	.614
Age	0.03	0.01	<.001	-0.00	0.00	.694	0.01	0.01	.453
Observations	351			351			351		
R <sup>2</sup> /adj. R <sup>2</sup>	0.140/0.128			0.420/0.413			0.161/0.149		
F statistics	11.245***			62.638***			13.248***		
Index of moderated mediation: -0.13 [-0.32, 0.03] <sup>a</sup>									

Abbreviations: B = unstandardized regression coefficients; PfCm = preference for consistency (mean centered); SCC = self-concept clarity; SE = standard error; SWL = satisfaction with life; VCm = value conflict (mean centered); VCm × PfCm = VCm–PfCm interaction.

<sup>a</sup>95% confidence interval, 90% confidence interval [-0.28, -0.001].

\*\*\* $p < .001$ .

to learn about their self-concept. When they experience VC, they are likely to become confused about their self-concept, and relatedly, suffer from associated heightened stress. When there is only one dominant value orientation, these consumers should have a clear picture of their self-concept. They should observe that they consistently perform one type of behavior. This clarity of the self is likely to positively impact their well-being. Low PFC consumers are less likely to experience such extreme effects of a variation of VC on SCC, and relatedly on their well-being. Of course, this interpretation of the findings is theoretical in nature as it is based on past research (see e.g., Guadagno & Cialdini, 2010). The data presented here do not allow us to actually observe or measure to what extent consumers monitored their past behavior. Future research could use diary methods to collect data and validate this interpretation of our results empirically.

The results regarding the moderated mediation in this study, however, warrant further discussion. First, the index of moderated mediation reaches only marginal statistical significance in the full model, while the interaction term between  $VC \times PFC$  is significant. Extant literature on mediation analysis suggests that the test of joint significance is a solid alternative to more complex methods of testing mediation effects, such as bias-corrected bootstrap intervals (Hayes & Scharkow, 2013). The latter (i.e., bias-corrected bootstrap intervals) is the method that was used to test the index of moderated mediation. The test of joint significance is a test of significance of all relevant coefficients in a mediation chain (Hayes & Scharkow, 2013). Since all coefficients in the mediation chain are significant, even in the full serial model in Table 3 (i.e.,  $VC \times PFC \rightarrow SCC \rightarrow stress \rightarrow SWL$ ), it can be concluded that there is a moderated mediation effect. This interpretation is reinforced by the fact that the index of moderated mediation is statistically significant in a reduced version of the model (i.e.,  $VC \times PFC \rightarrow SCC \rightarrow stress$ ).

Moreover, a replication study (presented in the Supporting Information) offers further support for the assumed moderating role of preference for consistency. In the replication study, both the moderation effect and the index of moderated mediation were statistically significant.

In addition, Study 3 replicates the findings of Study 1 and Study 2, which supports the robustness of the effects in the simple and serial mediation models.

## 7 | GENERAL DISCUSSION

### 7.1 | Contribution

The present research suggests that tension can arise between two important contemporary value orientations (i.e., materialism and green values) which can in turn reduce consumers' well-being. Across three studies and one replication study, this study uncovers the underlying process and presents evidence for a boundary condition to this effect. The results suggest that the value conflict is related to a reduced SCC, which in turn is related to an increased level of stress, which eventually is associated with decreases in consumers' satisfaction with life. Importantly, this effect is most pronounced among consumers high in PFC, while low PFC consumers seem to

suffer less from the negative consequences of a conflict between green and materialistic values.

These findings are important as they are the first, to our knowledge, to show potential negative side-effects of the sustainable and anti-consumption movements on consumer well-being. A popular strategy in social marketing seems to be to persuade consumers to care about the environment and to reconsider their consumption practices. However, the consequences of this trend for consumer well-being are not well established (García-de-Frutos et al., 2018). While recent research showed that anti-consumption tendencies in general (Lee & Ahn, 2016), negative attitudes toward consumption (Iyer & Muncy, 2016), or positive attitudes toward environmental protection (Welsch & Kühling, 2018) are related to increased well-being, the presented research suggests that there can be negative well-being consequences as well.

Starting from the observation that there are still many consumers with materialistic mindsets in Western societies (Burroughs & Rindfleisch, 2012), we suggest that the tension between two important contemporary value orientations (i.e., materialism and green values) can reduce consumers' well-being. Instead of enhancing consumer well-being by motivating a greener lifestyle, the findings indicate that these attempts could actually backfire. Our findings point to the problem that attempts to stimulate environmentally friendly behavior in materialistic consumers might cultivate a value conflict which leads to consumers' reduced psychological well-being.

Furthermore, the paper disentangles the processes through which such a value conflict produces its negative effect, namely through lowered self-concept clarity. The findings add to the understanding of value conflicts beyond the insights provided by Burroughs and Rindfleisch (2002). In particular, it is assumed that varying levels in SCC would be a main explanation of the effects found by Burroughs and Rindfleisch (2002) in other value conflict contexts. In addition, PFC might be an important boundary condition to other types of value conflicts as well, such as the ones studied by Burroughs and Rindfleisch (2002). This is an important insight as the knowledge of consumer characteristics that mitigate or enhance the negative effects of value conflicts is still limited (see e.g., Rabinovich & Morton, 2016 for an exception). Hence, future research could test whether the insights presented in this paper generalize to other value conflict contexts. This could subsequently serve as a launching pad for further research with the aim of developing a more comprehensive understanding of how value conflicts in general impact consumers.

In addition, it is not yet clear how different anti-consumption practices reinforce or diminish such a value conflict. In this vein, sustainability-rooted anti-consumption practices that aim to reduce the level of consumption (Seegebarth, Peyer, Balderjahn, & Wiedmann, 2016) might affect VC-related negative outcomes more than practices that substitute green products for non-green products. For example, reducing one's own level of consumption for the sake of the environment might be threatening to a materialistic consumer who considers possessions as a central source of happiness (Richins, 2004, 2017), even if this consumer also seeks to protect the environment. In contrast to that, research has shown that buying green products can be associated with higher social

status and particularly so if the price of a green option is higher than the price of a similar non-green consumption option (Griskevicius, Tybur, & van den Bergh, 2010). In 2010, Burroughs even suggested that green products might have taken over from “classic prestige goods” (extravagant, expensive, large) as the new status goods (Burroughs, 2010). Hence, creating high-priced green product alternatives could help to reduce the environmental footprint from consumption and reduce the experienced value conflict between materialistic and green values at the same time.

It is acknowledged, that this is less desirable from a sustainability point of view than reduction or avoidance practices. The most effective way for a consumer to reduce their environmental impact seems to be to reduce their total level of consumption, rather than keeping their consumption level constant while replacing products or services they consume with more environmentally friendly options (García-de-Frutos et al., 2018; Kropfeld et al., 2018). Even though less effective than reducing consumption, the latter might still constitute a viable compromise between reducing ones’ environmental impact and avoiding negative well-being consequences.

A related question pertains to the effects of celebrities who endorse environmentally conscious behavior or even anti-consumption in one of its strict forms (e.g., voluntary simplicity). For example, Leonardo DiCaprio repeatedly uses his fame to raise awareness in public and to promote an environmentally friendly lifestyle (Goldenberg, 2016). It might be tempting for materialistic individuals to follow the example of celebrities that endorse a simpler more environmentally conscious lifestyle and who seemingly are praised and admired for it. This is because these celebrity examples could suggest to materialistic consumers that such behavior can create social status (i.e., one of the core materialistic goals, Kasser et al., 2004) and therefore align materialism and environmentalism. It is not clear, however, whether this is indeed the case and whether a value conflict can be avoided this way. It is also possible that condemning statements regarding materialism trigger a value conflict in materialistic consumers independent of the person who issues them. Future research is necessary to explore the effects of celebrities’ environmental endorsement on consumer well-being.

## 7.2 | Consequences for public policy

The importance of both (green and materialistic) value profiles seems to make it more important than ever to consider potential negative side-effects of promoting sustainability in societies with large numbers of materialistic consumers. It might be necessary to carefully plan and test sustainability campaigns to avoid unintended negative consequences for consumer well-being. However, more research is needed to identify how this can be achieved best. Ideally, future research could utilize field experiments to study the impact of different potential remedies in real-world contexts.

For example, interventions related to materialistic goal achievement might be promising in this regard. Dholakia et al. (2018) show that certain reflection tasks can diminish the desire to buy new items. In line with literature on mindful consumption, they report that consumers who

reflected on recently used personal possessions experienced less desire for new products. However, they also found that the effect reversed when the focal possession in the reflection task was hedonic (vs. functional). Hedonic products seemed to stimulate rather than diminish the desire for new products in a subsequent shopping scenario.

Additionally, it might be promising to focus on inhibiting the development of materialistic values in future generations to avoid this value conflict altogether. Admittedly, since the development of materialism seems to be tied in with marketing interests of for-profit organizations (Kasser et al., 2004; Twenge & Kasser, 2013) and large-scale socioeconomic phenomena (Arndt, Solomon, Kasser, & Sheldon, 2004; Twenge & Kasser, 2013), this might be an ambitious approach. There are however interventions that can be done on a smaller scale that might impact materialism on an individual level. For example, extant research suggests that interventions boosting children’s self-esteem might have merit in this regard (Chaplin & John, 2007). In addition, interventions targeted at changing materialistic parenting styles into less-materialistic ways of upbringing children might be promising as well (Richins & Chaplin, 2015). Public-policy makers could also utilize messages that are directed at a person’s own well-being or that provide arguments that help consumers to resist the current materialistic societies. For example, they could try to build an understanding that it might not be possible to buy happiness in a shop (Peattie & Peattie, 2009) or highlight the benefits of reducing consumption (Nepomuceno & Laroche, 2015).

## 7.3 | Limitations

Our research is limited mainly due to its reliance on cross-sectional data. Even though our data are supportive of our theoretical model, the nature of the data does not allow us to test causal effects between the constructs of interest directly. Since values develop over a longer period of time (Rokeach, 1979), it is also unlikely that experimental methods will be suitable to test causal relationships. Instead, future research could utilize longitudinal methods to investigate the causal nature of the relationships between the green-materialism VC, SCC, stress, and well-being.

In addition, the nature of the data prevented us from studying potential feedback loops. Consumers who experience negative consequences of VC might be motivated to address this and prioritize certain values in their value system over others to reduce the experience of confusion and stress in the future. This could ironically lead consumers who are initially materialistic and who are exposed to sustainable messages to eventually strengthen their materialistic value orientation even more in an attempt to mitigate the stress that an emerging value conflict might cause. Again, longitudinal studies could be used to study such potential feedback loops and develop a better understanding of the nature and underlying processes of a green-materialism value conflict.

## 7.4 | Conclusion

The present paper indicates that a tension between two important contemporary value orientations (i.e., materialism and green values) can

reduce consumers' well-being. This is important as the literature on sustainable consumption and environmentally oriented anti-consumption has largely neglected the potential side-effects of the sustainable consumption movement on consumer well-being. As such, we believe that our research has opened an important avenue for further research about the potentially negative effects of the sustainability movement.

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## CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

## ORCID

Pia Furchheim  <http://orcid.org/0000-0001-5613-6714>

Felicitas Morhart  <http://orcid.org/0000-0003-2170-2805>

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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## APPENDIX: OVERVIEW OF USED SCALES

### Material Value Scale (Richins, 2013)

- I admire people who own expensive homes, cars, and clothes.
- Buying things gives me a lot of pleasure.
- My life would be happier if I owned certain things I don't have.
- The things I own say a lot about how well I'm doing in life.
- I try to keep my life simple, as far as possessions are concerned. (*reversed*)
- I'd be happier if I could afford to buy more things.
- I like to own things that impress people.
- I like a lot of luxury in my life.
- It sometimes bothers me quite a bit that I can't afford to buy all the things that I'd like.

**Cronbach's Alpha:** Study 1:  $\alpha = .847$ ; Study 2:  $\alpha = .865$ ; Study 3:  $\alpha = .868$   
**Green Consumption Values** (Haws et al., 2014)

- It is important to me that the products I use do not harm the environment.
- I consider the potential environmental impact of my actions when making many of my decisions.
- My purchase habits are affected by my concern for our environment.
- I am concerned about wasting the resources of our planet.
- I would describe myself as environmentally responsible.
- I am willing to be inconvenienced in order to take actions that are environmentally friendly.

**Cronbach's Alpha:** Study 1:  $\alpha = .929$ ; Study 2:  $\alpha = .944$ ; Study 3:  $\alpha = .943$

### Stress (DASS, Lovibond & Lovibond, 2010)

- I find it hard to wind down.
- I tend to over-react to situations.
- I feel that I am using a lot of nervous energy.
- I often find myself getting agitated.
- I find it difficult to relax.

- I am intolerant of anything that keeps me from getting on with what I am doing.
- I am often rather touchy.

**Cronbach's Alpha:** Study 1:  $\alpha = .834$ ; Study 2:  $\alpha = .893$ ; Study 3:  $\alpha = .888$

### Satisfaction with Life (Diener et al., 1985)

- In most ways my life is close to my ideal.
- The conditions of my life are excellent.
- I am satisfied with my life.
- So far I have gotten the important things I want in life.
- If I could live my life over, I would change almost nothing.

**Cronbach's Alpha:** Study 1:  $\alpha = .840$ ; Study 2:  $\alpha = .904$ ; Study 3:  $\alpha = .928$

### Self-Concept Clarity (Campbell et al., 1996)

- My beliefs about myself often conflict with one another.
- On one day I might have one opinion of myself and on another day I might have a different opinion.
- I spend a lot of time wondering about what kind of person I really am.
- Sometimes I feel that I am not really the person that I appear to be.
- When I think about the kind of person I have been in the past, I'm not sure what I was really like.
- I seldom experience conflict between the different aspects of my personality.
- Sometimes I think I know other people better than I know myself.
- My beliefs about myself seem to change very frequently.
- If I were asked to describe my personality, my description might end up being different from one day to another day.
- Even if I wanted to, I don't think I could tell someone what I'm really like.
- In general, I have a clear sense of who I am and what I am.
- It is often hard for me to make up my mind about things because I don't really know what I want.

**Cronbach's Alpha:** Study 2:  $\alpha = .912$ ; Study 3:  $\alpha = .940$

### Preference for Consistency (Cialdini et al., 1995)

- I prefer to be around people whose reactions I can anticipate.
- It is important to me that my actions are consistent with my beliefs.
- Even if my attitudes and actions seemed consistent with one another to me, it would bother me if they did not seem consistent in the eyes of others.
- It is important to me that those who know me can predict what I will do.
- I want to be described by others as a stable, predictable person.
- Admirable people are consistent and predictable.
- The appearance of consistency is an important part of the image I present to the world.



- It bothers me when someone I depend on is unpredictable.
- I don't like to appear as if I am inconsistent.
- I get uncomfortable when I find my behavior contradicts my beliefs.
- An important requirement for any friend of mine is personal consistency.
- I typically prefer to do things the same way.
- I dislike people who are constantly changing their opinions.
- I want my close friends to be predictable.
- It is important to me that others view me as a stable person.
- I make an effort to appear consistent to others.
- I'm uncomfortable holding two beliefs that are inconsistent.
- It doesn't bother me much if my actions are inconsistent. (*reversed*)

**Cronbach's Alpha:** Study 3:  $\alpha = .920$