CLIMATE CHANGE AS AN EXISTENTIAL CHALLENGE:

EXPLORING HOW EMERGING ADULTS COPE WITH AMBIVALENCE CONCERNING CLIMATE-FRIENDLY FOOD CHOICES

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Abstract

This article focuses on the existential aspects of global climate change. Pessimism regarding this problem seems to be particularly common in emerging adulthood (the late teens and twenties). Research also shows that many in this age group feel ambivalent about different pro-environmental behaviors and that ambivalence is a disincentive to behave in an environmentally friendly way. This article's aim is foremost theoretical, with a focus on living with ambivalence in a more or less "unsustainable" society that simultaneously puts pressure on the individual to live in a sustainable manner. Deploying existential theories and theories about ambivalence, the article argues that we cannot avoid ambivalence because of the complexity of climate change. Therefore, we should not focus foremost on getting rid of this feeling. Instead, it is crucial to look at how young people think about and cope with their ambivalence. An earlier qualitative study indicates that there are "negative" and "positive" ways to handle ambivalence seen from a behavioral perspective. We illustrate this with data from a quantitative pilot study with university students (n=261) regarding climate-friendly food choices. The results show that ambivalence and negative thinking patterns are negatively related to climate-friendly food choices, while the variable, positive thinking patterns, is significantly positively associated with and is the most potent predictor of these food choices.

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> *Furthermore, a theoretical model where ambivalence leads to negative thinking patterns, which then leads to less climate-friendly food choices, was supported in a mediation analysis. It is concluded that it is vital to discuss these thinking patterns in a critical way to promote coping strategies that can help the young face their ambivalence and be active despite it. In this regard, from a developmental psychological perspective, emerging adulthood is an ideal age period.*

Climate change as an existential challenge: Exploring how emerging adults cope with ambivalence concerning climate-friendly food choices

1. Introduction

To relate to the larger world and its problems is an important developmental challenge in late adolescence and early adulthood (Arnett, 2000; Damon, 2008; Flanagan, 2015). This is an age period that in developmental psychology is called emerging adulthood (Arnett, 2000). Because many young people today continue their education far into their twenties and therefore often get a stable partner and have children at an older age, emerging adulthood is an ideal time for exploration regarding work and relationships. This is also true when it comes to creating an ideological part of one's identity, where one's connection to the broader society is developed (Arnett, Ramos, & Jensen, 2001). Therefore, it is also interesting to study how emerging adults relate to today's perhaps most serious global problem, climate change.

During recent years, there has been huge public interest in young people as an important stakeholder group concerning climate change. The spotlight has primarily been on children and teenagers engaged in Fridays for Future and the global school strikes. There is less focus on emerging adults as a vital group concerning climate engagement. This is unfortunate because emerging adults are in a transitional phase where they have left, or are about to leave, their childhood home and are in the process of starting up their own household and their life as adults. Transition phases are considered to be particularly important in taking in new information and breaking with norms and habits created in, for instance, the childhood home or in peer groups (Bornstein, 2018; Lenz, 2001). Therefore, this age period can also be critical from a sustainable living perspective where, for example, habits around climate-friendly behaviors are recreated and consolidated (see, for instance, Verplanken, Roy, & Whitmarsch, 2018).

However, research suggests that disempowerment concerning sustainability issues increases from childhood to emerging adulthood (Eckersley, 1999; Ojala, 2012). Perhaps this is the case because of a more advanced understanding of climate change's seriousness and the complexities and ambiguity

pertaining to climate-friendly behaviors (see Ojala, 2008). This understanding can lead to an increase in negative emotions of, for example, ambivalence, that is, a tension felt in relation to having mixed attitudes about, for instance, sustainability issues. Arnett points out that emerging adults can experience the complex task of taking on global issues as overwhelming. Therefore, some tend to use defensive coping strategies against uncertainty, complexity, and related feelings (Arnett, 2002), which can also be the case concerning climate change and our responsibility to deal with this problem.

The aim of this article is foremost theoretical: we deploy existential theories and theories about ambivalence to argue that because of the complexity of climate change, and the more or less unsustainable society we live in, we cannot avoid ambivalence concerning climate-friendly behaviors. Therefore, we should not focus foremost on getting rid of these feelings. Instead, we claim that it is essential to look at how young people deal with their ambivalence. These thinking patterns could be more important than ambivalence in itself for whether a person will behave climate-friendly or not. We also use data from a quantitative pilot study with university students about climate-friendly food choices to explore how ambivalence and coping strategies relate to these climate-friendly behaviors. Food choices are related to almost all of the UN Sustainable Development Goals, health problems, such as heart and inflammatory diseases, but also global injustice, biodiversity loss, and not least climate change (Dernini et al., 2017; Johnston, Fanzo, & Cogill, 2014).

2. Theories about ambivalence

Social scientists have long claimed that due to global problems' complexity, feelings of ambivalence have become quite common in society (Bauman, 1991; Giddens, 1991). It is also well known that although many people value and want to behave in an environmentally friendly manner, they also harbor ambivalent attitudes, i.e., mixed and sometimes inconsistent views, about these behaviors, due to, for instance, the uncertainty and inconvenience associated with them (Barata & Castro, 2013; Costarelli & Colloca, 2004; Ojala, 2008). To take one example: You can feel that it is meaningful to stop eating meat because of the climate crisis simultaneously as you feel that it is meaningless because companies and governments do not take the climate issue as seriously as they ought to. This can lead to tension, and this ambivalence can make people less inclined to behave in climate-friendly and pro-environmental ways (Barata & Castro, 2013; Costarelli & Colloca, 2004; Jonas, Diehl, & Brömer, 1997; Ojala, 2008).

One could argue that ambivalence could be particularly prominent among emerging adults who have grown up with alarming reports about climate change and have been taught climate-friendly values in school but who,

when starting up their own households, are confronting the complex and ambiguous aspects of climate-friendly behaviors, perhaps for the first time (Ojala, 2008). In this regard, developmental psychologists have emphasized that the development of social responsibility in times of social change is dependent on the ability to constructively deal with parallel cultural and societal discourses that are often in opposition to each other (Haste & Abrahams, 2008). Young people have to make sense of these competing discourses, and hopefully, this will be done constructively. Therefore, it is not surprising that educational researchers argue that one of the most important competencies to promote in young people regarding sustainability issues is to be able to handle complexity, ambivalence, and uncertainty related to the global sustainability challenges (Rieckmann, 2012; Wals & Corcoran, 2012).

Social psychology research has found that people who are made aware of their ambivalent attitudes are inclined to experience cognitive dissonance, i.e., an aversive psychological state of tension and discomfort, and these feelings, in turn, motivate people to use different coping strategies to reduce the inconsistency in their assessment (Itzchakov, Amar, & Van Harreveld, 2020; Nordgren, van Harreveld, & van der Pligt, 2006; van Harreveld et al., 2009). Strategies to reduce cognitive dissonance are not necessarily something positive seen from an engagement perspective, as they are often defensive in character (Festinger, 1957), which has also been found to be true for handling ambivalent attitudes (Clark et al., 2008; Hänze, 2001; Itzchakov et al., 2020). In other words, people who use defensive strategies to handle their ambivalence are less inclined to take in information, which can impede actual behavior, for example, climate-friendly behaviors. This research implies that there is a need to explore whether there are more positive strategies that people can use to cope with their ambivalence. In order to shed some light on the possibilities of dealing with ambivalence in more constructive ways, we will turn to existential theories and theories about dialectical and postformal thinking in the next two sections.

3. Existential theories

Vandenberg (1991) argues that developmental psychologists and educational scientists have, on the whole, ignored existential issues and thereby overlooked vital aspects of what it means to learn and grow as a human being. Existential questions about issues like freedom and uncertainty, responsibility and guilt, hope or disillusion, meaningfulness or senselessness are important for young people. These issues are about the most fundamental aspects of being human. They involve cognition and are also imbued with emotions; they are embodied in our way of interacting with the surrounding world.

Existentialism is often looked upon as being about things that are close and particular to us. However, Jacobsen argues that there is also openness and sensitivity to the distance in this tradition (Jacobsen, 2000). We are bound up both with people living in far-away countries and with nature. There is also a connection between existential issues and moral questions; they include aspects of right and wrong and responsibility (Cooper, 2000; Shaffer, 1978; Vandenberg, 1991). This responsibility could be divided into three themes: responsibility for others close to us, for the broader society, and ourselves (Jacobsen, 2000). In this regard, negative emotions of ambivalence can occur as one struggles with the unavoidable fact that one can never totally live up to one's responsibilities. Courage, according to the well-known existential psychologist Rollo May is to try to transform these negative emotions into action despite one´s imperfection (May, 1996). Therefore, addressing negative emotions about climate change and the ambiguities and ambivalence related to climate-friendly actions can be seen as a critical existential and moral challenge. It is about taking on responsibility for the broader society.

4. Dialectical and postformal thinking

With regard to facing up to one's imperfections and living with ambivalence, theories about dialectical thinking could be useful to apply. According to Baumrind, to think dialectically is: "to emphasize a unity of opposites and to attempt to synthesize thesis and antithesis" (Baumrind, 2005, p. 22). It is about being able to go beyond dichotomies and reach a synthesis by creating more complex systems encompassing seemingly conflicting entities. Opposites are not seen as contradictory, as is often the case when merely formal operational thinking is used; instead, dialectic thinking points toward the dynamic relationships between these opposites that are the basic building blocks for development, change and novelty (Basseches, 2005; Kuczynski & Parkin, 2007). One could claim that to think dialectically, one has to possess a certain amount of creativity to find and clarify what is to many people a hidden integral relationship between opposites (Benack, Basseches, & Swan, 1989). To conclude, dialectical thinking seems to be a less rigid way to deal with ambivalence.

Dialectical thinking can be seen as a form of postformal thinking, which is a developmental stage that is seen as especially relevant in emerging adulthood (Wu & Chiou, 2008). In this age span, the idealistic worldviews and black-and-white thinking that are common in the teenage years are challenged, and most emerging adults start to adapt to the limitations of reality. This adaptation can take many forms, and only a few enter a stage characterized by postformal thinking, where they start to think more holistically and flexibly, including the ability to hold multiple perspectives that may contrast

with one another at the same time (Labouvie-Vief, 2006; Sinnott, 1998). Postformal thinking is developed through life experiences where one confronts and deals with conflicts between ideals and reality, which is seen as including dialectical thinking (Wu & Chiou, 2008). For this thinking to develop, there is a need for appropriate contextual support in, for instance, higher education (Labouvie-Vief, 2006). To summarize, postformal and dialectical thinking could be ways that some emerging adults use to deal with ambivalence, and perhaps they can help young people be active despite the inherent complexity of problems.

5. To handle ambivalence – positive and negative thinking patterns

In a study about how emerging adults in their twenties handled ambivalence concerning energy saving in the household, on a population level, ambivalent attitudes were negatively related to reported energy-saving behavior (Ojala & Rikner, 2010). However, this study also showed that those that were highly ambivalent coped with their ambivalence in different ways; while some used black-and-white thinking, some used, for example, a form of dialectical thinking. Two highly ambivalent groups were interviewed, one group that was not saving energy and one that, despite feeling ambivalence, did save energy to a relatively high degree. The emerging adults who were ambivalent about energy saving in the household and who did not try to save energy used strategies such as perfectionism and black-and-white thinking, claiming that unless everyone is trying to save energy, or unless they themselves do it all the time, there is absolutely no point in trying to save energy at all (Ojala & Rikner, 2010). Since no one is perfect, this is quite an effective way to avoid taking responsibility concerning energy saving.

Some in the group that did save energy, even though they were ambivalent, instead coped by using something that the authors called deontological thinking, where the young people argued that to save energy is the right thing to do whether or not other people save energy (Ojala & Rikner, 2010). Deontological ethics concerns rules about right and wrong independent of how others act or the consequences of that action (Alexander & Moore, 2008). Some also used dialectical thinking in the sense that they did not get caught up in black-and-white thinking around their ambivalence but instead transcended it by deploying more complex reasoning. They argued, for example, that although your behavior might not have much impact, you can at least be a role model for others or that someone needs to take the first step. Or they looked upon energy saving from an aggregated perspective where they argued that many small actions by many add up to a rather substantial impact on the climate. Thus, they perceived both negative and positive aspects of behaving pro-environmentally but went beyond these dichotomies

by taking in a third element like "one can at least be a role model" in their reasoning (see Baumrind, 2005).

6. Aims of the pilot study

In the pilot-study part of this article, we capture both the negative and the positive thinking patterns mentioned above in a survey aimed at emerging adults studying at the university. The context is climate-friendly food choices. We also measure subjective ambivalence regarding climate-friendly food choices and include an already validated scale of reported climate-friendly food choices.

(1) The first aim of this pilot study is to explore whether ambivalence and positive and negative thinking strategies around ambivalence are significantly related to climate-friendly food choices. We expect ambivalence and negative strategies to be significantly negatively correlated to climate-friendly food choices, while we expect positive strategies to have a positive correlation to these kinds of food choices. (2) In a hierarchical multiple regression analysis, the second aim is to investigate which of these factors have the strongest impact on climate-friendly food choices. Could the thinking strategies be even more crucial than ambivalence in explaining food choices? (3) After that, we explore whether the negative strategies work as a mediator between ambivalence and climate-friendly food choices. The theoretical thought behind this analysis is that for some emerging adults, ambivalence as an adverse feeling can most probably lead to negative thinking strategies, which then decrease climate-friendly food choices. We test this theoretical proposition by performing a mediation analysis. (4) Finally, we explore whether positive thinking strategies can work as a buffer, hindering ambivalence from having a negative relation to climate-friendly food choices. The thought is that some young people have a tendency to think in a more post-formal way, including dialectical thinking, and that this way of thinking can help them deal with ambivalence. We test this theoretical proposition by performing a moderation analysis.

7. Method

7.1 Procedure and participants
The pilot study is based on a convenience sample of university students in Sweden. We collected the data in two ways: Classes at two universities in central Sweden were approached with information about the study and a link to an electronic questionnaire. The information and a link were also posted on Facebook groups for university students at different universities in Sweden. The original sample consisted of 284 students, 21 of whom were not

included in the study since they were over the age of 30 and therefore did not belong to the emerging-adult group. The data from two participants was missing completely, which left a remaining sample of 261 persons with a mean age of 23. [3]

7.2 Measures

We measured climate-friendly food choices using a 7-item scale (Mäkiniemi & Vainio, 2013). The students estimated how frequently they made climate-friendly food choices on a seven-point scale (1 = never, 2 = less than once a year, 3 = once or a few times a year, 4 = once or a few times each six months, 5 = once or a few times a month, 6 = once or a few times a week, 7 = almost every day or daily). Items include statements such as "I try to select foods that have as small a negative climate effect as possible," "I limit the consumption of meat and dairy products," and "I think about not throwing food away unnecessarily (less food waste)." We used the mean to calculate a scale of climate-friendly food choices as we also did with the rest of the scales. The Cronbach alpha of the scale was .88.

The concept of subjective ambivalence implies that people are aware of their ambivalence (see Jonas, Broemer, & Diehl, 2000). We measured subjective ambivalence about climate-friendly food choices with three items: "I think it can be both positive and negative to make climate-friendly food choices," "I have conflicted feelings about making climate-friendly food choices," "I have mixed positive and negative opinions about climate-friendly food choices." The items were followed by a 7-point scale anchored with "Doesn't apply at all = 1" to "Applies very well = 7." Cronbach alpha was .78.

The measures of positive and negative thinking patterns around ambivalence concerning climate-friendly food choices were developed for this study and were inspired by two qualitative studies with emerging adults where the focus was on coping with ambivalence in relation to recycling and energy-saving (Ojala, 2008: Ojala & Rikner, 2010). The response alternatives were: "not true at all = 1," "not very true = 2," "fairly true = 3," "relatively true = 4," "very true = 5."Five items measured the negative thinking strategies: "Unless all people start to eat in a climate-friendly way, there is no point in me making climate-friendly food choices," "There is no point in thinking about avoiding food waste unless everyone is doing so," "Unless you have complete evidence that the food you choose is climate-friendly, you might as well forget about it," "Unless all countries take the climate threat seriously there is no point in us Swedes making climate-smart food choices," "If I´m not absolutely sure that my food choices affect the climate, there is no point in me trying to make climate-friendly food choices." Cronbach alpha was .81.

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3   Information about gender and other socio-economic factors were not collected for reasons of anonymity and due to lack of space in the questionnaire.

Five items measured the positive thinking strategies: "Even though many countries do not care about the climate issue, we in Sweden have a responsibility to do the best we can," "Even though many people don´t care about eating in a climate-friendly way, I can at least act as a role model and do my best," "Although not enough people eat in a climate-friendly, I usually think that someone has to take the first step," "Even though many countries do not take the climate threat seriously, Sweden can act as a role model with regard to this," "Although what one person does, by and large, does not have a great effect on the climate, it´s wrong to waste food." Cronbach alpha for this scale was .85.

7.3 Data analysis

All analyses were conducted using SPSS version 24. Internal attrition was low for the study items, ranging from 1.1% to 2.3% and from 2.3% to 3% on a scale level. Multiple Imputation (MI) with the Markov Chain Monte Carlo (MCMC) imputation procedure was used to handle missing data, with 10 iterations and a total of 20 imputed datasets. Descriptive statistics, Pearson correlations, and multiple hierarchical regression analyses were performed to illustrate and explore the paper's arguments. To test the mediation hypothesis for ambivalence and negative thinking strategies, a mediation analysis was conducted using the PROCESS v. 3.4.1 macro (Hayes, 2013) for SPSS with 5000 bootstrap samples and heteroscedasticity-consistent standard errors.

Ambivalence was entered as a predictor of climate-friendly food choices, and negative thinking strategies were entered as a mediator. The ratio of the indirect effect to the total effect (P_M) was used to assess effect size in line with recommendations by Wen and Fan (2015). The PM indicates how much of the total effect the indirect effect accounts for. To test the moderation hypothesis for ambivalence and positive strategies, a moderation analysis was conducted, again using the PROCESS v. 3.4.1 macro in SPSS (Hayes, 2013). The interaction variables, ambivalence and positive thinking strategies, were mean-centered prior to analysis. For the analyses conducted with the PROCESS macro, listwise deletion was used, given that the macro does not support pooled data analysis. Therefore, the total sample size in these analyses was 250 (mediation analysis) and 251 (moderation analysis).

8. Results

Table 1 displays the mean, standard deviations, and correlation coefficients between climate-friendly food choices, ambivalence, and positive and negative thinking strategies. As can be seen from the table, the mean for ambivalence, as well as negative thinking strategies, were relatively low in the

study sample, whereas the means for climate-friendly food choices and positive thinking strategies were higher.

Table 1.

Descriptive Statistics and Correlations for Study Constructs

Construct	M	SD	1.	2.	3.	4.
Climate-friendly food choices	4.93	1.57	-			
Ambivalence	2.12	1.51	-.15*	-		
Positive thinking strategies	4.14	0.83	.61**	-.07	-	
Negative thinking strategies	1.70	0.73	-.46**	.17**	-.68**	-

Note. Pooled statistics from MI. $n = 261$.
  *p < .05
**p < .01

As expected, climate-friendly food choices was negatively correlated with ambivalence and negative thinking strategies but positively correlated with positive thinking strategies. Positive thinking strategies also correlated in the expected direction with negative strategies but did not significantly correlate with ambivalence (see Table 1).

Table 2 shows the results from a hierarchical regression analysis where ambivalence was added in the first step and the second step's thinking patterns. As shown from the table, ambivalence was a significant predictor of climate-friendly food choices but explained a relatively low percentage of the variance. Adding positive and negative thinking strategies significantly increased the variance explained with both ambivalence and positive thinking strategies significantly predicting climate-friendly food choices in the expected direction. Positive thinking strategies were the most potent predictor, while negative thinking strategies were not a unique significant predictor.

Table 2.

*Results From the Two-Step Hierarchical Regression
With Climate-Friendly Food Choices as Outcome.*

Predictor	*B*	*SE*	β	95% CI		*P*
				LB	UB	
Model 1						
Ambivalence	-.16	.06	-.15	-.28	-.03	.01
R²	.02					
F	6.15					.01
Model 2						
Ambivalence	-.11	.05	-.10	-.21	-.01	.04
Positive thinking strategies	1.08	.13	.57	.83	1.32	.00
Negative thinking strategies	-.12	.15	.05	-.40	.17	.43
R²	.39					
ΔR²	.37					
ΔF	76.90					.00

Note. All statistics represent pooled estimates from MI. *n* = 261.

Figure 1 shows the results of the mediation analysis. The total effect was (b=-.16, p =.02). As shown in Figure 1, the direct effect of ambivalence on climate-friendly food choices was no longer significant when negative thinking strategies were entered as a mediator (b=-.08, p =.18). However, there was an indirect effect through negative thinking strategies b= -.07, 95% PCa CI [-.13; -.02] with an effect size of PM= .44. Thus, higher levels of ambivalence are related to more engagement in negative thinking strategies, which in turn is related to making less climate-friendly food choices.
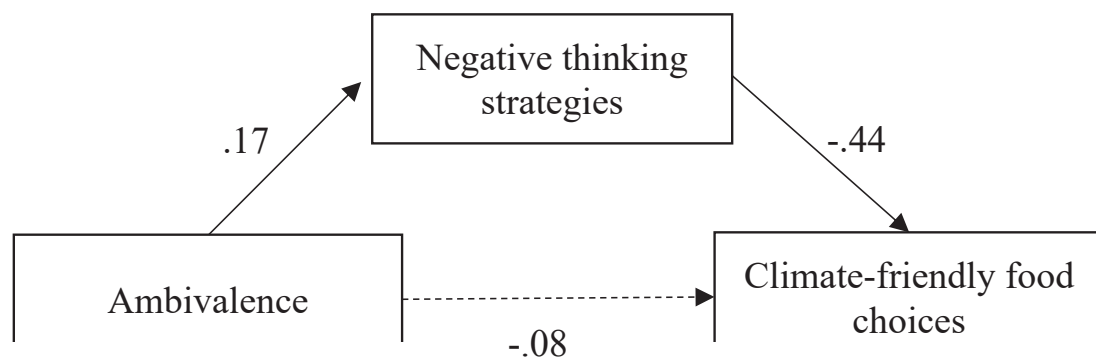

Figure 1. Mediation model. Numbers represent standardized regression coefficients. Paths drawn with broken lines were not significant. n = 250

The moderation analysis result where positive thinking strategies were entered as a moderator of the relationship between ambivalence, and climate-friendly food choices, did not show any significant interaction (B=-.02, p=.61). However, both ambivalence (B=-.11, p=.02) and positive thinking strategies were significantly related to climate-friendly food choices (B=-1.16, p <.001). This may suggest that positive thinking strategies do not act as a buffer for those experiencing higher levels of ambivalence. Instead, it has a positive relation to climate-friendly food choices irrespective of ambivalence levels.

Discussion and conclusion

The pilot study shows that ambivalent attitudes and negative thinking patterns, including black-and-white thinking, are negatively related to taking on responsibility concerning climate change through climate-friendly food choices among a group of emerging adults. This indicates that the more emerging adults feel ambivalent and use negative thinking strategies, the less inclined they are to make climate-friendly choices. In addition, positive thinking patterns had a positive relation to food choices, and this was also the most potent predictor indicating that the more inclined the emerging adults are to think in a dialectical way or to focus on the "right" thing to do instead of concentrating on consequences of their action around climate change issues, the more inclined they are to make climate-friendly choices regarding food. The moderation analysis was not significant, which could indicate that positive thinking strategies do not specifically act as a buffer for those with higher levels of ambivalence but have a positive relation to making climate-friendly food choices whether the individual is ambivalent or not. However, the small sample size and rather low levels of ambivalence in the current sample may have resulted in floor effects and insufficient power to detect small to medium effects.

The result showing that ambivalence about climate-friendly food choices was negatively related to reported food choices was expected, as earlier studies have demonstrated that ambivalence hinders climate-friendly and pro-environmental behaviors (Barata & Castro, 2013; Costarelli & Colloca, 2004; Ojala, 2008). Somewhat more surprising was the finding that strong ambivalent attitudes about climate-friendly food choices were not particularly common among the emerging adults, and neither was negative thinking strategies. This could, of course, be the case because this is only a first pilot study where we did not aim to obtain a representative sample of emerging adults. Therefore, most probably, there is an overrepresentation of young people interested in the climate-change problem in the sample. Perhaps they are less ambivalent than an average group of emerging adults. Some researchers also claim that, ideally, one also should include objective ambivalence,

where one measures the positive and negative dimensions of attitudes separately, in studies like this one (see Thompson, Zanna, & Griffin,1995), which we did not do. The sample also consists of university students, which can explain the relatively high mean for complex positive thinking strategies, including dialectical thinking concerning climate-friendly food choices.

However, it is interesting that the mediation analysis supports the theoretical idea that ambivalence leads to negative thinking patterns, which then leads to a lower degree of climate-friendly food choices. Although, of course, an experimental study is needed to test this idea fully. For many people, it can be quite uncomfortable to be inconsistent in their judgments, and this could lead to negative thinking patterns as a form of defensive coping strategy to deal with the ambivalence (Clark et al., 2008; van Harreveld et al., 2009; Hänze, 2001; Itzchakov et al., 2020). Defensive ways of dealing with emotions seldom lead to active engagement. However, research has indicated that if one can show that it is normal or maybe even something positive, indicating complex thinking, to accommodate ambivalent attitudes, one can deter people from using defensive strategies and hopefully render them to become more inclined to listen to well-founded information about the issue at hand (Bell & Esses, 2002; Nordgren et al., 2006). Also, if one wants to promote a more climate-friendly way of relating to food, it could be argued that it is vital to lift these strategies to the surface and critically discuss them to disrupt them (see Ojala, 2016).

The study also supports the theoretical idea that positive thinking patterns, including dialectical thinking, are beneficial in relation to climate-friendly food choices and are a more important predictor of these food choices than ambivalence itself. Climate change is a "wicked problem" that is very complex, and suggested behavioral solutions to this problem are often drenched in uncertainty. Although climate change has not been in focus, some developmental researchers emphasize that in order to deal with complex problems that appear in emerging adulthood, it is vital to use postformal thinking, in the form of, for example, dialectical thinking, where conflicts and contradictions are seen as opportunities for intellectual growth and creative solutions to problems (Baumrind, 2005; Wu & Chiou, 2008; Yang, Wan, & Chiou, 2010).

The pilot study has some limitations. The most obvious one is that the study is only cross-sectional and cannot capture any causal relations, even though the mediation analysis supports the theoretical ideas. Therefore, in future research, longitudinal and experimental studies ought to be performed. Another weakness is that the sample is a convenience sample consisting solely of university students. There is probably an over-representation of people who are highly interested in the climate-change issue, which could influence the results to a certain degree. Also, the sample size is relatively small, which can be detrimental for performing moderation analyses. It is also crucial to point out that complex concepts such as dialectical thinking

cannot be captured in full by quantitative measures. More in-depth qualitative studies are needed to explore how these concepts manifest themselves in people's daily lives. There is also a need to include more items in the measures of the thinking strategies in future quantitative studies to capture broader dimensions of these concepts. To conclude, this is only a first step towards investigating different ways of thinking about the complexity and ambivalence in relation to climate-friendly behaviors such as appropriate food choices.

Regarding practical implications of this study, one can argue that because the pilot study shows that positive thinking, consisting foremost of a form of dialectical thinking, is something positive for climate-friendly food choices, it is vital to ask how one can promote this way of thinking? As we mentioned before, dialectical thinking can be seen as a form of postformal thinking that could develop and be supported among emerging adults, for example, at the end of senior high school and in a higher education context (Labouvie-Vief, 2006). Research indicates that problem-based learning, where students get the opportunity to work with and discuss real-world problems, is beneficial for developing postformal thinking (Wynn, Ray, & Liu, 2019). In this regard, it is interesting that researchers in the field of education for sustainable development, including climate-change education, argue that problem-based learning is a way that can improve students' ability to deal with and take on responsibility regarding complex sustainability problems (Tassone, O'Mahony, McKenna, Eppink, & Wals, 2018). Furthermore, experimental studies have shown that dialectical thinking can be improved among university students through a debate approach to education that includes structured instructions (Li, Han, Fu, Mei, & Liu, 2019). In the case of climate-friendly behaviors and dealing with ambivalence, we conclude that it is vital to discuss different thinking patterns critically and challenge them with more positive thinking patterns. In this regard, emerging adulthood is an ideal age period.

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