

THE RELATIONSHIP BETWEEN CULTURAL THOUGHT STYLES  
AND POLITICAL IDEOLOGY  
VIEWED THROUGH MULTIPLE ASPECTS OF HOLISM

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AND POLITICAL IDEOLOGY:  
VIEWED THROUGH MULTIPLE ASPECTS OF HOLISM

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## DECLARATION OF ORIGINALITY

I, Rya Su Őencan, certify that

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## ABSTRACT

### The Relationship Between Cultural Thought Styles and Political Ideology Viewed Through Multiple Aspects of Holism

Holistic thinkers are found to be socially more conservative, relying on the Triad Task as the measure of holism. However, holism is defined in the literature as a multifaceted construct and there are reasons to believe that some (*dialectical*) aspects of holism—expectation of change and tolerance of contradictions—might be differently related to political ideology. Moreover, the overlaps between reflective thinking and what the Triad Task measures makes the interpretation of the Triad-conservatism relation difficult. This thesis aimed to investigate the relationship between political ideology and holism focusing on its multiple aspects and to examine the mechanisms underlying this relation. Study 1 did not replicate the Triad-conservatism relation, but Study 2 did with a larger sample and methodological improvements. The evidence with respect to dialecticism was rather complex; while Study 1 found a negative relation between dialecticism and social conservatism, Study 2 did not replicate this finding. On the other hand, both studies revealed that dialectical thinkers are economically more liberal. Furthermore, the two studies did not provide evidence for a relationship between the Triad Task and the AHS (a self-report measure of holism); and Study 2 revealed that reflective thinking (but not the AHS) predicted Triad Task responses. Overall, the results contributed both to political psychology literature by a detailed examination of political orientation (both social and economic) with respect to cultural thought styles, and to cross-cultural psychology literature by shedding light on the looseness of the concept *holism*.

## ÖZET

### Kültürel Düşünce Stilleri ile Siyasi İdeoloji Arasındaki İlişki

#### Holizmin Çok Yönlü Yapısından Bir Bakış

Önceki çalışmalarda, holistik düşüncenin sosyal muhafazakarlık ile pozitif ilişkili olduğu gösterilmiştir. Bu çalışmalarda holizm Üçlü Kategorizasyon Testi (ÜKT) ile ölçülmüştür. Ancak, holizm literatürde çok yönlü bir kavram olarak tanımlanmıştır. Holizmin bazı (*diyalektik*) yönlerinin—değişim beklentisi ve çelişkiye tahammül— siyasi ideolojiyle farklı şekilde ilişkili olması beklenebilir. Ayrıca, reflektif düşünce ile ÜKT'nin ölçtüğü süreçler arasındaki örtüşmeler, bu test ile operasyonelize edilen holizm ve siyasi ideoloji arasında gözlemlenen ilişkinin yorumlanmasını güçleştirmektedir. Bu tez, holizm ve muhafazakarlık arasındaki ilişkiyi, holizmin çeşitli yönlerine odaklanarak irdelemeyi ve bu ilişkinin altında yatan mekanizmaları araştırmayı amaçlamıştır. 1. Çalışmada ÜKT ile sosyal muhafazakarlık arasındaki ilişki tekrarlanmazken, 2. Çalışmada bu ilişki daha büyük bir örneklem ve metodolojik iyileştirmelerle tekrarlandı. Diyalektik düşünceye dair bulgular daha karmaşıktı; 1. Çalışma diyalektisizm ve sosyal muhafazakarlık arasında negatif bir ilişki gösterirken, 2. Çalışma bu bulguyu tekrarlamadı. Öte yandan, her iki çalışma da diyalektik düşünenlerin ekonomik olarak daha sol görüşlü olduğunu ortaya koydu. Dahası, iki çalışmada da ÜKT ile AHS (holizmin bir öz-bildirim ölçeği) arasında ilişki gözlemlenmedi; üstelik 2. Çalışma, AHS'nin aksine reflektif düşüncenin ÜKT'deki yanıt stilini yordadığını ortaya koydu. Sonuçlar, kültürel düşünce stilleri ile siyasi ideoloji arasındaki ilişkiyi ayrıntılı bir şekilde incelemesiyle politik psikoloji literatürüne, holistik düşünce stiline dair kavramsal ve metodolojik sorunlara ışık tutmasıyla kültürlerarası psikoloji literatürüne katkıda bulunmuştur.

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## CHAPTER 1

### INTRODUCTION

Research on political ideologies, especially on conservatism, has a long-lasting history in the psychology literature (for a historical review, see McGuire, 1993). The cognitive, affective, and personality variables differentiating conservatives and liberals are—and presumably will continue to be—the focus of research attention for social and political psychologists. More recently, the advent and prominence of the research motivated by the dual process model of the mind (e.g., Evans, 2003) and the research on cultural thought styles (e.g., (Nisbett et al., 2001) paved the way for the study of political ideology with respect to cognitive styles to become yet more popular and prevalent. These two literatures focus on cognitive style as their subject matter from different theoretical perspectives and research traditions. Analytic thinking—both as defined in the dual process model of the mind (Deppe et al., 2015) and as characterised as the opposite of holistic thinking in the cross-cultural literature (Talhelm et al., 2015)—is found to be positively related to social liberalism.

These results on the relationship between political ideology and cognitive style might lead naive readers to interpret these findings as converging evidence and to conclude that the term *analytic thinking* has been used synonymously in these distinct literatures. As a matter of fact, even in psychology literature, there has been a tacit assumption associating analytic thinking (vs. holistic thinking) with reflection (vs. intuition)—which might also result from the traditional usage of the term *holistic* in relation to intuition (Glatzeder, 2011; Pretz, 2011; Yama, 2018). However, there exist no scientific evidence supporting this view. In fact, these are thought to be distinct meanings of the term *analytic* (Buchtel & Norenzayan, 2009). The use of the

term *analytic* as opposed to intuitive on one hand (i.e., dual process model of the mind) and as opposed to holistic on the other (i.e., cultural thought styles literature) is a source of potential confusion. In this thesis, we will refer to the former meaning of analytic as *reflective* while retaining the word *analytic* to refer to the opposite of holistic thought. The main focus of this thesis is the latter sense of analytic thought.

Studies in this thesis aim to investigate the relationship between political ideology and cognitive style as conceptualized in the cross-cultural literature. Beyond this political emphasis, the present thesis especially emphasizes a proper conceptualization (and lack thereof) of holistic thinking. To achieve this end, we highlight some weaknesses in the measurement of holistic thinking—with a particular emphasis on the Triad Task, which is a key operationalization of holistic thinking in previous studies on holism-politics relation (Talhelm, 2018; Talhelm et al., 2015). Alternative explanations of this relationship based on the Triad Task were discussed with reference to dual-process model of the mind. A further aim of this thesis is to explore potential underlying mechanisms for the relation between cultural thought styles and political ideology.

### 1.1 Political ideology: Social and economic

Before looking at the relationship between political orientation and cultural thought styles, it is important to differentiate attitudes with regard to social and economic issues. Both the theory and empirical work to date set forth that there exists a two-dimensional structure underlying individual differences in political ideologies: Right-wing authoritarianism (RWA; Altemeyer, 1981) characterized by a tendency to conform to social norms, to submit authorities, and to rage against the ones who break this order (Altemeyer, 1998), and social dominance orientation (SDO; Pratto et

al., 1994) implying an acceptance of inequalities, support for hierarchical social order and intergroup dominance. Previous research revealed that conservatism in socio-political domains (e.g. support for traditional gender roles, stiffer sentences, opposition to abortion, use of recreational drugs) can be better understood by ideological affinity to RWA, whereas conservatism with respect to economic issues (e.g. opposition to governmental interventions in economy, social state, support for privatization) seem to be related to SDO (Duckitt, 2001; Duriez et al., 2005). In parallel to this, prior research conducted in Turkish samples showed that resistance to change (or support for tradition corresponding to RWA; Federico et al., 2014) and opposition to equality (corresponding to SDO; Federico et al., 2014) were found to be better predictors of social and economic conservatism respectively (Saribay & Yilmaz, 2018).

In addition to these differences in ideological motives behind the political attitudes in social and economic domains, cognitive style variables were also previously found to be differentially related to social and economic conservatism (see sections 1.3 and 1.5). Therefore, we separately investigated social and economic conservatism throughout this thesis.

## 1.2 Dual process model of the mind

The dual process model of the mind claims that underlying human reasoning there exist two types of thinking which are products of distinct but interacting cognitive systems (Evans, 2003). Type 1 processes are independent of working memory capacity and autonomous, whereas Type 2 processes necessitate working memory and involve cognitive decoupling.

Besides these defining characteristics, these two types of thinking were attributed some secondary (correlated) features which have been incorporated in their definitions—because they have been generally observed together in traditional paradigms examining them. Accordingly, Type 1 processes are thought to be evolutionarily older, relatively automatic, slow to learn patterns in the environment but fast to respond to stimuli, contextualized, and associative. Type 2 processes, on the other hand, are recently evolved, relatively effortful, fast to learn environmental input but slow to respond to stimuli, abstract, rule-based, and can interfere with and override the outcomes of Type 1 processes. Type 1 and Type 2 processes are referred as intuitive and reflective thinking respectively (Evans & Stanovich, 2013).

### 1.3 Types of thinking and political ideology

Recent research suggests that the two types of thinking are related to political ideology. Reflective thinking is found to be linked to social liberalism both in correlational studies (Deppe et al., 2015; Pennycook & Rand, 2018; Yılmaz & Sarıbay, 2016) and in studies using experimental manipulation (Yılmaz & Sarıbay, 2017a) such that training people to think reflectively (through the Cognitive Reflection Test [CRT; (Frederick, 2005)]) lead them to form more liberal political opinions<sup>1</sup>. Likewise, intuitive thinking is found to be linked to social conservatism correlationally (Pennycook et al., 2012), and experimentally inducing low-effort thought appears to make people more conservative (Eidelman et al., 2012); but see Sarıbay et al., 2020, for a high-powered replication whose results did not converge with Eidelman et al., 2012). In contrast with these findings, Kahan (2012) found that reflective thinking measured by the CRT was not related to political orientation.

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<sup>1</sup>Although this effect was observed only for contextualized opinions but not for stable political ideology.

However, a comprehensive evaluation of all studies investigating social conservatism and reflective cognitive style suggests that there exist a negative—albeit small—relationship between them (Jost, 2017).

In case of economic conservatism, previous research revealed a lack of consistent relationship with analytic cognitive style and related cognitive variables such as need for cognitive closure (Crowson, 2009; S. Adil Saribay & Yilmaz, 2017; Sidanius, 1978; Yilmaz & Saribay, 2017; Yilmaz & Saribay, 2016, 2017).

#### 1.4 Cultural thought styles

Cross-cultural psychology literature have been also investigating cognitive styles for decades, but from a different lens (Nisbett et al., 2001). In this literature, thinking styles are evoked to characterize differences between Western and Eastern cognition on a variety of domain (Yap et al., 2018). Accordingly, Westerners tend to think more analytically, decontextualizing the object or the issue at hand and paying attention to the details whereas Easterners tend to think more holistically, processing the object or the issue as embedded in its context and paying relatively more attention to the whole (Nisbett & Miyamoto, 2005). There are studies showing that the *context* is actually far beyond that of the perceptual scenes. Holistic thinkers are found to be more prone to belief bias (Norenzayan et al., 2002), have a greater tendency to take into consideration distal causes when evaluating an event (Choi et al., 2003), and be less likely to make fundamental attribution error (Masuda & Kitayama, 2004) compared to analytic thinkers. In the literature, all these results are interpreted as instances where holism led to greater emphasis on the context<sup>2</sup>.

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<sup>2</sup> However, we cannot be definitive that attention to context (or field/background) is what ties these kinds of results together. The definition of “context,” outside of perceptual scenes, may still be somewhat loose in this line of work.

People from different cultures are also found to differ in their expectation of change and tolerance of contradiction. Westerners expect stability or if change would occur, they would expect it to be linear; whereas, for Easterners change is constant and cyclical. Moreover, Westerners have low tolerance of contradictions, parallel to *the law of non-contradiction* which is a fundamental tenet of Western thought; whereas Easterners perceive contradictions as inherent to everything in the universe (Peng & Nisbett, 1999). The term *dialectical thinking* or *naïve dialecticism* has been used to describe the pattern of thought characteristic of Eastern cultures. According to this theorizing, dialecticism consists of 3 interrelated pillars: interconnectedness (defined above as holistic thinking), expectation of change, and tolerance of contradiction (Spencer-Rodgers et al., 2018). However, holistic thinking (or briefly *holism*) has been also used interchangeably with *dialecticism* to refer to Eastern thought style (Choi et al., 2007; Peng & Nisbett, 1999; Spencer-Rodgers et al., 2018). This disunity in the terminology and its potential damaging effects are discussed in the section 1.6.

Recently, it was found that these cognitive differences between Western and Eastern cultures also apply to cultures more narrowly or specifically defined, such as by social class (Knight & Nisbett, 2007), mode of subsistence (Talhelm et al., 2014; Uskul et al., 2008) or religion (Hommel et al., 2011). These results were explained in the literature as a reflection of lifestyle on thinking style. Briefly, different cultures—either in its traditional sense as nationalities or in a more abstract sense as mentioned above—create different affordances which in turn form systematic patterns of being, living, thinking and perceiving for people who are a part of that culture (Cohen & Varnum, 2016; Nisbett et al., 2001). Varnum et al. (2010) advocates for the social orientation hypothesis positing that thinking styles are a result of the social

organization, such that independence and individualism lead people to adapt analytic thinking style while interdependence and collectivism lead to holism. Hence, members of the social groups that involve more close social bonds are expected to have a tendency to think more holistically (Morgan et al., 2018; Nisbett et al., 2001).

### 1.5 Cultural thought styles and political ideology

Some researchers asserted that political ideologies can also be thought of as a kind of culture (Austin, 1977; Cohen & Varnum, 2016; Malka, 2014). Parallel to this, previous research investigated whether people from differing political ideologies might tend to favor different thinking styles as people from different cultures do (Talhelm, 2018; Talhelm et al., 2015). Indeed, results of these studies showed that while social liberals tend to think more analytically, social conservatives think more holistically. Furthermore, experimentally activated analytic thinking style was found to promote the formation of more liberal opinions towards socio-political issues whereas holistic thinking style activation promoted conservative opinions (Talhelm, 2018; Talhelm et al., 2015). In contrast, economic conservatism was either weakly correlated or unrelated to cultural thought style (Talhelm, 2018; Talhelm et al., 2015).

### 1.6 Conceptualizing *holism*

For the purpose of the present study—that is to examine the relation of analytic/holistic thinking style to political ideology—it is crucial to acknowledge problems with the conceptualization of holism. First of all, some researchers define naïve dialecticism as a part of holistic thinking (Choi et al., 2007), others as a broader term containing holism (Peng & Nisbett, 1999). Accordingly, there is a

conceptual confusion in the literature, which we believe is partly responsible for methodological problems such as the tendency to claim that one is measuring holistic thinking while measuring only one of the components assumed to be related to it (Spencer-Rodgers et al., 2018).

Spencer-Rodgers et al. (2018) equate *holism* and *interconnectedness*. Based on this conceptualization we will refer to the other two pillars (expectation of change and tolerance of contradiction) as dialecticism, for the sake of brevity, since they can be considered as exclusively dialectic as opposed to interconnectedness (see Figure 1). For practical purposes, we will use *holism* or *holistic thinking* as the umbrella term corresponding to East Asian style of thinking, although we are convinced that it is an oversimplification repeated in the literature. If specific instances related to an emphasis on context and whole-part relations are needed to be referred, the term *interconnectedness* will be utilized.

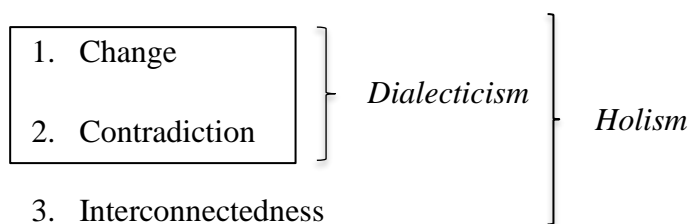


Figure 1. Schematic representation of the conceptualization of *dialectic* and *holism* used in this thesis.

Besides the confusions connected to the use of interchangeable terms, it is also important to note that this literature generally lacks the necessary caution for the transition from one level of analysis to the other. Analytic/holistic distinction has been predominantly studied in cross-cultural literature. Consequently, thinking styles

were dichotomized in a way representing cognitive differences of two very distinct cultures (namely East Asian and North American) on a range of loosely related tasks. This approach might be reasonable in the context of cross-cultural studies as thinking styles are thought to be a result of a lasting cultural tradition which is constantly shaping and being shaped by the people comprising it (Markus & Kitayama, 2010). Thus, holism was defined as an overarching term constituted from interrelated components (interconnectedness, expectation of change, and tolerance of contradictions) which were combined as a package suitably with perennial aspects of a culture such as the fundamental Eastern philosophy and lifestyle. Therefore, it might be the case that the characteristics which seem loosely connected could actually be activated in concert for people belonging to the particular culture with which the characteristics in question are related to. The dynamic constructivist approach proposed by Hong et al. (2000) supports this view by providing evidence that when primed with American (East Asian) culture people tend to think more analytically (holistically) on a subsequent irrelevant task.

However, those very same characteristics used together to define the concept of *holism* at the cultural level might be operating differently at the individual level. Indeed, previous research showed that the measures of thinking styles, which correlate at the cultural level, were not correlated with each other as individual difference variables (Na et al., 2010). Thus, thinking about holism as an umbrella term might not be the most suitable approach to study individual differences in thinking styles, especially outside of the cultures where analytic/holistic thinking styles were conceptualized. To illustrate, there is no strong reason to assume that interconnectedness and tolerance of contradictions would be correlated at the individual level, although they are collocated with respect to cultural differences in

cognition under the umbrella of what is called *holism*. Therefore, it might be fallacious to assert that holistic thinking and any variable of interest are related at the individual level; the story can easily change if one changes the way in which holism is measured.

### 1.7 The Triad Task and the analytic/holistic and reflective/intuitive distinction

Both the correlational and experimental findings regarding the holism-politics relation relied on the Triad Categorization Task (Triad Task; Ji et al., 2004) in which people are asked to choose either a taxonomic or thematic pairing among three items (e.g., monkey, panda, banana) as the measure and manipulation of holistic thinking style<sup>3</sup>. Although Talhelm et al. (2015) included an alternative measure for cognitive style (The Frame-Line-Task which is a measure of field-dependence [FLT, Kitayama et al., 2003]), because the relationship between this measure and political orientation was not significant, they continued with the Triad Task. Similarly, though their meta-analysis revealed a moderate relationship between field-dependence and sociocultural ideologies, Van Hiel et al. (2010) alerted the readers that there exists a limited number of studies on this issue and the detected relationship might be possibly a result of publication bias. Thus, the only finding which firmly implies a relationship between holism and conservatism was based on the Triad Task.

As summarized in the section 1.6, holism has been used as an umbrella term referring to multiple components (Choi et al., 2007; Peng & Nisbett, 1999; Spencer-

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<sup>3</sup> Thematic pairings on this task are thought to require contextualization of the stimuli so that the relationship between monkey and banana could be detected. As Eastern style of thinking tends to perceive all individual entities as embedded in a broader context, emphasizing their relationships with each other, this pattern of pairing was associated with holistic thinking in previous literature. On the other hand, taxonomic pairings are thought to depend on abstract reasoning in order to discern that monkey and panda are exemplars of the same superordinate category (i.e., mammals) as implied by the principles of biological classification. Decontextualization, abstraction, and rule-based reasoning are deemed to be characteristics of Western style of thinking; hence, taxonomic pairings on the Triad Task are assumed to be related to analytic thinking.

Rodgers et al., 2018) and we know of no research that makes it clear which aspect of holism the Triad Task captures, if any. What the Triad Task objectively measures is people's categorization patterns—whether they rely on taxonomic categories or thematic relations while categorizing—which seems like a derivative aspect of holistic thinking rather than a central one. Similarly, Spencer-Rodgers et al., (2018) propounded that different styles of categorization of Westerners and Easterners (along with differences in causal attribution style and field-dependence/independence) are a function of the interconnectedness pillar (i.e., paying attention to contextual information, relationships between entities and whole-part relations) of holism. Hence, thematic categorization is not viewed as a foundational property of Eastern thought. Consequently, even if we were convinced that the Triad Task properly measures *some* component of analytic/holistic thinking, it would be still questionable to draw conclusions about holistic thinking as a whole based on the scores obtained on this task.

One could further argue that it is unclear whether the Triad Task is a measure of analytic/holistic thinking or of reflective/intuitive thinking (or a mixture of these). The Triad Task overlaps with reflective thinking tasks in some ways. More specifically, taxonomic responding on the Triad Task might correlate with Type 2 processes as it requires abstract, rule-based reasoning; whereas thematic responding might go hand in hand with Type 1 processes as it involves associative and contextualized thinking. Therefore, it is not clear that the Triad Task is a valid measure of analytic/holistic thinking styles independent of reflective thinking. In this vein, the parallelism between taxonomic responding on the Triad Task and reflective thinking is previously put forward in the literature. Morgan et al., (2018) suggested that the CRT—a commonly used reflective thinking measure—and the Triad Task

might be tapping on similar constructs as they are found to be related to political ideology (Deppe et al., 2015; Talhelm et al., 2015; Yılmaz & Sarıbay, 2016) and also to religious belief in the same way (Pennycook et al., 2012; Wood & Morgan, unpublished [as cited in Morgan et al., 2018]).

Departing from this reasoning, one might reach to two different interpretations. First, the Triad Task can be treated as more of a measure of reflective/intuitive thinking than it is of analytic/holistic thinking and the results obtained via this task would be attributed to differences in reflective/intuitive thinking tendency. So, the detected relationships between response style on the Triad Task and political attitudes (Talhelm, 2018; Talhelm et al., 2015) and religiosity (Morgan et al., 2018) can be interpreted as supporting evidence for previously observed relationships between reflective thinking and liberalism (Deppe et al., 2015; Yılmaz & Sarıbay, 2016) and disbelief in god (Pennycook et al., 2012)<sup>4</sup>. Second, it can lead to an association between reflective and analytic, and intuitive and holistic thinking. In other words, one possible interpretation of the similarity between the Triad Task and the CRT could make the distinction between reflective/intuitive and analytic/holistic thinking blurred, which is already a common misconception in the literature (Buchtel & Norenzayan, 2009; Evans & Stanovich, 2013).

Reflective and analytic thinking are actually quite separate cognitive constructs. *Types* of thinking and *modes* of thinking should be distinguished (Evans, 2009). Intuitive and reflective thinking are defined as types of thinking (Type 1 and Type 2) whereas analytic and holistic thinking are conceptualized as modes of

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<sup>4</sup> Even though Talhelm et al. (2015) demonstrated that the relationship between the Triad Task scores and social conservatism holds after controlling for scores on the CRT, statistical control—also based on a single measure—might not be sufficient to eliminate this alternative explanation.

thought. These modes are thought to be regulated by Type 2 processes; in other words, these are various ways in which people utilize reflective thinking (Evans & Stanovich, 2013). Parallel with this view, there is a critical divergence between the Triad Task and the CRT: Performance on the CRT is dependent on the *ability* of reflection to override intuitions whereas the Triad Task requires participants to make a *choice* (Morgan et al., 2018). In other words, there are right and wrong answers on the CRT while in the Triad Task responses simply reflect participants' preferences. That is to say, participants can choose to thematically respond to the Triad Task, while also engaging in reflective thought.

Buchtel and Norenzayan (2009) also argued that both analytic and holistic thinking might become automatic and effortless or conscious and effortful. Hence, analytic thinking style might involve Type 1 processing for some people (possibly Westerners since it is their culturally favored style of thinking) in some situations, whereas holistic thinking might require Type 2 processing, which contradicts with the above-mentioned misconception. Likewise, previous research in cognitive neuroscience demonstrated that tasks which are culturally unconventional demand more attentional regulation (Hedden et al., 2008). More specifically, higher prefrontal activity was observed when Westerners (Easterners) are engaged in the relative (absolute) trials of the Frame-Line-Task, compared to the absolute (relative) trials<sup>5</sup>. Therefore, it might be theoretically interesting for the field to investigate the situations in which thinking holistically requires more Type 2 processing. To this

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<sup>5</sup> In this task, participants are asked to reproduce a line which is embedded in a square. In the relative condition, they are instructed to pay attention to the proportion of the line with respect to the square while in the absolute condition they are asked to ignore the relative sizes and focus only to the size of the line. Analytic (holistic) thinkers are found to perform better in absolute (relative) condition of this task as they are used to decontextualize (contextualize) what they see (Kitayama et al., 2003). Hedden et al. (2008) used a simpler version of the task which requires participants to make *match/nonmatch* judgments regarding either the absolute or the relative size of the lines they are subsequently exposed to, instead of reproducing the lines.

end, discovering domains where analytic and reflective thinking are expected to collide would be fruitful and political ideology might be such a domain.

### 1.8 A different approach to holism-political ideology relation

If one considers all the components of holism as it is defined in the cross-cultural literature, it is clear that some of them—*dialecticism* in particular—actually seem more congruent with some of the other cognitive variables amply studied in relation to political ideology, namely (lower) need for cognitive closure, cognitive complexity, and tolerance for ambiguity (Jost et al., 2003). For example, people high in need for cognitive closure seek to reach conclusions as quickly as possible and when they do they cling onto this conclusion by avoiding any challenging information (Kruglanski & Webster, 1996), which sounds quite the opposite of the style of processing of a dialectical thinker. Since the reality, as they perceive, is in a constant flux and every entity contains opposing elements (Peng & Nisbett, 1999), dialectical thinkers would anticipate themselves and other dialectical thinkers to hold conflicting opinions. Cognitive complexity, whose key components are being able to identify multiple aspects of a problem and to integrate those (Tetlock, 1983), seems also in line with dialectical thinking and complex causal attribution styles characteristic of holistic thinkers (Choi et al., 2003; Maddux & Yuki, 2006). Tolerance for ambiguity seems also more compatible with dialectical thinkers' attitudes towards contradictions (Peng & Nisbett, 1999). In sum, there appears to be a general affinity between dialectical thinking and higher cognitive complexity, greater tolerance for ambiguity, and lower need for cognitive closure. Importantly, these three characteristics are related more to liberalism than conservatism (Jost et al., 2003).

All in all, to be able to arrive at the conclusion that holistic thinkers tend to be more conservative (or to have any other kind of characteristic) one should operationalize holism with a focus on its multiple distinct components and test a specific hypothesis across these different conceptualizations. No study we know of does this. Previously observed positive relationship between social conservatism and holistic thinking (based on the Triad Task) seems incompatible with the presumptive relationship between dialectical thinking and the above-mentioned cognitive variables (i.e., cognitive complexity, tolerance for ambiguity, and [lower] need for cognitive closure). If one conceptualizes holistic thinking with a focus on its dialectical components, one could expect a *negative* relationship between holism and conservatism, which is the reverse of the pattern found in previous research (Talhelm, 2018; Talhelm et al., 2015).

### 1.9 The present research

Studies in this thesis were driven by the reasoning that the relationship between political ideology and cultural thought style might depend on how holism is conceptualized and measured. From this perspective, in the case of Talhelm et al's (2015) study, the observed relationship between cognitive style and political ideology might have spuriously resulted from the overlapping characteristics of reflective thinking and what the Triad Task measures, as argued above. It might be expected that the relationship would be reversed if cultural thought style had been operationalized differently. Therefore, the aim of the current studies was to first replicate the previous findings (Talhelm, 2018; Talhelm et al., 2015) on a Turkish sample and then to investigate this relationship with a focus on the dialectical aspects of holistic thinking, namely Expectation of Change and Tolerance of Contradiction.

Furthermore, we aimed at investigating underlying mechanisms of these differential relations. In two studies, we tried to answer whether the detected relationship between thematic responding on the Triad Task and political ideology should be attributed to *holism* as a broad construct or to reflective thinking tendency. We also examined the role of need for cognitive closure (Study 1) and ambiguity tolerance (Study 2) in explaining the predicted relationship between dialecticism and social conservatism. In Study 2, we predicted that collectivism would explain the relationship between dialecticism and economic conservatism.

Present research is important in that it intends to question the existing practices in this line of research and rashful (potentially inaccurate) inferences drawn based on these. For this reason, as a first step, attempts to revise measurement instruments were made based on pilot studies. Parallel to measurement issues, conceptual weaknesses regarding to cultural thought styles were discussed. Results of these studies are expected to contribute both to the literature on cultural thought styles—by conceptual clarifications and measurement refinements and by providing insight about the Triad Task which is a commonly used measure of holism—and to the literature on political psychology—by offering a deeper understanding of the relationship between political ideology and cognitive styles. Moreover, studying these issues in Turkey were thought to be beneficial to broaden our understanding of the present issues beyond Western samples.

## CHAPTER 2

### STUDY 1

The pre-registration for this study is available at <https://osf.io/6c54y>.

#### 2.1 Hypotheses

Preregistered hypotheses for Study 1 are listed below:

H1: Thematic responding on the Triad Task will be positively related to social conservatism as in the previous studies (Talhelm, 2018; Talhelm et al., 2015).

H2: If taxonomic categorization on the Triad Task is positively related to Type 2 processes as argued above, the relationship between taxonomic responding and social conservatism can be accounted for by the engagement of Type 2 processes, but not by cultural thought style in its broader sense measured by the Analysis-Holism Scale (AHS; Choi et al., 2007).

H3: Dialecticism (i.e., Tolerance of Contradiction and Expectation of Change) will be negatively related to social conservatism.

H4: No relationship is expected between cultural thought styles and economic conservatism, in line with previous research (Talhelm, 2018; Talhelm et al., 2015)

H5: The need for cognitive closure will account for a significant amount of the variance in the negative relationship between social conservatism and dialecticism<sup>6</sup>. That is to say, when the need for cognitive closure increases, dialecticism decreases, and social conservatism decreases.

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<sup>6</sup> At the time of preregistration, we intended to conduct a mediational analysis to test this hypothesis. However, this kind of analysis is not suitable for a correlational design (Fiedler et al., 2011). Therefore, this hypothesis is analyzed with a hierarchical regression by examining how much variance

In addition to these, another purpose of this research was to develop a preference-based measure for dialecticism for use in future studies, as an alternative to the self-report format of the AHS. The reason we need this type of an alternative measure is (1) to be able to eliminate potential problems resulting from the use of self-report measures, (2) to have a measure with an emphasis on dialecticism which is more comparable to the Triad Task than a self-report measure, and (3) to be able to manipulate dialecticism in future studies as Talhelm did with the Triad Task (Talhelm, 2018; Talhelm et al., 2015)<sup>7</sup>. Based on a measure created by Peng and Nisbett (1999) and modified by Friedman et al. (2006), we composed two sets of proverbs, one dialectical and the other non-dialectical. Below are the hypotheses based on this Proverb Task.

H6: Dialecticism as measured by the Proverb Task will be positively correlated with holistic thinking scores on the AHS.

H7: Dialecticism as measured by the Proverb Task will be negatively correlated with social conservatism.

## 2.2 Method

### 2.2.1 Statistical power analysis and participants

We calculated the average effect size from previous studies testing the relation between cultural thought style and political ideology (Studies 1-3 in Talhelm et al.,

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in the relationship between cognitive style and social conservatism was accounted for by each mediator.

<sup>7</sup> Some of the measures (focusing particularly on contradiction and change) used in the literature was examined in a pilot study (N = 153). Results showed that the task assessing people's expectations of the likelihood of opposite events (used by Ji et al., 2001) was not related to holism scores measured by the AHS ( $r = -.06$ ,  $p = .47$  for the whole scale,  $r = -.03$ ,  $p = .74$  for the Change subscale). The task assessing differential approaches toward contradiction (adapted from Peng & Nisbett, 1999; Zhang et al., 2015) was related to AHS in the opposite direction than expected ( $r = -.13$ ,  $p = .02$  for the whole scale, and  $r = -.21$ ,  $p = .01$  for the Contradiction subscale). Therefore, the present set of studies aimed at developing a measure specifically assessing Contradiction and Change components of holism, which is reliable and valid.

2015; Study 1 in Talhelm, 2018) as  $r = .21$ . We estimated that 284 participants would be necessary to achieve .95 power given this effect size. Data was collected online via the PsyToolKit software (Stoet, 2010, 2017) through a weblink sent to students taking introductory psychology courses in Boğaziçi University. Students were given extra course credit for participation.

To compensate for the potential data loss, we continued to collect data until we reached the desired number of participants who completed the whole survey and correctly answered the attention check question. Since the number of participants who satisfied the criteria could only be seen after downloading and filtering the data, it was hard to know exactly when we met our threshold. We conducted daily checks twice and closed the survey as soon as we judged that we met our sample size goal. This procedure resulted in a total of 317 participants.

Summary for sample characteristics can be seen in Table 1. Participants in Study 1 were young, with only 5% older than 24 years old. The distribution of childhood SES was normal with a thickening at the upper middle range (50% responded as 6 or 7). Based on the single item identification question religiosity was positively skewed, with 55.8% was below the midpoint (31.8% identified themselves as not at all religious) and 31.5% was above the midpoint. Based on the single item identification question for the political orientation, the sample leaned toward liberal (59% was below the midpoint, while only 14.5% was above the midpoint).

Table 1. Sample Demographics for Study 1 and Study 2

Demographic Dimension	Study 1 (N = 317)	Study 2 (N = 743)
Age		
Range	18-38	18-74
Mean (SD)	20.92 (2.29)	25.10 (7.43)
Gender		
Female (%)	199 (63)	471 (63)
Male (%)	115 (36)	263 (35)
Other (%)	3 (1)	9 (1)
Childhood SES		
Range	2-9	1-10
Mean (SD)	5.82 (1.52)	5.65 (1.65)
Hometown Size		
Metropolis (%)	229 (72)	580 (78)
City (%)	62 (20)	135 (18)
Borough (%)	16 (5)	17 (2)
Small town (%)	6 (2)	7 (1)
Village (%)	4 (1)	4 (1)
Ethnicity		
Turkish (%)	271 (85)	639 (86)
Kurdish (%)	13 (4)	31 (4)
Arabic (%)	2 (1)	8 (1)
Caucasian (%)	3 (1)	12 (2)
Balkanic (%)	13 (4)	23 (3)
Other (%)	15 (4)	30 (4)
Religious Affiliation		
Sunni (%)	149 (47)	262 (35)
Atheist (%)	58 (18)	189 (25)
Deist (%)	68 (21)	163 (22)
Alevi (%)	6 (2)	12 (2)
Other Muslim sect (%)	10 (3)	31 (4)
Other (%)	26 (8)	86 (11)
Religiosity (1 = <i>not at all religious</i> , 7 = <i>very religious</i> )		
Mean (SD)	3.18 (1.95)	2.69 (1.80)
Political Orientation (1 = <i>left</i> , 7 = <i>right</i> )		
Mean (SD)	3.31 (1.06)	3.03 (1.06)

*Note.* Values inside parentheses show SDs or percentages as indicated in the first column. Categories constituting a smaller percentage than 1% of the data set were included in ‘Other’ for each variable.

## 2.2.2 Materials

### 2.2.2.1 Cultural thought style

Cultural thought style was assessed by three different measures.

First, a modified version of the original Triad Task (Ji et al., 2004) was used. As opposed to previous researchers' (Talhelm, 2018; Talhelm et al., 2015) choice of using words as stimuli, we used pictures to eliminate confounds based on phoneme similarity and the instances where one word contains its thematic pair<sup>8</sup>. We selected pictures carefully<sup>9</sup> to avoid confounds (e.g., one ordinary exemplar representing each word, with no or very little background information, no strong visual similarity between any pairs, etc.) and standardized those with respect to color and size (all black-and-white and 250\*250 pixels). Stimuli were selected based on two pilot studies (N = 63)<sup>10</sup>. Triads were selected so that (a) both the taxonomic and thematic relations can be recognized by the majority of the people, (b) taxonomically related items do not also connote any thematic relation, and (c) thematically bound items are not perceived as exemplars of the same category in any sense. Based on this pilot studies, 10 test triads and 7 filler triads (in which all items are only taxonomically

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<sup>8</sup> For example, the words “fire” and “extinguisher” in Turkish language share the word “fire” (*yangın* and *yangın söndürücü*).

<sup>9</sup> We examined available versions of the Triad Task using images. In none of them were the images used standardized. We deemed this situation suboptimal. For instance, a closer color and style match between the image used as the target and either the thematic or taxonomic choice image could bias participants responses. For example, in some of the triads the target and taxonomic choice match more closely than the target and thematic choice, and vice versa. Thus, a pilot study was conducted in order to create a better standardized version of the Triad Task.

<sup>10</sup> Each pilot study contained one open-ended and one Likert-type question for each triad. Two open-ended questions asked participants to identify a common category for taxonomically related pairings and to indicate how the thematically related pairs are associated with each other. Two Likert-type questions asked participants to rate the extent to which thematically related pairings complement each other (“*How much do the monkey and the banana complement each other?*”) on a 3-point scale and the extent to which each item was a member of a common category—whose labels were determined by our research team—describing the taxonomic relationships between pairs (“*To what extent is the banana an animal?*”) on a 5-point scale.

related) were selected (see Appendix A for the pictures). In the actual study, participants were presented with one target item (on the upper-middle region of the screen) and two other items (one taxonomically and the other thematically linked to the target, appearing on the right and left lower regions) and asked to choose the one which is more congruent with the target item. Triads appeared in a random order and the location of the thematic and taxonomic items on the screen (left versus right) was counterbalanced. Taxonomic pairings are associated with analytic thinking style and relational pairings with holistic thinking style. Holism score to be used in correlational analyses was computed by subtracting the number of taxonomic responses from the number of thematic responses.

Second, a Proverb Task (Peng & Nisbett, 1999) was used to assess preferences for dialectical versus non-dialectical proverbs. Two research assistants independently selected proverbs from those used by Peng and Nisbett (1999) and Friedman et al. (2006) as well as additional Turkish proverbs. The selection criterion was that each proverb either emphasize dialecticism or its opposite. This preselection resulted in 42 proverbs (21 dialectical). A pilot test with convenience sampling (N = 45) was conducted to assure that dialectical and non-dialectical proverb sets do not differ in terms of familiarity, frequency of use, and poeticity as Friedman et al. (2006) demonstrated that these properties might influence preference judgments<sup>11</sup>. 16 proverbs (8 dialectical) were selected (see Appendix B) so that the mean ratings of familiarity, frequency, and poeticity would be as close as possible in the dialectical

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<sup>11</sup> Friedman et al. (2006) also included *wisdom* judgments, but we thought that these are a part of what we are trying to measure; that is to say, evaluating a dialectical proverb as wiser than a non-dialectical proverb does indicate a higher tendency to think dialectically. So, we did not include wisdom judgments as control variables.

and non-dialectical proverb sets<sup>12</sup>. Examples for the proverbs are “*White sheep may breed black lamb, too*” for the dialectical set and “*The one who plants barley does not harvest wheat*” for the non-dialectical set. Participants were asked to rate how much they like each proverb on a 7-point scale. We assumed that liking ratings for the dialectical proverbs would reflect participants’ tendency to think dialectically. Hypotheses based on the Proverb Task were analyzed via partial correlation between liking ratings of dialectical proverbs and a target variable, controlling for liking ratings of non-dialectical proverbs.

Third, we administered a modified version of the self-report questionnaire measuring analytic/holistic thinking style—the Analysis-Holism Scale (AHS) developed by Choi et al. (2007). The AHS consists of four subscales (Causality, Attitude toward Contradiction, Perception of Change and Locus of Attention). Responses are given on a 7-point Likert-type scale (1 = completely disagree, 7 = completely agree). We modified this scale by including some additional items based on a pilot study with a convenience sample of undergraduate students (N = 153) in exchange for course credit. The modification most crucially related to our research goals was on attitude towards contradiction subscale<sup>13</sup>. Items in this subscale emphasized a midway approach (which appears to be a consequence of Easterners’ perception of contradictions; Koo et al., 2018) rather than the tendency to embrace

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<sup>12</sup> This was achieved by matching each dialectical proverb with a non-dialectical proverb in a way that the sum of the absolute values of differences in mean ratings of familiarity, frequency, and poeticity would be the smallest. Then, among these 21 pairs of proverbs, eight pairs with the smallest absolute value of difference were selected. Results of the paired sample t-tests showed that dialectical and non-dialectical proverb sets did not differ in terms of their familiarity ( $t(43) = -.42, p = .67$ ), frequency ( $t(43) = -.25, p = .81$ ), and poeticity ( $t(43) = -.36, p = .72$ ).

<sup>13</sup> In previous studies using the AHS, reliability coefficients—especially on the subscale level—were lower than desired (Cronbach’s  $\alpha$ s ranged from .56 to .71 for the four subscales in the original study in which Choi et al. [2007] introduced the scale). For this reason, along with the new Contradiction subscale we created, we wrote more items for each subscale (2 for each) with the logical-content strategy, modeling the original items. Based on the pilot study, some of those items (the ones that decreased the Cronbach’s  $\alpha$ s for their corresponding subscale and that had low item-total correlations [ $<.20$ ]) were excluded.

contradictions (e.g. “*It is desirable to be in harmony, rather than in discord, with others of different opinions than one’s own.*”). We constructed new items focusing on the tolerance of contradictions (e.g., “*Everything in the universe may contain opposite characteristics*”) which we thought to be an important dimension of dialecticism. The final version consists of 33 items (see Appendix C), with two differently conceptualized subscales for attitude towards contradictions (7 items in Causality, 7 in Expectation of Change, 8 in Locus of Attention, 6 in Midway Approach toward Contradictions, and 5 in Tolerance of Contradictions).

#### 2.2.2.2 Reflective thinking

Previous studies on the same issue (Talhelm, 2018; Talhelm et al., 2015) used the Cognitive Reflection Test (CRT) in order to control for intelligence, as it was previously found to be correlated with some indicators of IQ (Frederick, 2005). However, it is probably not the best strategy as cognitive reflection differs from cognitive abilities despite their conceptual overlaps (Moritz et al., 2013; Toplak et al., 2011). Therefore, the CRT-I and CRT-II (Thomson & Oppenheimer, 2016; see Appendix D) was included in the current study, not for the same purposes but rather to examine its relationship with the Triad Task and to test whether it can explain—to some extent—the relationship between thematic responses on the Triad Task and social conservatism.

Analyses concerning reflective thinking were conducted based on the separate scores on the CRT-I (Frederick, 2005) and CRT-II (Thomson & Oppenheimer, 2016), since the two might behave differently (Yılmaz & Sarıbay, 2017b), as well as their combination. The reported results are based on the

combination score unless stated otherwise. According to traditional scoring, reflective thinking score is equal to the number of correct responses. However, since participants leave some questions unanswered and this was thought to have the potential to bias the results (because these missing values were counted as a false response in the traditional scoring), we utilized an alternative scoring—in addition to the traditional one—in which we averaged responses while ignoring missing values. As the substantive conclusions did not change when this alternative average-based scoring was used, we reported the results based on total scores throughout the thesis, unless stated otherwise.

#### 2.2.2.3 Need for cognitive closure

In order to test the presumed relationship between holistic thinking and other cognitive variables studied in the political psychology literature, the shortened version (Roets & Van Hiel, 2011) of the scale of Need for Cognitive Closure (NFCC) originally developed by (Webster & Kruglanski, 1994) was included (see Appendix E). The remaining variables mentioned in the introduction (e.g., cognitive complexity, tolerance of ambiguity) were left out due to concerns about participant fatigue.

#### 2.2.2.4 Political ideology

Political ideology was measured by a single item scale ranging from 1 (*very liberal*) to 7 (*very conservative*).

In addition, a version of the Scale of Social Conservatism—originally created by Henningham (1996) and adapted to Turkish culture by Yılmaz and Sarıbay (2016)—was used to measure stable political opinions on the social dimension (see Appendix F). The scale consists of 14 items each concerning a social issue (legalization of marijuana, gay marriage etc.) to which responses range from -5 (*strongly against*) to +5 (*not against at all*)<sup>14</sup>.

Also, economic conservatism was measured separately from social conservatism in order to replicate previous findings that holistic thinking is related to social but not economic conservatism (Talhelm, 2018; Talhelm et al., 2015). We used the Economic Conservatism Scale (see Appendix G) developed by Yılmaz and Sarıbay (2016), consisting of 16 items on a 7-point scale (1 = completely disagree, 7 = completely agree). Example items are: “*The state should not interfere with economy.*” and “*Incentives for encouraging rich people to invest should be increased.*”<sup>15</sup>

#### 2.2.2.5 Demographics

Information on participants’ gender, age, ethnicity, education, socioeconomic status (SES), hometown size (1 = metropolis, 5 = village), religious affiliation, and religiosity was collected (see Appendix H for the Demographic Form). SES was measured by the MacArthur Scale of Subjective Social Status (Adler et al., 2000) in which participants were asked to indicate the relative place of their family during

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<sup>14</sup> Original labels for the Likert-type scale were reversed as “being against” and “+” seem incongruent and counterintuitive.

<sup>15</sup> “*Schools*” is replaced with “*hospitals*” in the item “*Public schools should be handed over to the private sector because private schools provide higher quality education.*” because this was a real concern for Bogazici University at the time and it could affect the responses.

their childhood in the society on an image of a ladder. Religiosity was measured by a single item asking participants the extent to which they feel themselves religious on a scale of 1 (*not at all religious*) to 7 (*highly religious*).

### 2.2.3 Procedure

Participants were sent a weblink to the survey. The survey consisted of four blocks. After reading the consent form and agreeing to participate, they first completed the two holistic thinking measures—the Triad Task and the Proverb Task. In the second block, they were given the CRT, the AHS, and the NFCC with an attention check question (“Please indicate that you completely disagree with this statement.”) in between. Then, they filled the scales for social and economic conservatism. Items within each scale and measures within the first three blocks were introduced in a random order. Finally, the demographic form and the single item for political orientation were given.

## 2.3 Results

### 2.3.1 Reliability analysis, subscale formation, and factor analysis on the AHS

Since we implemented significant revisions on the AHS, we conducted reliability and factor analyses to compare the new version with the original one before the confirmatory analyses. Cronbach’s  $\alpha$ s for the other scales used in Study 1 and Study 2 can also be seen in Table 2.

Reliability analyses were conducted for the original and revised AHS and its subscales separately. Cronbach’s  $\alpha$ s for the original subscales were .84, .74, .69, and

.75 for Causality, Contradiction, Change, and Locus of Attention. The only problematic item that decreased the reliability and had a smaller than desired corrected item-total correlation (.13) was “*We should consider the situation a person is faced with, as well as his/her personality, in order to understand one’s behavior*” in the Locus of Attention subscale. This item was also problematic in the original study which introduced the scale (Choi et al., 2007) as it loaded more on Change than the Locus of Attention subscale. Thus, it was dropped from further analyses. Cronbach’s  $\alpha$ s for the revised subscales were .86, .75, .70, and .73 respectively. As can be seen, for the first three subscales reliability was improved with the revisions. However, one of the added items (“*A detail which was noticed late can change our whole perspective about an event*”) in the Attention subscale worked in the opposite direction than expected (a corrected item-total correlation of -.18); hence, it was dropped from further analyses. Cronbach’s  $\alpha$  for the revised subscale increased to .79. Reliability of the whole scale also improved with our revisions, from .80 to .83. Therefore, we used the revised versions—both of the whole scale and the subscales—throughout the article.

For the purposes of the present study, a subscale with an emphasis on dialecticism was needed. In order to serve this goal, we first examined correlations between these subscales. Scores on the revised Change subscale were correlated neither with scores on the Midway Approach Towards Contradiction subscale ( $r = -.04, p = .49$ ) nor with scores on the revised Contradiction subscale (combination of the original items and new items emphasizing tolerance of contradictions;  $r = .04, p = .53$ ). Nonetheless, Change scores were positively correlated with the additional items we wrote for the Contradiction subscale,  $r = .12, p = .035, 95\% \text{ CI } [.008, .225]$ . Thus, we combined the revised Change subscale and Tolerance of Contradiction

(newly written items) subscales of the AHS. Cronbach's  $\alpha$  for this new combined subscale was .67. As Tolerance of Contradiction behaves differently than Midway Approach Towards Contradictions, we treated these two sets of items as distinct subscales and separately analyzed their relationship with target variables.

Factor structure of the AHS was analyzed for the original model proposed by (Choi et al., 2007) and the revised model we suggested. The new model included the additional factor (tolerance of contradictions), the additional items we wrote for each subscale, and excluded the one original item mentioned above as problematic. Results of the confirmatory factor analyses showed that the new model was a better fit to the observed data (CFI = .81, TLI = 80, RMSEA = .066, SRMR = .10) compared to the original model (CFI = .76, TLI = 73, RMSEA = .086, SRMR = .12). After applying suggested modifications (only those including covariances between individual items and decreasing the chi-square [ $\chi^2$ ] fit index by at least 10), the model was improved and approached acceptable values (CFI = .86, TLI = 84, RMSEA = .058, SRMR = .097).

Table 2. Reliability Estimates for Scales Used in Study 1 and Study 2

Names of the scales	Study 1 ( $\alpha$ )	Study 2 ( $\alpha$ )
Triad Task	.72	.60
Proverb Sets		
Dialectical	.55	.78
Non-dialectical	.61	.78
AHS		
Causality	.86	.82
Midway	.74	.76
Contradiction	.65	.66
Change	.70	.66
Attention	.79	.75
Total	.83	.79
NFCC	.86	—
MSTAT-II	—	.87
RISC	—	.84
Scale of Social Conservatism	.83	.78
Economic Conservatism Scale	.74	.77

*Note:* AHS: The Analysis-Holism Scale. For the AHS and its subscales, reliability values were reported based on the revised versions. Reliability for the attitudes towards contradictions was reported separately for the original and new scale. Midway = the original subscale for attitudes toward contradictions, emphasizing a midway approach. Contradiction = the subscale composed of the added items, emphasizing tolerance of contradictions. NFCC: The Need for Cognitive Closure Scale. MSTAT-II: The Multiple Stimulus Type Ambiguity Tolerance Scale-II. RISC: The Relational-Interdependent Self-Construal Scale.

### 2.3.2 Confirmatory analyses

H1 was tested using both zero-order correlations and GLM with binomial link as the Triad Task consists of a series of binary responses (Talhelm, 2018; Talhelm et al., 2015), separately for the Scale of Social Conservatism and the single-item identification scale. Holistic thinking measured by the Triad Task was correlated with neither the Scale of Social Conservatism,  $\tau = .05^{16}$ ,  $p = .22$ , 95% bootstrapped

<sup>16</sup> Kendall's tau was preferred over Spearman's rho due to its statistical and interpretational advantages (Gilpin, 1993; Kendall & Gibbons, 1990) for all the non-parametric tests involving the Triad Task and the CRT. None of these results changed when Spearman's rho instead of Kendall's tau was used.

CI [-0.025, 0.124]<sup>17</sup>, nor the single item political orientation question,  $\tau = .45$ ,  $p = .65$ , 95% bootstrapped CI [-0.047, 0.087]). Results of the GLM analysis revealed a similar pattern for social conservatism as in previous research (Talhelm, 2018; Talhelm et al., 2015), such that social conservatism predicted thematic responding on the Triad Task, but with a very small coefficient which was not statistically significant,  $\beta = .03$ ,  $SD = .02$ ,  $p = .067$ ,  $r = .11$ <sup>18</sup> (see Figure 2). This relationship was significant while controlling for the demographics (gender, age, hometown size, childhood SES and religiosity),  $\beta = .05$ ,  $SD = .03$ ,  $p = .025$ ,  $r = .13$ . This was largely due to childhood SES which is positively correlated with the Triad Task ( $r(315) = .13$ ,  $p = .025$ ) and negatively correlated with social conservatism ( $r(315) = -.25$ ,  $p = .000008$ ). Correlations between the demographics and the variables of interest are represented in Table 3. Results of the GLM supported the correlational analysis in case of the single item political orientation, which provided no evidence for a relationship with response style on the Triad Task,  $\beta = .002$ ,  $SD = .04$ ,  $p = .89$ ,  $r = .008$ .

No evidence for a relationship between economic conservatism and Triad Task responses was observed (H4), irrespective of whether correlational analyses ( $\tau = -.03$ ,  $p = .51$ , 95% bootstrapped CI [-0.096, 0.043]) or GLM were used ( $\beta = -.004$ ,  $SD = .05$ ,  $p = .80$ ,  $r = .01$ ). An equivalence test was also conducted to see whether we can conclude that there is no relationship between response style on the Triad Task and economic conservatism. Smaller effect size of interest was set as  $r = .1$ . Results of the equivalence test with  $\Delta_L = -.1$  and  $\Delta_U = .1$  yielded significant results

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<sup>17</sup> An additional analysis was conducted excluding responses faster than 150 ms on the Triad Task and similar results emerged,  $\tau = .05$ ,  $p = .26$ .

<sup>18</sup> Correlation effect size was computed as the square root of the Nagelkerke  $R^2$  which is the equivalent of  $R^2$  for GLM analysis.

for the upper bound ( $p = .01$ ), but not for the lower bounds ( $p = .11$ ). Thus, an effect as small as  $r = -.03$  cannot be interpreted as equivalent to zero.

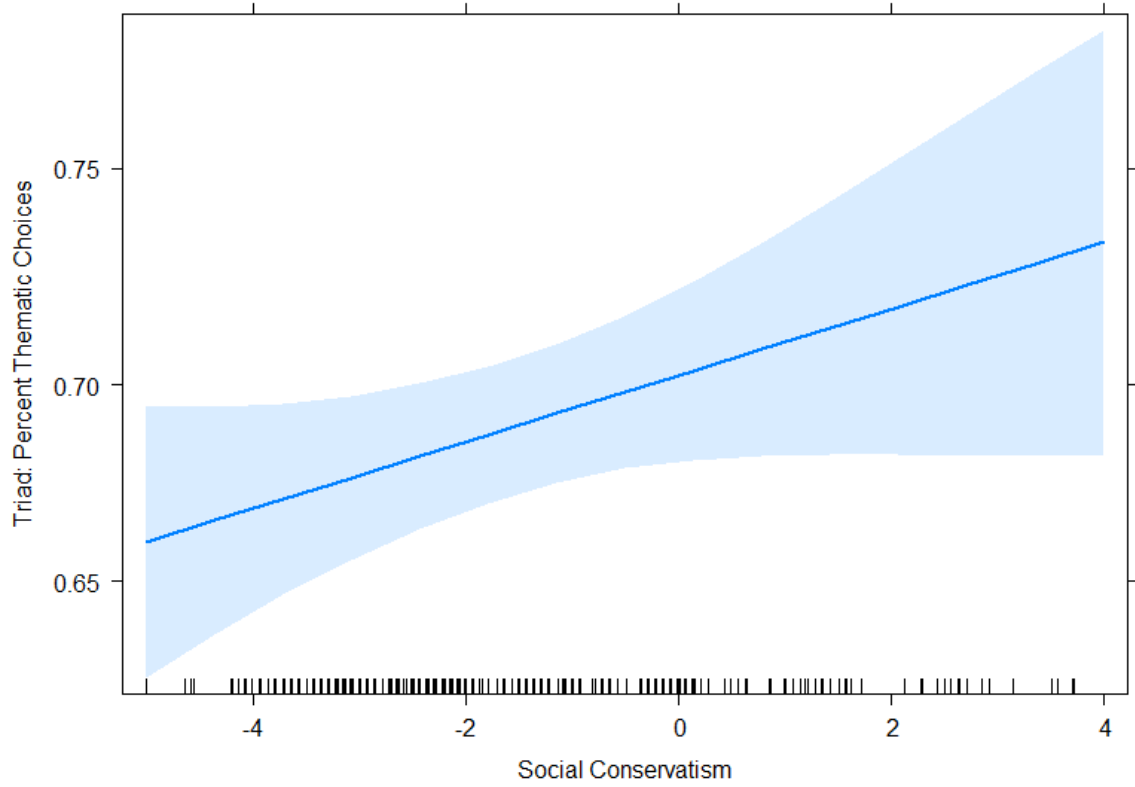


Figure 2. Relationship between the holistic responses on the Triad Task and social conservatism based on the GLM analysis. Shaded region shows the 95% confidence interval. The tiny bars on the x axis depict the distribution of social conservatism scores.

Table 3. Correlation Matrix for the Triad, Political Variables, and Demographics

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Triad	3.78	4.82					
2. Social Conservatism	-1.61	1.84	.06				
			[-.05, .17]				
3. Economic Conservatism	3.30	0.71	-.01	.03			
			[-.12, .10]	[-.08, .14]			
4. Age	20.92	2.29	-.04	.06	-.06		
			[-.15, .07]	[-.05, .17]	[-.17, .05]		
5. Hometown Size	1.40	0.78	-.02	.05	-.04	-.06	
			[-.13, .09]	[-.06, .16]	[-.15, .07]	[-.17, .05]	
6. Childhood SES	5.82	1.52	.13	-.25	.10	-.08	-.27
			[.02, .23]	[-.35, -.14]	[-.01, .21]	[-.19, .03]	[-.37, -.16]

*Note.* Values in square brackets indicate the 95% CI. Triad: Holistic thinking score based on the Triad Categorization Task.

Since there was no relationship between the responses on the Triad Task and social conservatism, the hypothesized hierarchical regression model (H2) was not tested; instead, correlational analyses were conducted in order to investigate the relationship between the Triad Task and self-reported holistic thinking tendency measured by the AHS. Pearson’s correlation coefficient revealed no evidence for a relationship between the thematic response style on the Triad Task and holistic thinking scores on the AHS,  $r(315) = -.07, p = .22, 95\% \text{ CI} [-.179, .041]$ .

Furthermore, the relationship between the Triad Task and each subscale of the AHS was examined separately and it was found that the Triad Task negatively correlated with the items emphasizing tolerance of contradictions (newly added items),  $r(315) = -.12, p = .028, 95\% \text{ CI} [-.230, -.013]$ . No relationship was detected between the

Triad Task and the other subscales of the AHS, correlation matrix can be seen in Figure 3. Moreover, no relationship was detected between holism scores from the Triad Task and reflective thinking measured by the CRT,  $\tau = -.03, p = .46$ <sup>19</sup>. Correlation matrix representing the relationship between holism scores from the Triad Task and CRT can be seen in Figure 4.

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<sup>19</sup> This result did not change when it was analyzed via binomial linked GLM using the combined score,  $\beta = -.02, SD = .03, p = .17, r = .08$  or depending on which version of the CRT was used in correlational analyses,  $\tau = -.06, p = .16$  for CRT-I, and  $\tau = .04, p = .45$  for CRT-II. Only the GLM analysis based on the CRT-I scores yielded a significant result for the relationship between reflective thinking and holism scores from the Triad Task,  $\beta = -.05, SD = .04, p = .004, r = .17$ . Although thought provoking, this result should be treated with caution as there is no reason to assume that one version of the CRT is a better measure of reflective thought. So, this result might result from a type 1 error. However, in parallel with this result, Yılmaz and Sarıbay (2017b) found that the CRT-I did not correlate with social conservatism in contrast with the other measures used to assess reflective thinking –CRT-II, Base-rate conflict problems (BRC; Pennycook et al., 2012), and the Actively Open-minded Thinking Scale (AOT; Haran et al., 2013)—, although it correlated well with the other reflective thinking measures and had no reliability issue. This difference between the measures might have resulted from the difference between CRT-I and CRT-II in terms of their dependence on mathematical abilities. This assumption was made because the only substantial difference between these two tasks was assumed to be this reliance on numeracy (Thomson & Oppenheimer, 2016). Further research is needed to investigate this possibility.

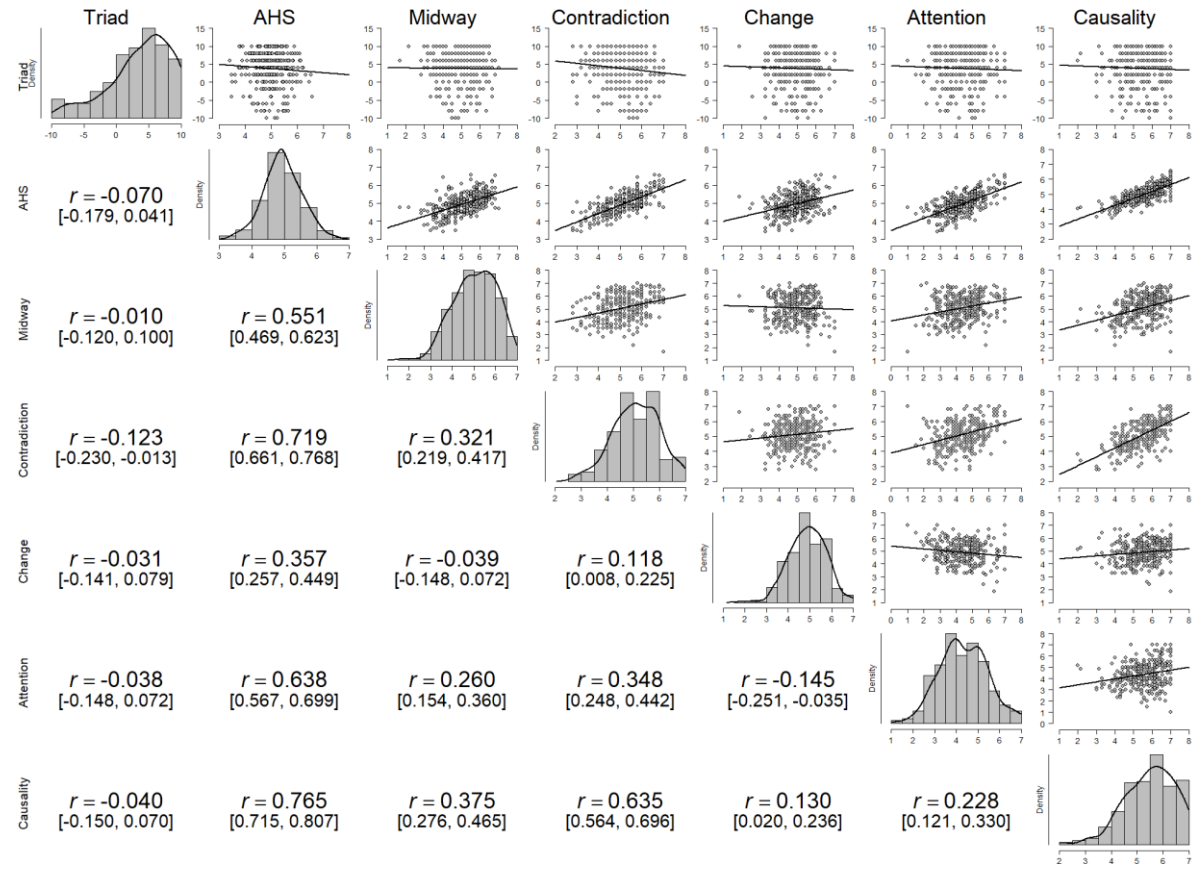


Figure 3. Correlation matrix representing the relationship between the holistic responses on the Triad Task and the AHS and its subscales. Distribution of each variable is on the diagonal. At the top of the diagonal, there are scatterplots representing bivariate distributions. At the bottom of the diagonal, the Pearson's correlation coefficients with 95% CIs are represented. Triad = Holistic thinking score based on the Triad Categorization Task. AHS = Holistic thinking score based on the Analysis-Holism Scale. Midway = the original subscale for attitudes toward contradictions, emphasizing a midway approach. Contradiction = the subscale composed of the added items, emphasizing tolerance of contradictions. Change = the revised version of the Expectation of Change subscale with the original and added items. Attention = the revised version of the Locus of Attention subscale with additional items, excluding one of the original items. Causality = the revised version of the Causality subscale with the original and added items.

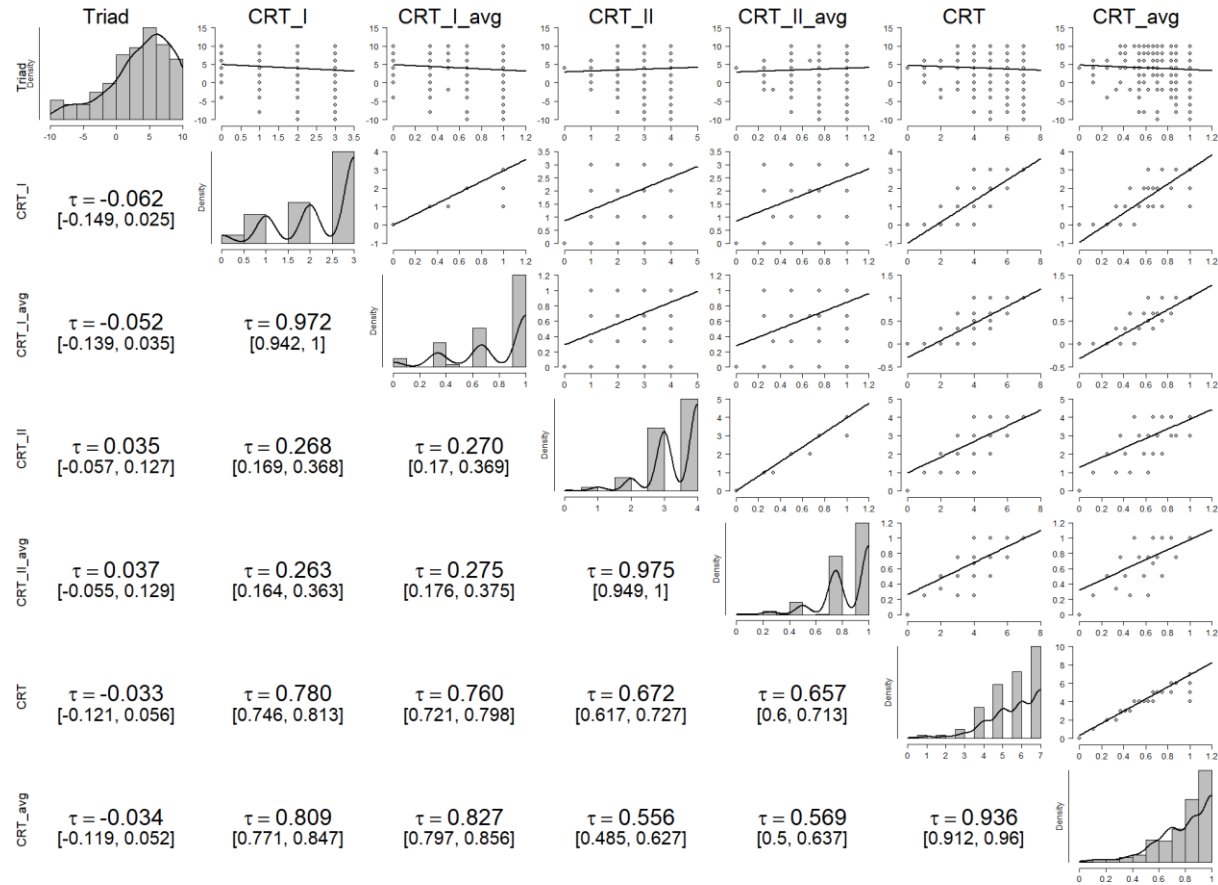


Figure 4. Correlation matrix representing the relationship between the holistic responses on the Triad Task and the CRT. Distribution of each variable is on the diagonal. At the top of the diagonal, there are scatterplots representing bivariate distributions. At the bottom of the diagonal, the Kendall's tau coefficients with 95% CIs are represented. Triad = Holistic thinking score based on the Triad Task. Avg: average scores based only on the questions answered.

As expected (H3), dialecticism measured by the AHS (Change and Tolerance of Contradiction subscales) negatively correlated with social conservatism,  $r(315) = -.14, p = .011, 95\% \text{ CI } [-.248, -.032]$ <sup>20</sup> (Figure 5). After controlling for gender, age, hometown size, childhood SES, and religiosity, this relationship was strengthened,  $\beta = -.29, SD = .02, p = .00004$ . Unexpectedly (H4), dialectical thinking was negatively correlated with economic conservatism and this relationship was even more pronounced than that between dialecticism and social conservatism,  $r(315) = -.27, p = .000001, 95\% \text{ CI } [-.369, -.165]$ <sup>21</sup> (Figure 6). This relationship remained after controlling for gender, age, hometown size, childhood SES, and religiosity,  $\beta = -.25, SD = .05, p = .000006$ .

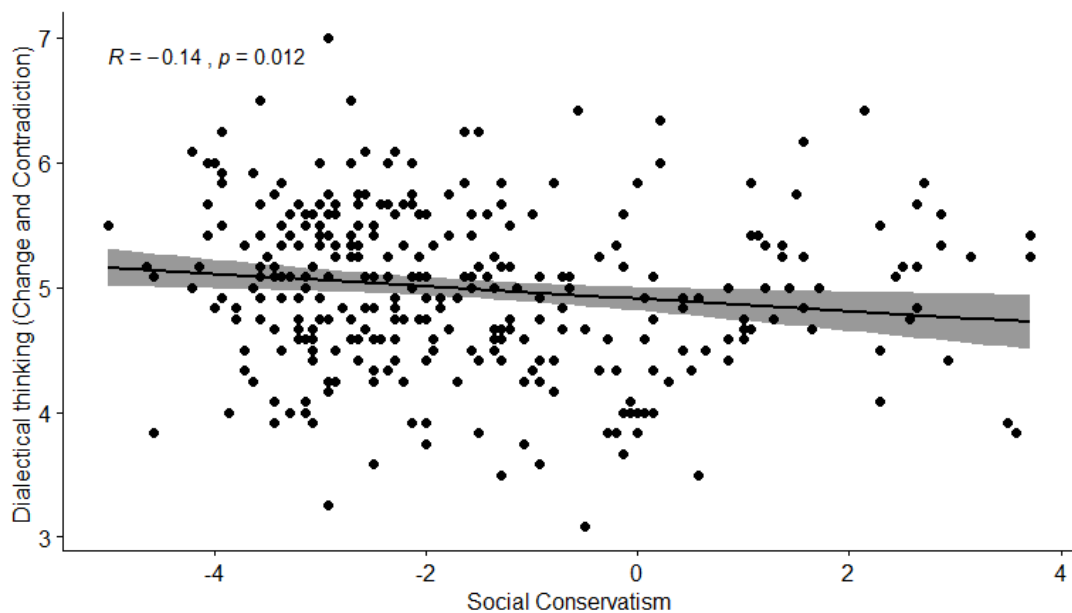


Figure 5. Scatterplot representing the relationship between social conservatism and dialecticism.

<sup>20</sup> This result changed neither when one poor item in the Scale of Social Conservatism (based on reliability) was disregarded ( $r(315) = -.13, p = .017$ ), nor when potential influential cases were excluded ( $r(311) = -.13, p = .024$ ).

<sup>21</sup> Results were similar when two poor items in the Economic Conservatism Scale (based on reliability) were disregarded ( $r(315) = -.29, p < .000001$ ) and potential influential cases were excluded ( $r(312) = -.28, p < .000001$ ).

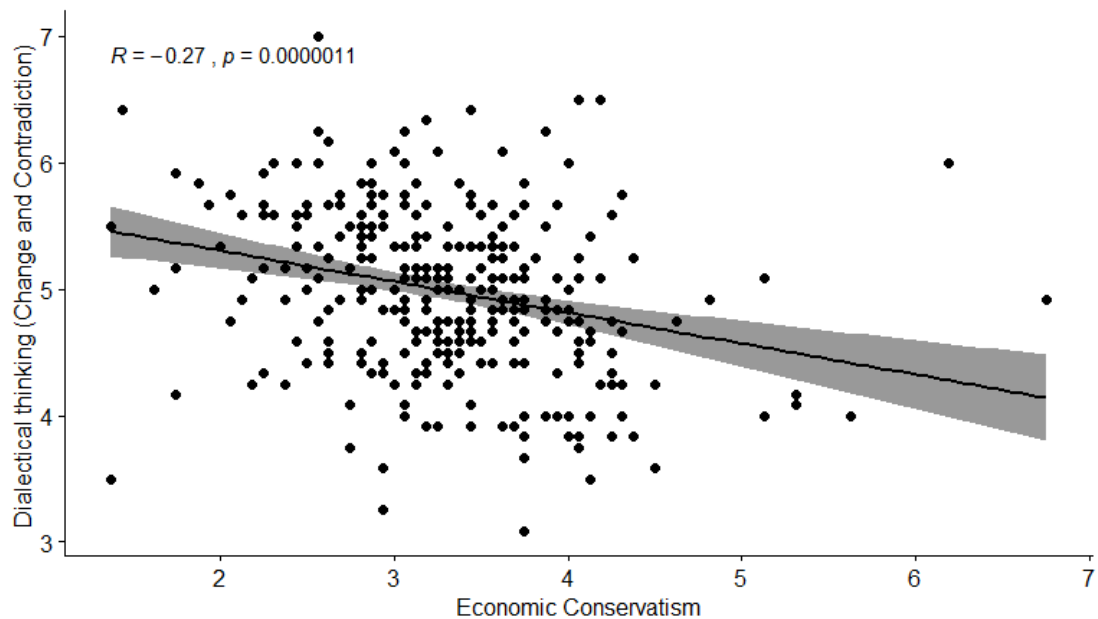


Figure 6. Scatterplot representing the relationship between economic conservatism and dialecticism.

Hierarchical regression models were tested to investigate how much of the variance in the relationship between dialectical thinking and social and economic conservatism was accounted for by the need for closure (H5). Results revealed that social conservatism predicted dialectical thinking to the same extent before ( $\beta = -.14$ ,  $SD = .02$ ,  $p = .012$ ) and after ( $\beta = -.14$ ,  $SD = .02$ ,  $p = .013$ ) the inclusion of the NFCC as the second predictor. Also, adding the NFCC scores did not improve the model,  $\Delta R^2 = .0002$ ,  $F(1,314) = 0.05$ ,  $p = .83$ . Similar results were obtained for economic conservatism; the NFCC scores did not account for the variance explained by economic conservatism ( $\beta = -.27$ ,  $SD = .05$ ,  $p = .000001$  before, and  $\beta = -.27$ ,  $SD = .05$ ,  $p = .000001$  after the inclusion) and did not improve the model fit,  $\Delta R^2 = .001$ ,  $F(1,314) = 0.46$ ,  $p = .50$ . There was actually no strong evidence for a relationship between the NFCC scores and dialecticism ( $r(315) = -.03$ ,  $p = .65$ ), social

conservatism ( $r(315) = .10, p = .086$ ) and economic conservatism ( $r(315) = -.04, p = .48$ ).

Partial correlations showed that the liking of dialectical proverbs controlling for the liking of non-dialectical proverbs was positively correlated with dialectical thinking tendency measured by the relevant subscales of the AHS,  $r(314) = .14, p = .014$  (H6). Thus, a similar partial correlation was conducted with social conservatism as the outcome variable instead of the dialectical subscales of the AHS (H7). Results revealed a pattern similar to those reported above (based on the dialecticism scores from the AHS), indicating a negative, but slightly smaller and non-significant correlation between dialectical thinking and social conservatism,  $r(314) = -.10, p = .07^{22}$ , and a negative correlation between dialectical thinking and economic conservatism,  $r(314) = -.20, p = .0004^{23}$ .

### 2.3.3 Exploratory analyses

Correlation matrix for political variables, cognitive reflection, need for closure, and holistic thinking measured by the AHS can be seen in Table 4.

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<sup>22</sup> The relationship between the liking of dialectical proverbs and social conservatism was slightly weakened while controlling for gender, age, religiosity, hometown size, and childhood SES,  $\beta = -.09, SD = .12, p = .09$ .

<sup>23</sup> The relationship between the liking of dialectical proverbs and economic conservatism remained after controlling for gender, age, religiosity, hometown size, and childhood SES,  $\beta = -.24, SD = .06, p = .0005$ .

Table 4. Correlation Matrix for Political Variables, Religiosity, CRT, NFCC, and AHS

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Social Conservatism		[-.08, .14]	[.53, .67]	[.55, .69]	[-.16, .06]	[-.01, .20]	[-.15, .07]	[-.23, -.01]	[.08, .29]	[-.17, .05]	[-.25, -.03]	[-.05, .17]
2. Economic Conservatism	.03		[.15, .36]	[-.11, .11]	[-.14, .08]	[-.15, .07]	[-.39, -.19]	[-.34, -.13]	[-.30, -.09]	[-.35, -.15]	[-.27, -.06]	[-.20, .02]
3. Political Orientation	.60	.26		[.48, .63]	[-.11, .11]	[-.13, .09]	[-.07, .15]	[-.12, .10]	[.04, .26]	[-.10, .12]	[-.21, .01]	[-.01, .21]
4. Religiosity	.62	-.00	.56		[-.10, .12]	[-.06, .16]	[.05, .27]	[-.02, .20]	[.14, .35]	[.04, .25]	[-.10, .12]	[-.03, .18]
5. CRT	-.05	-.03	-.00	.01		[-.19, .03]	[-.00, .21]	[-.07, .15]	[-.06, .16]	[-.06, .16]	[-.08, .14]	[.01, .23]
6. NFCC	.10	-.04	-.02	.05	-.08		[.06, .27]	[.06, .27]	[.15, .36]	[.09, .30]	[-.29, -.08]	[.04, .26]
7. AHS	-.04	-.29	.04	.16	.11	.17		[.72, .81]	[.47, .62]	[.66, .77]	[.26, .45]	[.57, .70]
8. Causality	-.12	-.24	-.01	.09	.04	.17	.76		[.28, .47]	[.56, .70]	[.02, .24]	[.12, .33]
9. Midway	.19	-.19	.15	.25	.05	.26	.55	.37		[.22, .42]	[-.15, .07]	[.15, .36]
10. Contradiction	-.06	-.25	.01	.15	.05	.20	.72	.63	.32		[.01, .23]	[.25, .44]
11. Change	-.14	-.16	-.10	.01	.03	-.19	.36	.13	-.04	.12		[-.25, -.04]
12. Attention	.06	-.09	.10	.08	.12	.15	.64	.23	.26	.35	-.14	

*Note.* Pearson's correlation coefficients are represented below the diagonal with their 95% CIs above the diagonal. CRT: The Cognitive Reflection Test (I and II combined). NFCC: The Need for Cognitive Closure Scale. AHS: The Analysis-Holism Scale.

Contrary to previous evidence, results did not reveal evidence for a relationship between reflective thinking and political orientation, as the scores on the CRT (combination of CRT-I & CRT-II) correlated neither with the scores on the Scale of Social Conservatism ( $\tau = -.03, p = .50$ ), nor with the scores on Economic Conservatism Scale ( $\tau = -.05, p = .25$ ), nor with the scores on the single item political identification scale ( $\tau = -.02, p = .62$ ).

Zero-order correlations between each subscale of the AHS and social and economic conservatism were examined (see Table 4). Results showed that Change and Causality scores negatively correlated with both social ( $r(315) = -.14, p = .01$  for Change;  $r(315) = -.12, p = .04$  for Causality) and economic conservatism ( $r(315) = -.16, p = .003$  for Change;  $r(315) = -.24, p = .00001$  for Causality). Midway items were positively related to social conservatism ( $r(315) = .19, p = .0007$ ), but negatively related to economic conservatism ( $r(315) = -.19, p = .0005$ ), and Tolerance of Contradictions negatively correlated with economic ( $r(315) = -.25, p = .000004$ ) but not with social conservatism. However, when religiosity was controlled, tolerance of contradiction also negatively correlated with social conservatism,  $r(314) = -.23, p = .0004$ .

As the expected relation between dialecticism and the need for cognitive closure was not observed, zero-order correlations between the NFCC and each subscale of the AHS were examined to have a better grasp of the picture. While Change subscale negatively correlated with the NFCC ( $r(315) = -.19, 95\% \text{ CI } [-.29, -.09]$ ), scores on the other subscales positively correlated with the NFCC scores (see Table 4). When the hypothesized hierarchical regression model was conducted with Change scores (instead of dialecticism) as the outcome and social conservatism as the predictor variable, inclusion of the NFCC scores as the second predictor indeed

improved the model,  $\Delta R^2 = .03$ ,  $F(1,314) = 9.95$ ,  $p = .002$ . However, social conservatism predicted holistic expectations of change to the same extent before ( $\beta = -.14$ ,  $SD = .03$ ,  $p = .01$ ) and after the inclusion of the NFCC scores in the model ( $\beta = -.13$ ,  $SD = .03$ ,  $p = .02$ ); thus, the NFCC scores still could not account for the variance explained by social conservatism. Similar results were obtained for economic conservatism; inclusion of the NFCC improved the model ( $\Delta R^2 = .04$ ,  $F(1,314) = 12.51$ ,  $p = .0005$ ), but did not account for the variance explained by economic conservatism ( $\beta = -.16$ ,  $SD = .07$ ,  $p = .003$  before, and  $\beta = -.17$ ,  $SD = .06$ ,  $p = .002$  after the inclusion).

As previous research showed that the relationship between political orientation and analytic/holistic thinking is more pronounced in urban compared to rural dwellers (Talhelm et al., 2015), we investigated this relationship by classifying participants as urban if they indicated that the place they resided the longest is a metropolis ( $N = 229$ ) and as rural if it is a city, borough, small town, or village ( $N = 88$ ). GLM with binomial link revealed the opposite of what we expected: For urban dwellers, no relationship was detected between the Triad Task and social conservatism,  $\beta = -.01$ ,  $SD = .02$ ,  $p = .62$ ,  $r = .03$ . In contrast, there was a large relationship for rural dwellers,  $\beta = .13$ ,  $SD = .04$ ,  $p = .00001$ ,  $r = .46$ , which held after controlling the demographics (gender, age, childhood SES, and religiosity),  $\beta = .15$ ,  $SD = .05$ ,  $p = .00003$ ,  $r = .40$ . These results should be treated with caution since the sample size is very small and this analysis and the urban-rural classification were not planned before the data has been collected.

In order to test whether taxonomic pairings require more effort than thematic pairings on the Triad Task, the average reaction times for taxonomic and thematic responses were compared. Results of paired samples t-test revealed that taxonomic

pairings take more time ( $M = 3480.38$ ,  $SD = 1973.55$ ) than thematic pairings ( $M = 3164.57$ ,  $SD = 1444.32$ ),  $t(270) = 2.88$ ,  $p = .004$ , 95% CI for the mean difference [90.246, 480.247]<sup>24</sup>.

### 2.3.4 Summary of Results

We summarized the results of Study 1 in Table 5.

Table 5. Summary Table for Results of Study 1

Hypotheses	Support	Explanation
H1: Triad – Social Conservatism	Mixed	Depending on statistical decisions
H2: CRT/AHS in Triad – Social Conservatism	N.A.	Conditional on H1
H3: Dialecticism – Social Conservatism	✓	
H4: Cultural Thought Styles –x Economic Conservatism	Mixed	Unexpected relationship with dialecticism & Triad –x EC was not supported by equivalence testing
H5: Need for Closure in Dialecticism – Social Conservatism	X	
H6: Proverb Task – AHS	✓	
H7: Proverb – Social Conservatism	X?	Small, non-significant relationship & Unexpected relationship with EC

*Note.* The symbol “–” was used to represent an expected relationship between variables, whereas the symbol “–x” represents a lack thereof. In order to indicate that the hypothesis is about the mechanism underlying the relationship, we used the proposition “in”. In cases where a clear conclusion could not be reported (either supporting or not), an explanation was provided in the last column. CRT: The Cognitive Reflection Test (I and II combined). AHS: The Analysis-Holism Scale. EC: Economic Conservatism.

<sup>24</sup> Analysis was conducted based on the reaction times that are longer than 150 ms., excluding three data points with z-scores of -10.73, -4.37, and -3.90 for mean difference.

## 2.4 Discussion

Results did not provide solid supporting evidence for the previous findings implying a positive relationship between social conservatism and holistic thinking (measured by the Triad Task) in a Turkish college sample. Neither zero-order correlations nor GLM with binomial link (the analysis with which the original effect was detected; Talhelm, 2018; Talhelm et al., 2015) indicated reliable evidence for such a relationship.

Triad Task scores were not correlated with the self-report measure used to assess holistic thinking tendency. It was found to be related to only new items emphasizing tolerance of contradictions and this relationship was negative. That is, the more people chose thematic pairings (indicating holistic cognitive style) on the Triad Task, the less they embraced contradictions; which is contrary to what one would expect if both variables were to measure holistic thinking, as commonly assumed in the literature (Ji et al., 2004; Peng & Nisbett, 1999). These results consolidated our concerns regarding the use of the Triad Task as a measure of holistic thinking tendency.

There was also no evidence for a relationship between Triad Task scores and reflective thinking. This was true regardless of how reflective thinking was operationalized (via CRT-I, CRT-II or their sum). Thus, scores on the Triad Task and the CRT do not seem to be driven by common underlying traits. However, the idea that taxonomic pairings might require more effort was supported by exploratory analyses, as the average time spent on taxonomic responses was found to be longer than that spent on thematic responses. Future research should experimentally investigate the relationship between responding on the Triad Task and reflective thinking.

As hypothesized, dialecticism correlated negatively with social conservatism. This was in the opposite direction of the relationship between holistic thinking and social conservatism that previous research has found using the Triad Task (Talhelm, 2018; Talhelm et al., 2015). Furthermore, exploratory analyses revealed that different dimensions of holism (as measured by the self-report scale) differentially relates to ideology—both social and economic. Hence, how one conceptualizes holistic thinking influences the conclusions one would reach.

Exploratory analyses showed that the two subscales assumed to measure holistic attitudes towards contradictions behaved differently in relation to social conservatism. This was expected in the designing phase of the study, which led to the creation of a new subscale for tolerance of contradictions. This finding justified our effort to revise the AHS. The emphasis on compromise and midway approach in the original subscale is probably more compatible with conservative end of our sample. This might be because compromise and midway approach is favored more by conservatives than liberals, or because the representation of conservatives in our sample was limited to *moderates*. Further research is needed to examine these two possibilities.

Moreover, the results of the present study unexpectedly revealed that dialecticism were negatively correlated with economic conservatism. A possible explanation could be provided on the basis of the relations between holism, collectivism, and economic liberalism. Specifically, cross-cultural research has demonstrated that people in collectivist cultures tend to think more holistically (Nisbett et al., 2001). On the other hand, individualism has long been associated with capitalism (Friedman, 2009; De Tocqueville, 2003). There is also evidence for this relationship at the individual level; people who were inclined to collectivism were

found to be more economically liberal (Gerganov et al., 1996). Thus, the observed results might have arisen from this trifold relationship between holism, collectivism, and economic liberalism. On the other hand, since 2002, the ruling party in Turkey has strongly emphasized both social and economic conservatism. Thus, it is possible that the parallel correlations of dialecticism with social and economic conservatism is simply due to the overall support given by proponents of the ruling party to their policies. Future research should replicate this novel finding and investigate underlying reasons for this effect.

Contrary to our expectations, the relationship between social conservatism and dialectical thinking was not accounted for by the need for cognitive closure. The need for cognitive closure, indeed, was not correlated with dialecticism and conservatism (ignoring the weak and non-significant correlation with social conservatism) in our sample. Exploratory analyses revealed that it was negatively correlated with Change subscale, but positively correlated with Contradiction. Hypothesized hierarchical regression was then tested with only Change subscale. Results revealed that the need for closure still falls short of explaining the negative relationship between social conservatism and holistic expectations of change. It is important to note that, however, the present study was correlational and controlled experiments are needed to reach more valid conclusions, especially when it comes to mediational effects. Future research should investigate other potential mechanisms underlying this relationship.

The aim of developing a measure of dialectical thinking was partially satisfied. Liking of the dialectical proverbs controlling for those of non-dialectical proverbs predicted holistic thinking tendency measured by the relevant subscales (expectation of change and tolerance of contradictions) of the AHS, though this

relationship ( $r = .14$ ) was not as strong as it should be if the two measures indeed tap the same construct or highly similar ones. With respect to our purposes based on the Proverb Task, we found that although the relationship between dialectical thinking and economic conservatism was replicated with this new measure, the evidence was weaker in the case of social conservatism.

It is important to note that, for the Proverb Task, reliability values were under the acceptable range ( $\alpha = .55$  for dialectical, and  $\alpha = .61$  for non-dialectical set). Methodological improvements could be achieved by including more items to each set with extra questions on proverbs targeting the familiarity, frequency of use, and poeticity of the proverbs as Friedman et al. (2006) suggested that these might have an impact on liking ratings, beyond a preference for dialectical or non-dialectical proverbs. We matched dialectical and non-dialectical sets in terms of these characteristics by a pilot test and chose the items based on this. The inclusion of these control variables in the actual study might allow us to use additional items that we had to exclude based on the pilot test and achieve a more inclusive item set created with a focus much more on the content rather than on statistical equivalence in terms of control variables.

We can argue for possible reasons for the rather weak support of our results for the previous findings on the positive relationship between social conservatism and thematic responding on the Triad Task. One reason might be insufficient power as we estimated our sample size based on the average effect sizes reported in the studies to be replicated (Talhelm, 2018; Talhelm et al., 2015) and the actual effect size might be smaller.

Another reason might be methodological differences. Our version of the Triad Task was slightly different than those used in the previous studies which we aimed to replicate (Talhelm, 2018; Talhelm et al., 2015). In those studies, participants were asked to choose a pair among three items, whereas in the present study, one of the three items was presented as a target and participants were asked to choose one item that best matches this target item among the remaining two items. Moreover, we used the word “congruent” to instruct participants to select one of the items which best matches the target. This instruction could have led participants to respond more holistically as the Turkish equivalent of the word “congruent” could have been associated with a thematic relationship more than a taxonomic one<sup>25</sup>. As can be seen in Figure 3 the distribution of scores on the Triad Task was left-skewed, which might suggest a holistic-bias. Even though we constructed our Triad Task carefully and such surface features should not change the nature of results fundamentally, an additional replication with appropriate methodological changes would be valuable.

It is also important to point out that social conservatism (irrespective of its operationalization via the Scale of Social Conservatism or the single item orientation) was not related to reflective thought measured by the CRT in our data, contrary to the bulk of previous research provided evidence for this relationship (Deppe et al., 2015; Pennycook & Rand, 2018; Yılmaz & Sarıbay, 2016). Although we did not hypothesize a negative relationship between the CRT and social conservatism—as this is not a priority of this research—we examined this relationship with exploratory analyses. The non-significant result might be a signal

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<sup>25</sup> The word which was chosen to be the equivalent for “congruent” in the Turkish language (“uyumlu”) has connotations of harmony and accord; thus, it is not as neutral as it sounds in English.

of inadequacy of the CRT to measure reflective thought, or of the lack of such relationship in our sample. The former possibility can be explained by the familiarity of the undergrad sample with the task, since the CRT has been frequently used in studies conducted in our lab. The latter possibility might give a hint about non-significant result concerning the relation between the Triad Task scores and social conservatism. That is to say, if the Triad Task actually taps on similar underlying processing that the CRT measures (rather than holistic thinking tendency) and if cognitive reflection and political orientation was not related in our sample, this might explain the lack of association between the Triad Task and conservatism. However, this is only speculation and future research is needed in order to examine these possibilities.

Our results concerning the relationship between the Triad Task scores and political orientation in urban/rural populations were unexpected as they contradicted with the previous research (Talhelm et al., 2015). This might be due to the different classification of urban and rural in the present study.<sup>26</sup> Further research is needed to investigate this difference in Turkish samples.

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<sup>26</sup> Since we did not plan to analyze this urban/rural difference in the first place, we did not directly ask participants about their hometown. When we were suggested to examine this potential difference by a reviewer, we relied on the hometown size question for classifying people's hometowns into urban and rural, assuming the metropolitan municipalities as urban and the rest as rural. In Turkey, there are cities that are at the status of metropolitan municipality yet social life is not much different than small cities. Thus, this categorization is tentative. In future studies, a more objective criterion for urban/rural distinction should be applied.

## CHAPTER 3

### STUDY 2

The pre-registration for this study is available at <https://osf.io/b8xy7>.

#### 3.1 Purpose and hypotheses

Study 1 did not provide solid evidence for the previously detected relationship between thematic responding on the Triad Task and social conservatism. This might be a result of low power, methodological differences and potentially biased instructions on the Triad Task, or lack of such relationship in Turkish samples. Further attempts were needed to test these possibilities. Moreover, Study 1 revealed some novel findings (hypothesized dialecticism-social conservatism relation and unexpected dialecticism-economic conservatism relation) which need to be replicated. In Study 1, we expected that the need for cognitive closure could explain the negative relationship between dialecticism and social conservatism, but results did not support this hypothesis. Therefore, we aimed at investigating another explanatory variable for this relationship (namely ambiguity tolerance). Lastly, in order to make sense of the unexpected negative relationship between dialecticism and economic conservatism, we intended to test a possible explanation based on collectivism. All in all, Study 2 was conducted to (1) test the relationship between thematic responding on the Triad Task and social conservatism with methodological improvements in a high-powered study to reach more solid conclusions, (2) replicate the novel findings indicating a negative relationship between dialectical thinking and social and economic conservatism, and (3) investigate potential mechanisms underlying these effects.

Preregistered hypotheses for this study are listed below.

H1: When holism is operationalized via the Triad Task, it will be positively related to social conservatism as in the previous studies (Talhelm, 2018; Talhelm et al., 2015).

H2: No relationship is expected between holism measured by the Triad Task and economic conservatism.

H3a: Analytic (taxonomic) responses on the Triad Task will be positively related to Type 2 processes (measured by the CRT).

H3b: If H3a is supported, the analytic cognitive style (CRT) will account for more variance than cultural thought style measured by the Analysis-Holism Scale (AHS; Choi et al., 2007) in the relationship between response style on the Triad Task and social conservatism.

H4a: When holism is operationalized via dialecticism (i.e., Tolerance of Contradiction and Expectation of Change), it will be negatively related to social conservatism.

H4b: When holism is operationalized via dialecticism, it will be negatively related to economic conservatism.

H5: Dialecticism will be positively correlated with ambiguity tolerance.

H6: Ambiguity tolerance will account for a statistically significant amount of the variance in the negative relationship between social conservatism and dialecticism. That is to say, when ambiguity tolerance increases, dialecticism increases, and social conservatism decreases.

H7: Dialecticism measured by the Proverb Task will be positively correlated with holistic thinking scores on the AHS.

H8a: Dialecticism measured by the Proverb Task will be negatively correlated with social conservatism.

H8b: Dialecticism measured by the Proverb Task will be negatively correlated with economic conservatism.

H9: Economic conservatism will be negatively correlated with collectivism.

H10: If H9 is true, we expect that collectivism will account for a statistically significant amount of variance in economic conservatism-dialecticism relation. That is to say, when collectivism increases, dialecticism increases, and economic conservatism decreases.

H11: We expect that, compared to rural populations, in urban populations, the relationship between cultural thought style and political orientation will be more pronounced, as previous research suggested (Talhelm, 2018; Talhelm et al., 2015).

## 3.2 Method

### 3.2.1 Participants

We determined the smallest effect size of interest as the smallest effect observed in the previous studies investigating the same relation (Talhelm, 2018; Talhelm et al., 2015), which was  $r = .12$  (Study 1 in Talhelm, 2018). We estimated that 743 participants would be required to achieve .95 power, for one-tailed testing at .05 significance level.

In order to achieve the sample size we aimed for, we followed all of our pre-planned steps for collecting data. First, the survey link was posted on Bogazici University student group on social media, then shared with students taking

introductory psychology courses in Bogazici University, and lastly, shared on personal social media accounts to collect additional community data. As a last step (that is not pre-registered), we collected data from the sample pool of Kadir Has University Department of Psychology in exchange for course credit (N = 68). All these steps resulted in a total of 1141 participants who attempted to participate in the study. Those who left the survey incomplete (N = 301) and who wrongly answered any of the attention check questions (N = 90 and N = 25 for the first and the second attention check question respectively, with N = 97 non-overlapping cases) were excluded from the analyses (a total of N = 398). For two people who participated twice, the data from their first participation was kept and the latter was excluded from the data set. The final sample consisted of 743 participants.

A summary of demographic characteristics was provided in Table 1, in comparison with that of Study 1. Majority of the sample (73.6%) consisted of students (either undergrad or grad) and 46.5% of all students studied at Bogazici University (at either undergrad or grad level). Although age range was wide, distribution was highly right-skewed and only 7.8% of the sample were older than 30 and 0.7% were older than 60 years of age. Majority of the sample was either undergrad student or had a Bachelor's degree (69.7%), while 27.6% had graduate level education (either continuing or graduated). The lowest education level was high school graduate, consisted only 2.2% of the sample. Similar to the sample in Study 1, childhood SES had a thickening at the upper middle range (47.4% responded as 6 or 7). Religiosity was positively skewed, with 64.6% below the midpoint (41.3% identified themselves as not at all religious) and 31.6% above the midpoint. Based on the single item political orientation question, the sample leaned toward liberal (70.9% was below the midpoint and 9.2% was above the midpoint). According to the

categorical question on political ideology, 28.1% categorized themselves as social democrat, 15.5% apolitical, 14.4% as Kemalist, 12.7% as socialist, 10.4% liberals, 3% as conservative democrats, 1.2% Islamist, 1.2% Turkish nationalist, and 13.6% as other.

### 3.2.2 Materials and Procedure

Materials and procedure were the same as in Study 1 with few exceptions.

First, for the Triad Task, a more neutral instruction than that in Study 1 containing the word “congruent” was used. We simply asked participants to choose the item that best matched the target item. The stimulus set was be the same except few changes in pictures (see Appendix A). These changes were made only for avoiding visual similarities between items belonging to the same triads. Also, a training trial (with a triad constituted of three types of flower) was included for participants to facilitate their comprehension of the instructions before they moved on to the test trials. Thus, participants read the instructions twice, once before the training trial and once after.

Second, to increase the reliability of the Proverb Task, we used a revised and extended version of the two sets composed of 10 proverbs each (instead of 8; see Appendix B for the modified sets). In order to ensure that the Proverb Task is a valid measure of dialectical thinking without potential confounds, we included three questions asking participants to rate the familiarity, poeticality, and the frequency of use for each proverb. These additional questions allowed us to compose the two sets based on the appropriateness of content (in terms of dialectical vs. non-dialectical thinking) rather than based on the equivalence in terms of these three characteristics.

Ratings of familiarity, poeticality and frequency of use were used as covariates in the analyses. Also, in addition to liking rates used in Study 1, we included agreement rates, as agreement seems like a more direct indicator of thinking styles than liking (e.g., one may like a proverb because one finds it funny).

Third, to test the presumptive trifold relationship between holism, collectivism, and economic liberalism, the Relational-Interdependent Self-Construal (RISC; Cross et al., 2000) Scale—previously translated and validated in Turkish (Öztürk et al., 2015)—was included (see Appendix I). This measure was preferred, as *independent/interdependent self-construal* is regarded as the individual-level construct that corresponds to *individualism/collectivism* (Markus & Kitayama, 1991). Furthermore, by focusing solely on the relationality of the self, RISC provides a simpler and more compact measure of self-construal, contrary to other common measures consisting of multiple aspects irrelevant to our purposes (e.g., attitudes towards authority in Singelis Self-Construal Scale; Singelis, 1994).

Next, since the NFCC did not reveal any promising results on this matter and we only selected it as an exemplar of the cognitive variables frequently studied in relation with conservatism (Jost et al., 2003), the null findings of the preliminary study involving the NFCC were not simply interpretable as to whether it discredits our rationale or the choice of measure. This ambiguity may be possibly resolved by including a different (but related) cognitive variable. Therefore, instead of the NFCC, the Multiple Stimulus Types Ambiguity Tolerance Scale-II (MSTAT-II; McLain, 2009) was administered in Study 2 to test our hypothesis regarding the negative relationship between dialectical thinking and conservatism. This scale is a 7-point Likert-type scale consisting of 13 items (see Appendix J).

In order to test differential relations between response style on the Triad Task and political orientation in urban versus rural populations, in addition to the question about the size of the longest resided place, we added a “yes/no” question asking whether the hometown is the longest resided place and an open-ended question that directly asks hometown (“Please indicate your hometown. If you feel that your life has passed in more than one place, please write down all of these places chronologically while stating the approximate duration you lived there in parentheses, e.g., Denizli [18], Istanbul [5]). Based on these 3 questions, two variables were created: hometown and the longest resided place. If participants stated the district in their open-ended answers, we entered the province of the district as the hometown—since the majority did not give such detailed answers. If they indicated that their longest resided place is also their hometown, their open-ended answers for the hometown question were directly copied to the longest resided place variable. If hometown is not the longest resided place, we entered the first province they wrote as the hometown and the province with the largest number in parentheses as the longest resided place. When the “yes/no” question contradicted with the open-ended question (e.g., “no” combined with “Ankara [14] Istanbul [9]”), it was thought that the participant did not state the actual hometown; hence, hometown variable was left empty. In the case that there is more than one place the participant spent the longest time, we entered the hometown as the longest resided place if one of them was the hometown (e.g., Samsun [12], Istanbul [12]) and the earliest resided one if one of them was not the hometown (e.g., Trabzon [2], Samsun [12], Istanbul [12]). Finally, 2 variables (population and population density) for each of these provinces (hometown and longest resided) were created based on the data provided by Turkish Statistical Institute in 2019 (TÜİK, n.d.). These variables were utilized as continuous

predictors in the analyses concerning the urban-rural difference in the relationship between Triad Task and political orientation.

Additional questions were included in the demographic form because the final sample was expected to contain community adults in addition to undergraduate students. Therefore, questions about education level, profession, graduation year, institution where the undergraduate and graduate diplomas were obtained were added. Also, a categorical question asking political ideology was included.

Finally, instead of the attention check question used in between the separate scales, 2 attention check questions (“Please indicate that you completely disagree with this statement.” and “I never drunk water in my life.”) were embedded in the AHS and in the Economic Conservatism Scale.

Materials used in Study 2, as well as in Study 1, were approved by the Ethics Committee for Master and PhD Theses in Social Sciences and Humanities (see Appendix K).

### 3.3 Results

#### 3.3.1 Confirmatory Analyses

Directional hypotheses (H1, H3a, H4a, H4b, H5, H7, H8a, H8b, and H9) were tested using one-tailed tests at .05 significance level throughout this section.

H1 was tested using two methods (zero-order correlations and GLM with binomial link) separately for the Scale of Social Conservatism and the single-item identification scale. Correlational analyses showed that thematic responding on the Triad Task was positively correlated with scores on the Scale of Social

Conservatism,  $\tau = .09$ ,  $p = .0005$ , 95% CI [.036, .137]<sup>27</sup>, but was not related to conservatism measured by the single item political orientation question,  $\tau = .02$ ,  $p = .2$ , 95% CI [-.033, .082]. The relationship between thematic responding on the Triad Task and sociopolitical orientation was also analyzed using a GLM with binomial link. In line with the results of correlational analyses, social conservatism predicted thematic responding on the Triad Task,  $\beta = .05$ ,  $p = .0001$ ,  $r = .15$  (see Figure 7). Unlike the correlation, GLM showed that political orientation measured by the single item also predicted thematic response style on the Triad Task,  $\beta = .02$ ,  $p = .04$ ,  $r = .07$  (see Figure 8). Relationship between social conservatism and response style on the Triad Task held after controlling for the demographics (gender, age, hometown size, childhood SES, and level of education), both for the Scale of Social Conservatism,  $\beta = .05$ ,  $p = .0001$ ,  $r = .14$ , and for the single-item political orientation question,  $\beta = .03$ ,  $p = .02$ ,  $r = .08$ , as GLM revealed. Correlations between the demographics and the variables of interest are represented in Table 6.

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<sup>27</sup> An additional analysis excluding the responses faster than 150 ms. on the Triad Task was conducted and results did not change,  $\tau = .09$ ,  $p = .0005$ .

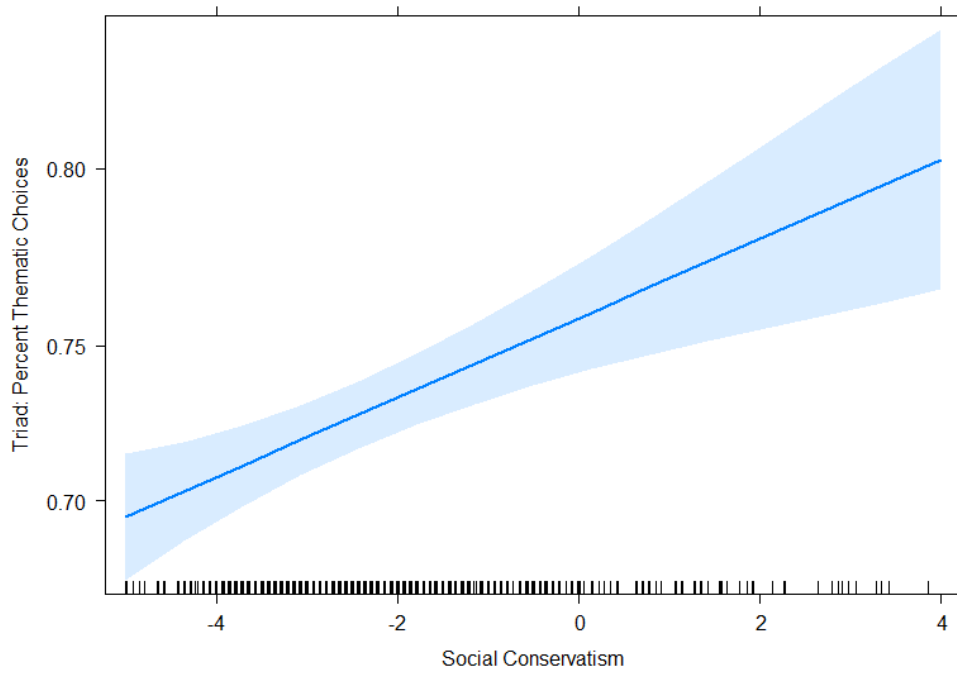


Figure 7. Relationship between the holistic responses on the Triad Task and social conservatism based on the GLM analysis. Shaded region shows the 95% confidence interval. The tiny bars on the x axis depict the distribution of social conservatism scores.

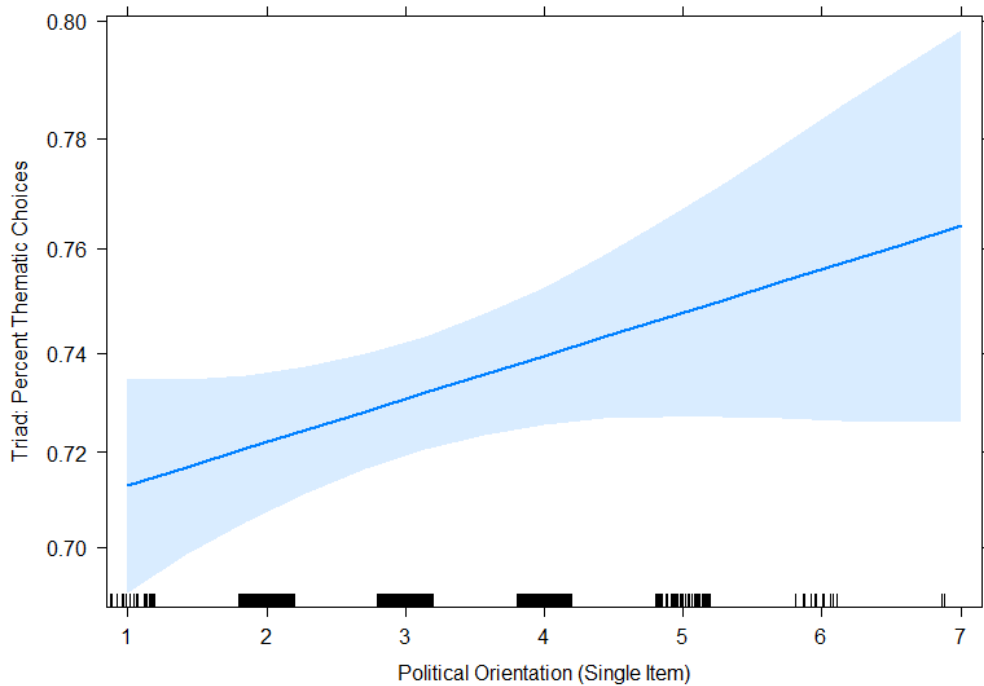


Figure 8. Relationship between the holistic responses on the Triad Task and political orientation measured by the single item based on the GLM analysis. Shaded region

shows the 95% confidence interval. The tiny bars on the x axis depict the distribution of political orientation ratings.

As hypothesized (H2), response style on the Triad Task was not related to economic conservatism as both the correlational analyses ( $\tau = -.02$ ,  $p = .52$ , 95% CI [-.069, .035]) and binomial-linked GLM revealed ( $\beta = -.02$ ,  $p = .19$ ,  $r = .05$ ). An equivalence test (Lakens, 2017) was also conducted to see whether we can conclude that there is no relationship between response style on the Triad Task and economic conservatism. Smaller effect size of interest was set as  $r = .1$ . Results of the equivalence test with  $\Delta_L = -.1$  and  $\Delta_U = .1$  yielded significant results for lower ( $p = .014$ ) and upper bounds ( $p = .001$ ). Thus, an effect as small as  $r = -.02$  is statistically equivalent to zero.

Table 6. Correlation Matrix for the Triad Task, Political Variables, and Demographics

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Triad	4.62	4.06							
2. Social Conservatism	-2.19	1.62	.10 [.03, .17]						
3. Economic Conservatism	2.95	0.77	-.03 [-.10, .04]	.05 [-.02, .13]					
4. Political Orientation	3.03	1.06	.05 [-.03, .12]	.49 [.43, .54]	.20 [.13, .27]				
5. Age	25.10	7.43	.05 [-.03, .12]	.00 [-.07, .08]	-.04 [-.11, .04]	-.08 [-.15, -.01]			
6. Hometown Size	1.28	0.61	-.05 [-.12, .02]	.02 [-.06, .09]	.06 [-.01, .13]	.08 [.01, .16]	-.01 [-.08, .06]		
7. Childhood SES	5.65	1.65	-.05 [-.12, .02]	-.02 [-.09, .05]	.00 [-.07, .07]	-.04 [-.11, .04]	.00 [-.07, .08]	-.10 [-.17, -.03]	
8. Education	5.74	1.08	.00 [-.07, .07]	-.04 [-.11, .03]	-.14 [-.21, -.07]	.04 [-.03, .12]	.30 [.23, .36]	-.02 [-.09, .05]	.02 [-.05, .09]

*Note.* Values in square brackets indicate the 95% CI. Triad: Holistic thinking score based on the Triad Categorization Task.

Thematic response style was negatively related to reflective thinking measured by the CRT,  $\tau = -.08$ ,  $p = .002$ , 95% CI  $[-.138, -0.027]$ <sup>28</sup> (H3a). Correlation matrix representing the relationship between Triad Task responses and cognitive reflection can be seen in Figure 9.

Before testing the relative contributions of the AHS and the CRT to the variance explained in the relation between thematic responding on the Triad and social conservatism (H3b), relationship between Triad Task responses and holistic thinking tendency measured by the AHS—both for the entire scale and its subscales—were examined. Pearson’s correlation coefficient revealed no evidence for a relationship between Triad Task responses and the AHS scores,  $r(741) = .02$ ,  $p = .58$ , 95% CI  $[-.052, .092]$ . Thematic responding on the Triad Task was found to be positively related to Causality subscale,  $r(741) = .07$ ,  $p = .04$ , 95% CI  $[.002, .145]$ . No relationship was detected between Triad Task responses and the other subscales of the AHS, correlation matrix can be seen in Figure 10.

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<sup>28</sup> This result did not change depending on the CRT measure used ( $\tau = -.06$ ,  $p = .03$  for the CRT-I, and  $\tau = -.09$ ,  $p = .002$  for the CRT-II), or when analyzed with GLM ( $\beta = -.05$ ,  $SD = .02$ ,  $p = .0002$ ,  $r = .14$ )

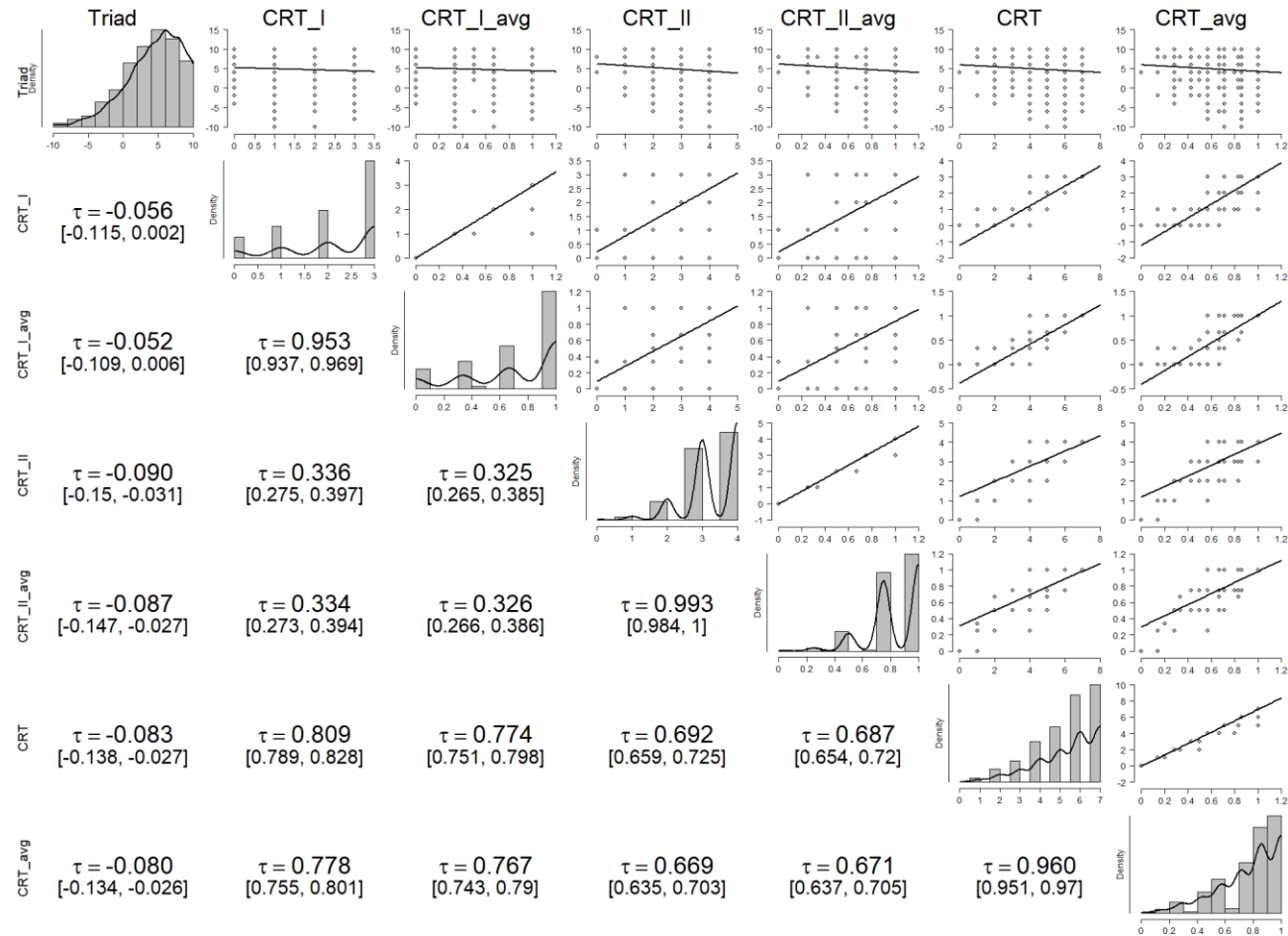


Figure 9. Correlation matrix representing the relationship between the holistic responses on the Triad Task and the CRT. Distribution of each variable is on the diagonal. At the top of the diagonal, there are scatterplots representing bivariate distributions. At the bottom of the diagonal, the Kendall's tau coefficients with 95% CIs are represented. Triad = Holistic thinking score based on the Triad Task. Avg: average scores based only on the questions answered.

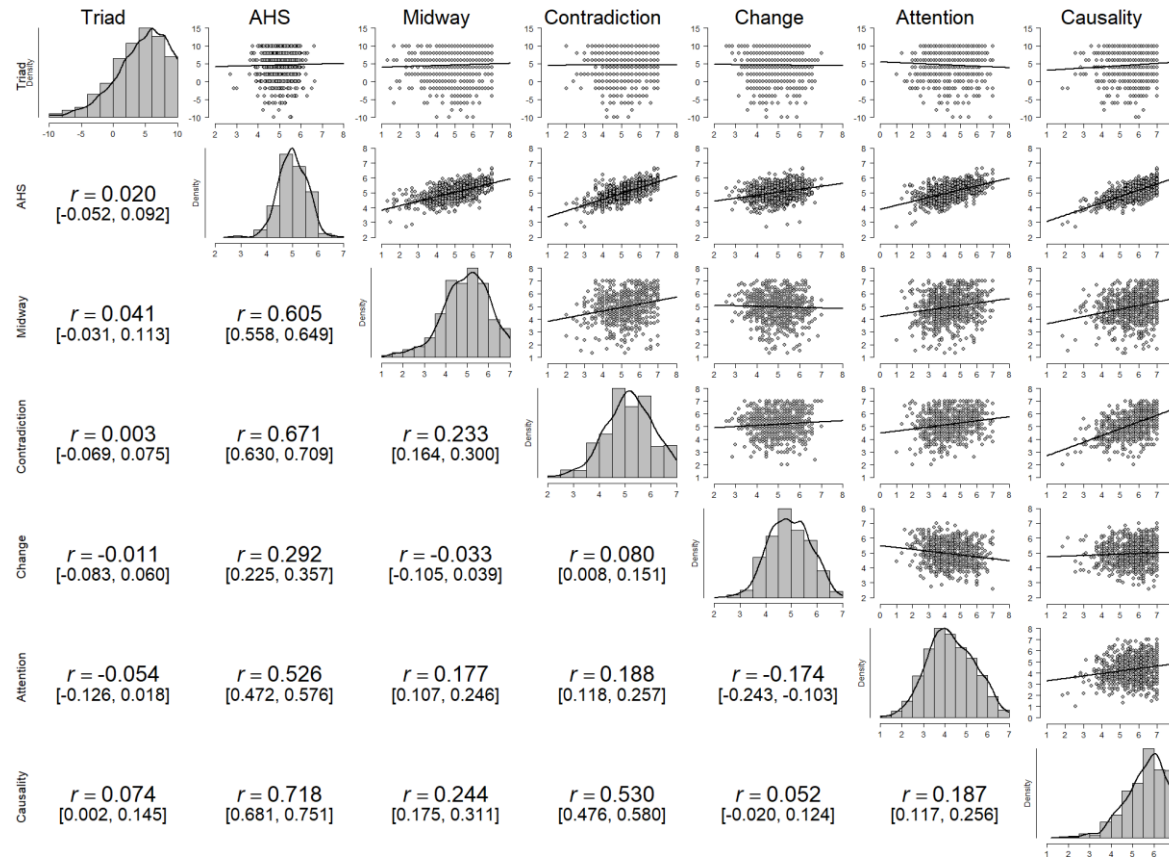


Figure 10. Correlation matrix representing the relationship between the holistic responses on the Triad Task and the AHS and its subscales. Distribution of each variable is on the diagonal. At the top of the diagonal, there are scatterplots representing bivariate distributions. At the bottom of the diagonal, the Pearson's correlation coefficients with 95% CIs are represented. Triad = Holistic thinking score based on the Triad Categorization Task. AHS = Holistic thinking score based on the Analysis-Holism Scale. Midway = the original subscale for attitudes toward contradictions, emphasizing a midway approach (Choi et al., 2007). Contradiction = the subscale composed of the added items, emphasizing tolerance of contradictions. Change = the revised version of the Expectation of Change subscale with the original and added items. Attention = the revised version of the Locus of Attention subscale with additional items, excluding one of the original items. Causality = the revised version of the Causality subscale with the original and added items.

How much variance the AHS and the CRT accounted for in the relationship between social conservatism and thematic responding on the Triad Task was examined by hierarchical regression models (H3b). A baseline model was constructed with scores on the Scale of Social Conservatism as the predictor and thematic responding on the Triad Task as the outcome variable. In the second and third steps, we included the AHS scores and the CRT scores respectively. The AHS did not account for additional variance beyond the baseline model,  $\Delta R^2 = .000006$ ,  $F(1, 740) = .005$ ,  $p = .95$ , neither did the CRT,  $\Delta R^2 = .006$ ,  $F(2, 739) = 2.23$ ,  $p = .11$ . In the last model, however, the CRT was a better predictor of thematic response style on the Triad Task,  $\beta = -.08$ ,  $SD = .10$ ,  $p = .03$ . While social conservatism was still a significant predictor of response style on the Triad Task ( $\beta = .09$ ,  $SD = .09$ ,  $p = .02$ ), the AHS was not ( $\beta = .0008$ ,  $SD = .28$ ,  $p = .98$ ).

Pearson's correlation coefficient did not reveal evidence for a relationship between dialecticism scores on the AHS and social conservatism,  $r(741) = .016$ ,  $p = .66^{29}$ , and conservatism measured by the single item,  $r(741) = -.002$ ,  $p = .48$  (H4a). On the other part, dialecticism negatively correlated with economic conservatism,  $r(741) = -.15$ , 95% CI[-.1, -.094],  $p = .00001$  (H4b; see Figure 11), and this relationship held after controlling for the demographics (gender, age, hometown size, religiosity, childhood SES, and education),  $\beta = -.15$ ,  $SD = .03$ ,  $p = .00001$ .

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<sup>29</sup> As the only tangible difference between Study 1 and Study 2 that might have an impact on this result was participant characteristics (undergrad Bogazici University sample in Study 1 and community sample in Study 2), this relationship was examined separately for participants from Bogazici University and others. Expected negative relationship was observed neither in Bogazici sample ( $r(304) = .087$ ,  $p = .94$ ), nor in others ( $r(421) = -.031$ ,  $p = .26$ ). Also, controlling for the demographics (age, gender, hometown size, childhood SES, education level, and religiosity) did not change the non-significant result,  $\beta = -.03$ ,  $SD = .02$ ,  $p = .27$ .

Contrary to our expectations (H5), ambiguity tolerance measured by the MSTAT-II was not correlated with dialecticism measured by the AHS,  $r(741) = .05$ , 95% CI[-.012, .1],  $p = .09$ , nor with the single-item for political orientation,  $r(741) = -.03$ , 95% CI[-.1, .027],  $p = .18$ . It was negatively correlated with social conservatism,  $r(741) = -.07$ , 95% CI[-.1, -.009],  $p = .03$ . Hypothesized hierarchical regression models (H6) were not conducted since expected relationship between dialecticism and ambiguity tolerance were not observed.

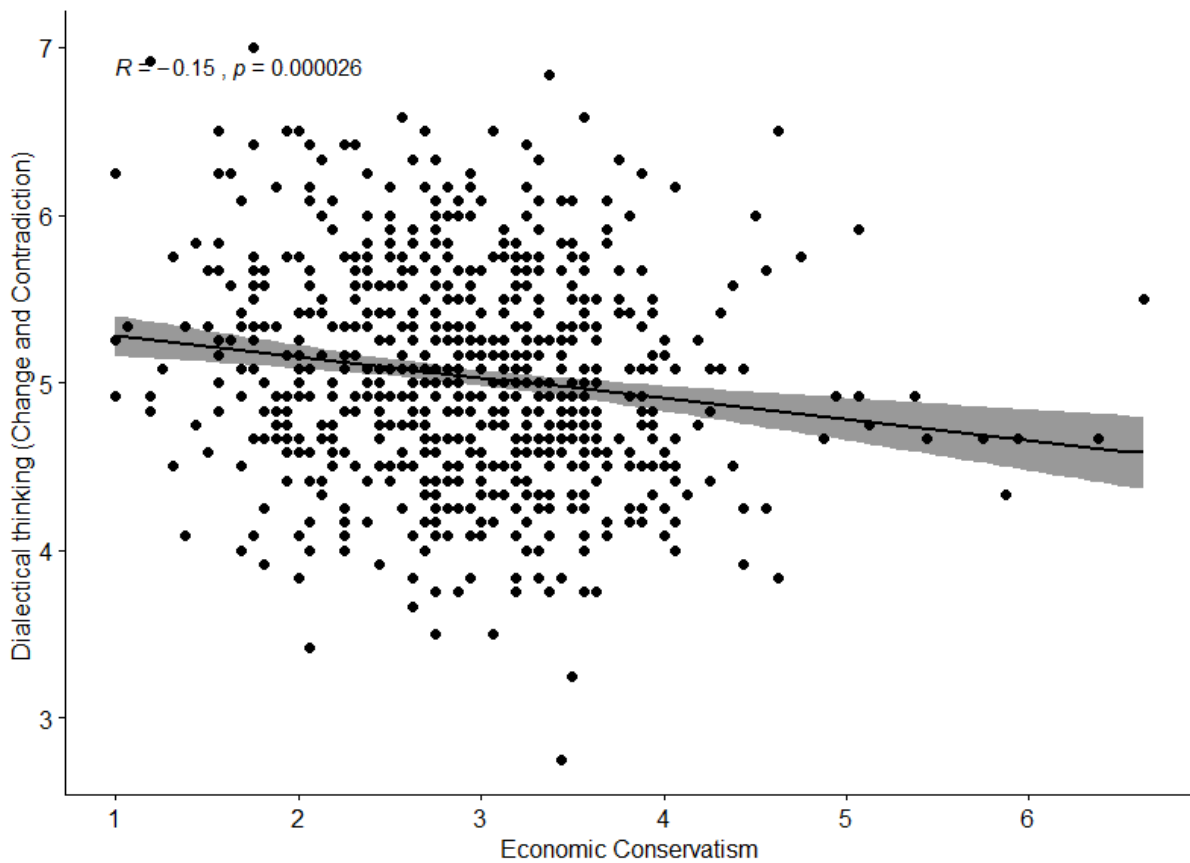


Figure 11. Scatterplot representing the relationship between economic conservatism and dialecticism.

Pearson's correlation coefficient showed that liking rates and agreement rates were highly correlated for dialectical ( $r(741) = .88, p < .000001$ ) and non-dialectical

proverb sets ( $r(741) = .87, p < .000001$ ). Thus, a composite score was created, averaging liking and agreement rates and further analyses were conducted based on these composite scores. Partial correlation analyses were conducted to examine whether the Proverb Task properly measured dialecticism (H7), with dialectical thinking scores on the AHS as the outcome and composite scores on the dialectical proverb set as the predictor variable, controlling for the composite scores on the non-dialectical proverbs and difference scores of control variables (familiarity, frequency of use, and poeticality) between two sets. Results showed that composite dialectical proverb scores were positively correlated with dialecticism measured by the AHS,  $r(737) = .33, 95\% \text{ CI } [.26, .39], p < .000001$ . Therefore, similar partial correlation analyses were conducted with conservatism scores (H8a and H8b) as the outcome variable instead of the AHS scores. Results revealed a negative relationship between dialecticism measured by the Proverb Task and economic conservatism,  $r(737) = -.12, 95\% \text{ CI } [-.19, -.05], p = .0004$ ; but no evidence was observed for a relationship between the scores of Proverb Task and social conservatism ( $r(737) = .02, p = .67$ ), and the single-item for political orientation ( $r(737) = .06, p = .94$ ).

As expected (H9), economic conservatism was negatively correlated with collectivism measured by the RISC,  $r(741) = -.13, 95\% \text{ CI } [-.1, -.073], p = .0001$ . Thus, hypothesized partial correlation analysis (H10) was conducted as dialecticism (measured by the AHS) as the predictor and economic conservatism as the outcome, controlling for the RISC scores. Results showed that the relationship between dialecticism and economic conservatism held after controlling for collectivism,  $r(740) = -.15, 95\% \text{ CI } [-.22, -.08], p = .0001$ . Although, in line with our expectations, dialecticism was positively correlated with collectivism measured by the RISC ( $r(741) = .07, 95\% \text{ CI } [.008, .1], p = .03$ ), hierarchical regression analysis showed that

the RISC did not account for additional variance in the relationship between dialecticism and economic conservatism,  $\Delta R^2 = .002$ ,  $F(1, 740) = 1.74$ ,  $p = .19$ .

Urban-rural difference in the relationship between thematic responding on the Triad Task and conservatism was examined (H11), relying on three different criteria for how to categorize participants as urban or rural. First, when the categorization was made based on the hometown size question (i.e., assigning people who reported that the place they resided the longest was a *metropolis* to the urban subset, and the rest to the rural subset), three GLM analyses with political orientation variables (social conservatism, economic conservatism, and single-item) urban/rural category variable, and the interaction between them as the predictor and the response style on the Triad Task as the outcome variable were conducted. Results revealed that interaction term was not a significant predictor of thematic responding on the Triad Task in any model (with social conservatism,  $\beta = -.05$ ,  $p = .21$ ; with economic conservatism,  $\beta = -.08$ ,  $p = .16$ ; with single-item,  $\beta = -.03$ ,  $p = .49$ )<sup>30</sup>. Separate GLM analyses for urban and rural categories revealed that scores on the Scale for Social Conservatism predicted thematic responses on the Triad Task both for urban,  $\beta = .05$ ,  $p = .003$ ,  $r(578) = .13$ , and rural category,  $\beta = .073$ ,  $p = .005$ ,  $r(161) = .23$ . However, when the data was split into urban and rural categories, political orientation measured by the single item ceased to be a significant predictor of response style on the Triad Task ( $\beta = .021$ ,  $p = .168$  for urban,  $\beta = .038$ ,  $p = .137$  for rural), which is probably related to power. Urban/rural distinction was also analyzed using population and population density of the longest resided places reported by the participants. Two

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<sup>30</sup> Urban/rural distinction was also not a significant predictor of thematic responding on the Triad Task in any model without the interaction term (with social conservatism,  $\beta = .02$ ,  $p = .08$ ; with economic conservatism,  $\beta = .02$ ,  $p = .09$ ; with single-item,  $\beta = .02$ ,  $p = .06$ )

GLMs were built including the interaction term (Social Conservatism x Population Size/Density) as the predictor. Results revealed no interaction between social conservatism and population size,  $\beta = -.017$ ,  $p = .2$ , and population density,  $\beta = -.013$ ,  $p = .35$ , while predicting thematic responses on the Triad Task<sup>31</sup>.

### 3.3.2 Exploratory Analyses

Correlation matrix for political variables, cognitive reflection, ambiguity tolerance, and holistic thinking measured by the AHS can be seen in Table 7.

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<sup>31</sup> The distribution of population and population density was highly bimodal, which we could not anticipate in the planning phase. Therefore, results should be treated with caution.

Table 7. Correlation matrix for political variables, religiosity, CRT, MSTAT-II, and AHS

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Social Conservatism		[-.02, .13]	[.43, .54]	[.60, .68]	[.01, .16]	[-.21, -.07]	[-.14, .00]	[.11, .25]	[.02, .17]	[.17, .30]	[.02, .16]	[-.12, .02]	[.05, .19]
2. Economic Conservatism	.05		[.13, .27]	[-.02, .12]	[-.20, -.06]	[-.05, .10]	[-.05, .10]	[-.25, -.11]	[-.22, -.08]	[-.12, .02]	[-.19, -.05]	[-.18, -.03]	[-.17, -.03]
3. Political Orientation	.49	.20		[.37, .48]	[-.07, .08]	[-.13, .01]	[-.11, .04]	[.05, .19]	[.01, .16]	[.11, .25]	[-.03, .11]	[-.11, .04]	[-.03, .12]
4. Religiosity	.64	.05	.43		[.06, .20]	[-.18, -.03]	[-.17, -.03]	[.14, .28]	[.07, .21]	[.20, .34]	[.05, .19]	[-.09, .06]	[-.02, .12]
5. RISC	.09	-.13	.00	.13		[-.15, -.01]	[-.21, -.07]	[.14, .28]	[.12, .26]	[.12, .26]	[.11, .25]	[-.13, .01]	[.00, .15]
6. CRT	-.14	.02	-.06	-.11	-.08		[.07, .21]	[-.12, .03]	[-.10, .04]	[-.17, -.03]	[-.06, .08]	[-.09, .06]	[-.06, .09]
7. MSTAT-II	-.07	.03	-.03	-.10	-.14	.14		[-.12, .03]	[-.06, .09]	[-.28, -.14]	[-.03, .11]	[-.04, .11]	[-.05, .09]
8. AHS	.18	-.18	.12	.21	.21	-.05	-.05		[.68, .75]	[.56, .65]	[.63, .71]	[.22, .36]	[.47, .58]
9. Causality	.10	-.15	.09	.14	.19	-.03	.02	.72		[.18, .31]	[.48, .58]	[-.02, .12]	[.12, .26]
10. Midway	.24	-.05	.18	.27	.19	-.10	-.21	.61	.24		[.16, .30]	[-.10, .04]	[.11, .25]
11. Contradiction	.09	-.12	.04	.12	.18	.01	.04	.67	.53	.23		[.01, .15]	[.12, .26]
12. Change	-.05	-.11	-.03	-.01	-.06	-.01	.03	.29	.05	-.03	.08		[-.24, -.10]
13. Attention	.12	-.10	.04	.05	.08	.01	.02	.53	.19	.18	.19	-.17	

*Note.* Pearson's correlation coefficients are represented below the diagonal with their 95% CIs above the diagonal. RISC: The Relational-Interdependent Self-Construal Scale. CRT: The Cognitive Reflection Test (I and II combined). MSTAT-II: The Multiple Stimulus Type Ambiguity Tolerance Scale-II. AHS: The Analysis-Holism Scale.

Zero-order correlations between subscales of the AHS and social and economic conservatism were examined (see Table 7 for correlation matrix). In contrast to our hypotheses and the findings from Study 1, social conservatism was found to be positively related to every subscale except the Change subscale for which no evidence for a relationship was observed. On the other hand, economic conservatism was found to be negatively related to each subscale except the Midway subscale.

Religiosity was thought to account for this unexpected pattern, since it is strongly correlated with social conservatism and also with the AHS and its subscales (see Table 7). Partial correlation analyses, indeed, supported this view. When religiosity was controlled, the correlation between social conservatism and the AHS became much closer to zero and nonsignificant ( $r(740) = .06, p = .08$ ); and the same was true for Causality ( $r(740) = .01, p = .88$ ), and Contradiction ( $r(740) = .02, p = .68$ ). Positive relationship was still significant for Midway ( $r(740) = .08, p = .02$ ) and Attention ( $r(740) = .11, p = .002$ ).

In order to explain the religiosity-holism relation based on the social orientation hypothesis, its relation to collectivism was examined. Pearson's correlation coefficient revealed that religiosity was positively related to collectivism measured by the RISC,  $r(741) = .13, p = .0004$ .

Since our hypothesis regarding the relationship between dialecticism and ambiguity tolerance was not met, we examined zero-order correlations between each subscale of the AHS and MSTAT-II. Only Midway subscale was found to be negatively related to ambiguity tolerance,  $r(741) = -.21, 95\% \text{ CI } [-.278, -.14], p = .000000007$  (see Table 7). A hierarchical regression model was built with the Midway

scores as the outcome variable and social conservatism and the MSTAT-II scores as the first- and second-step predictor variables respectively. Results showed that the inclusion of MSTAT-II improved the model,  $\Delta R^2 = .038$ ,  $F(1, 740) = 30.79$ ,  $p < .000001$ , however, it did not account for the relation between Midway scores and conservatism ( $\beta = .24$ ,  $SD = .02$ ,  $p < .000001$  before; and  $\beta = .22$ ,  $SD = .02$ ,  $p < .000001$  after the inclusion).

To examine whether taxonomic responses on the Triad Task took more time than thematic responses—in line with the reasoning that taxonomic responding might require more reflective thinking—a paired sample t-test was conducted. Results showed that thematic responses were faster ( $M = 3239.84$ ,  $SD = 1690.53$ ) than taxonomic responses ( $M = 3746.06$ ,  $SD = 2376.68$ ),  $t(633) = 453.89$ ,  $p < .000001$ , 95% CI for the mean difference [311.5, 596.283]<sup>32</sup>.

A CFA was conducted in order to test the idea of holistic thinking as a broad construct. First, an index for the Proverb Task was needed since the analyses containing this task did not rely on a single score. A dialectical thinking score was computed for each dialectical proverb for a participant by subtracting the mean composite score (for liking and agreement rates) on the non-dialectical proverbs of this participant. The scores on ten dialectical proverbs were then averaged to create a total dialecticism score based on the Proverb Task. This score was positively correlated with dialecticism score obtained from the AHS,  $r(741) = .34$ ,  $p < .000001$ . Then, to specify Change and Contradiction components separately in the CFA, proverbs were distinguished as emphasizing either Change or Contradictions. 5 proverbs were assigned to Change and 5 to Contradiction based on their content (see Appendix B). Scores on these separated sets correlated positively with the

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<sup>32</sup> This analysis excluded 2 data points with z-scores of 10.61 and 10.54 for mean difference.

corresponding subscales of the AHS ( $r(741) = .24, p < .000001$  for Change, and  $r(741) = .18, p < .000001$  for Contradiction). Finally, the measurement model with causality understanding (7 items of the AHS as indicators), midway approach towards contradictions (6 items of the AHS as the indicator), tolerance of contradictions (5 items of the AHS and 5 proverbs focusing on contradiction as indicator), expectation of change (7 items of the AHS and 5 proverbs focusing on change as indicator), locus of attention (6 items of the AHS as indicator), and categorization style (10 test trials in the Triad Task as indicator) as the first-order latent variables and holism as the second-order latent variable.

Results suggested poor fit,  $\chi^2(1218, N = 743) = 3206.84, p < .000001$ , indicating the model's predictions significantly deviated from the observed data. Although badness of fit indices showed good (RMSEA = .047) and acceptable fit (SRMR = .069), goodness of fit indices indicated poor fit (CFI = .733, TLI = .72). A second model was built excluding the second-order latent variable. Results were similar with the first model,  $\chi^2(1209, N = 743) = 3140.5, p < .000001$  (RMSEA = .046, SRMR = .066, CFI = .741, TLI = .726).

### 3.3.3 Summary of Results

We summarized the results of Study 2 in terms of whether they provided supporting evidence for our hypotheses or not in Table 8.

Table 8. Summary Table for Results of Study 2

Hypotheses	Support	Explanation
H1: Triad – Social Conservatism	✓	
H2: Triad –x Economic Conservatism	✓	
H3a: Triad – CRT	✓	
H3b: CRT/AHS in Triad – Social Conservatism	✓	
H4a: Dialecticism – Social Conservatism	X	
H4b: Dialecticism – Economic Conservatism	✓	
H5: Dialecticism – Ambiguity Tolerance	X	
H6: Ambiguity Tolerance in Dialecticism – Social Conservatism	N.A.	Conditional to H5
H7: Proverb Task – AHS	✓	
H8a: Proverb Task – Social Conservatism	X	
H8b: Proverb Task – Economic Conservatism	✓	
H9: Economic Conservatism – Collectivism	✓	
H10: Collectivism in Dialecticism – Economic Conservatism	X	
H11: Urban-Rural difference in Triad – Conservatism	X	

*Note.* The symbol “–” was used to represent an expected relationship between variables, whereas the symbol “–x” represents a lack thereof. In order to indicate that the hypothesis is about the mechanism underlying the relationship, we used the proposition “in”. In cases where a clear conclusion could not be reported (either supporting or not), an explanation was provided in the last column. CRT: The Cognitive Reflection Test (I and II combined). AHS: The Analysis-Holism Scale.

### 3.4 Discussion

Results of Study 2 replicated previous studies presenting a positive relationship between thematic response style on the Triad Task and social conservatism (Talhelm, 2018; Talhelm et al., 2015). For the Scale of Social Conservatism, this result held regardless of whether zero-order correlations or binomial-linked GLM was used.

Moreover, contrary to the results of Study 1, the single-item political orientation question was also a significant predictor of response style on the Triad Task when analyzed via GLM. As expected, responses on the Triad Task were not related to economic conservatism.

These results can be interpreted as suggesting that the inability of Study 1 to replicate the Triad-politics relation was due to insufficient power. The change in the instructions (with the intent of neutralization) seems not to have an impact on participants' comprehension of the task, as distribution of holism scores based on the Triad Task was quite similar in Study 1 and Study 2 (see Figure 3 and Figure 8). That is to say, the word "congruent" used in the instruction in Study 1 probably did not lead participants to favor thematic pairings.

Triad Task scores were not correlated with holistic thinking tendency measured by the self-report scale. Only Causality subscale was found to be positively related to scores on the Triad Task, indicating that a more complex (vs. simple) causal attribution style was associated with choosing thematic pairings more than taxonomic ones on the Triad Task. This finding can fit into the theory behind holistic causality understanding as seeing the thematic relations between items (beyond systematic, and in a sense straightforward taxonomic relations) might coincide with a more complex causal attribution style. Parallel to this, Causality subscale included items like "Everything in the universe is somehow related to each other." and "Everything in the world is intertwined in a causal relationship." Thus, it is possible that people who perceive causality as more complex (vs. simpler) are more inclined to attend to the thematic (vs. taxonomic) relations on the Triad Task. However, this finding—together with Study 1's finding showing a negative relation between

Contradiction and Triad Task—might have resulted from type 1 error as the data did not display a stable pattern across studies. Replications are needed to settle this issue.

On the other hand, thematic responding on the Triad Task was negatively related to cognitive reflection (irrespective of the operationalization as CRT-I, CRT-II, the sum, or the average). This supports our hypothesis that response style on the Triad Task might be more strongly associated with reflective thinking than holistic thinking. The CRT being a better predictor of the response style on the Triad Task than the AHS in the hierarchical regression model also corroborated this reasoning. Moreover, in line with the findings of Study 1, taxonomic pairings took more time than thematic pairings on average, which further suggests that taxonomic responding on the Triad Task might require more effortful thinking than thematic responding. These findings altogether provide preliminary evidence to build on in future experimental work.

Concerning the dialecticism-politics relation, the detected negative relationship between dialectical thinking and economic conservatism was replicated. However, no evidence for a relationship between dialecticism and social conservatism was observed. Results of exploratory analyses revealed a pattern different than that of Study 1, that was rather more consistent across multiple aspects of holism. That is, while social conservatism was positively related to holistic thinking (except Change), economic conservatism was negatively correlated with holism (except Midway). Nevertheless, in case of social conservatism, positive relationship between political ideology and Causality and Contradiction disappeared when religiosity was statistically controlled. Therefore, though the expected negative relationship between social conservatism and dialecticism was not observed, differential relations between conservatism and separate components of holism were

still present. More specifically, social conservatism seemed to positively correlate with holistic locus of attention and the midway approach towards contradictions, but not with holistic expectations of change, tolerance of contradictions, and holistic causality understanding beyond the effects of religiosity. This pattern suggests that lumping these components under a single label (holism) is not a viable strategy; holism is not a coherent construct.

The trifold relationship expected between dialecticism, social conservatism, and ambiguity tolerance could not be tested. This was because no evidence for a dialecticism-ambiguity tolerance relation was observed, and social conservatism was unexpectedly found to be not related to dialecticism. Examination of the relationship between ambiguity tolerance and separate subscales of the AHS revealed that the midway approach towards contradiction was negatively related to ambiguity tolerance. Although this finding seems counterintuitive in a theoretical sense—as the construct itself is related to the simultaneous acceptance of opposite information about a single entity (Choi et al., 2007), which should leave space for ambiguities—it came as no surprise because we were convinced that the original self-report measure falls short of capturing the essence of dialectical attitudes toward contradictions. This particular subscale seems to measure the tendency to take a midway approach to avoid potential conflicts rather than the capacity or tendency to accept contradictory elements together. Results indicated a moderate positive correlation between these two tendencies ( $r = .32$  in Study 1, and  $r = .23$  in Study 2) and a stronger relation of both with causality than with each other (see Table 4 and Table 7 for Study 1 and Study 2 respectively). It might have worked well in other cultures, where these two tendencies may coincide more often than not, but in Turkey it is difficult to interpret the items as dialectical without an explicit emphasis

on active acceptance of oppositions. Therefore, this finding was important in that it corroborated our suspicions about this specific subscale and proved the necessity to modify the Contradiction subscale in a manner responsive to this shortcoming.

Study 2 also aimed at investigating collectivism as a possible mechanism underlying the relationship between economic conservatism and dialecticism. Although the expected pattern of relations between the three variables of interest—collectivism correlated positively with dialecticism and negatively with economic conservatism—was observed, collectivism did not account for the relationship between dialecticism and economic conservatism. Thus, economic conservatism might have an impact on dialectical thinking (or vice versa) beyond the effect of collectivism and further experimental research is needed to make sense of this relationship and to establish the causal direction.

The Proverb Task was considerably improved compared to Study 1. Implemented modifications based on the content of proverbs improved the scale both in terms of reliability (Cronbach's  $\alpha$  increased from .55 to .78 for dialectical, from .61 to .78 for non-dialectical proverb sets) and construct validity (its correlation with the corresponding AHS subscales increased from .14 to .33). Furthermore, results regarding the relation between dialecticism and conservatism based on the AHS scores (negative relationship with economic conservatism and no evidence for a relationship with social conservatism and single-item political orientation question) were directly replicated with the Proverb Task. Thus, it can be said that the aim of developing a preference-based measure of dialectical thinking was satisfied.

Hypothesized urban/rural difference in the relationship between Triad Task responses and political ideology was again not observed. Operationalization was

made in three different ways (based on hometown size question as in Study 1, on population of the longest resided place, and on population density of the longest resided place) and regardless of which one was used, residential difference did not interact with political orientation to predict response style on the Triad Task. Results based on population and population density should be treated with caution, as distribution was highly bimodal with Istanbul on one end and all the other cities on another. The inability of the present studies to replicate urban/rural difference in the Triad-conservatism relation might result from demographic characteristics of the samples. Our samples predominantly consisted of highly educated people from metropolis or cities (see Table 1). As Talhelm (2018) argued that the urban/rural difference might result from the rural population's lack of deep knowledge about politics, our non-significant results should not be surprising.

One important aim of the present research was to discuss the use of *holism* as an overarching construct in the literature. As argued in the Introduction of this thesis, relationship between different constructs that have been used as indicators (even as substitutes) of the broader construct *holism* is vague, at least at the individual level and outside of Eastern cultures with a longstanding tradition of holistic thought and living. Results of the confirmatory factor analysis supported this view while revealing that different measures—often used separately in the literature to make inferences about the construct *holism*—did not seem to reflect an underlying latent variable.

## CHAPTER 4

### GENERAL DISCUSSION

The present research aimed at examining the relationship between holistic thought style and political ideology. The primary emphasis was laid on the previously detected positive relationship between holism (operationalized via thematic response style on the Triad Task) and social conservatism, with reference to a possible alternative explanation based on cognitive reflection. Although Study 1 yielded ambiguous results with respect to this relationship, the results of Study 2 replicated previous findings with a larger sample and methodological improvements on Study 1. However, in both studies, no evidence was observed for a relationship between response style on the Triad Task and analytic/holistic thinking tendency (measured by the self-report scale AHS). On the other hand, results of Study 2 revealed a negative relationship between thematic responding on the Triad Task and cognitive reflection. Also, exploratory analyses showed that thematic responses were faster in average compared to taxonomic responses, which might signal a difference in necessary effort between the two types of responses. These results can be interpreted so that previously detected relationship between response style on the Triad Task and conservatism might have resulted from cognitive reflection rather than analytic/holistic thinking.

We also intended to extend these findings by investigating differential relations of political ideology with multiple components of holism. As hypothesized, Study 1 revealed that some aspects of holism negatively correlated with social conservatism, which was the opposite of the pattern observed based on the Triad

Task. While only midway approach towards contradictions was positively correlated with social conservatism, holistic expectations of change, holistic causality understanding, and tolerance of contradictions (when controlling for religion) were negatively correlated with social conservatism. Study 2 showed that holistic locus of attention, in addition to the midway approach, was positively related to social conservatism. Contrary to Study 1, positive relationships were detected between social conservatism, holistic causality understanding, and tolerance of contradictions; however, these findings were accounted for by religiosity.

Finally, Study 1 and Study 2 revealed that economic conservatism was negatively related to holism (except locus of attention in Study 1, and midway approach in Study 2). We predicted that collectivism could explain this finding; however, results of Study 2 suggested that this variable alone could not account for the relationship between economic conservatism and holism.

## 4.1 Implications

### 4.1.1 Political psychology

The present studies contributed to the relevant literature in the intended way by demonstrating that the relationship between cultural thought styles and political orientation is not as straightforward as the past research suggested. As accentuated in the Introduction of this thesis and the writings of Spencer-Rodgers et al. (2018), Eastern way of thinking (name it holism or naive dialecticism) consists of multiple components which do not necessarily need to constitute a rigid or even a coherent whole. Therefore, different components of holistic thought might (indeed did, as shown by the present research) differentially relate to political ideology. One should

investigate these different components—and even different measures assumed to tap on a particular component—in relation to political variables before arguing for a particular conclusion about this relationship.

One of the reasons why it is too tempting to jump into conclusion on this matter could be the tacit assumption on the similarity between analytic (holistic) and reflective (intuitive) thinking. Following the theorizing of Evans and Stanovich (2013) and Buchtel and Norenzayan (2009), we argued that these are distinct constructs, albeit sharing some secondary features. Specifically, being abstract and rule-based (vs. contextualized and associative) is associated both with reflective (Frankish & Evans, 2009) and analytic thinking (Nisbett et al., 2001). This is particularly important within the scope of this thesis, as the Triad Task—which is a primary measure used to assess holistic thought—relies on differences in categorization styles as either rule-based or associative. Therefore, the observed relation between response style on the Triad Task and social conservatism could be attributed to reflective thought, rather than the analysis/holism distinction. The present research shed some light on this possibility while showing that taxonomic responses on the Triad Task was related to cognitive reflection (but not to holistic thinking tendency as a whole) and they took more time compared to thematic responses. Thus, results of the current research further our understanding about the Triad-politics relation.

Finally, the two studies in this thesis revealed a robust negative relationship between economic conservatism and holistic thinking. This relationship was larger and more consistent compared to that of social conservatism. This finding was unexpected considering the lack of strong evidence (or mixed evidence at best) for a relationship between economic conservatism and cognitive style variables (Crowson,

2009; S. Adil Sarıbay & Yılmaz, 2017; Sidanius, 1978; Talhelm, 2018; Talhelm et al., 2015; Yılmaz & Sarıbay, 2017; Yılmaz & Sarıbay, 2016, 2017). In a similar vein, Talhelm (2018) and Yılmaz et al. (2020) concluded that social conservatism could be a better predictor of cognitive styles compared to economic conservatism. Our results might reveal a specific instance where this pattern is reversed. That is, economic conservatism is more strongly related to cultural thought styles than social conservatism, at least in Turkey.

Our results are also valuable in that they provided an analysis based on a non-Western and predominantly Muslim sample, as in psychology, a great majority of the samples utilized to understand human behavior have been drawn from WEIRD (Western, educated, industrialized, rich, and democratic) populations which constitute only 15% of the world population (Henrich et al., 2010). The previously observed relation between the Triad Task and politics relied on samples drawn from the U.S. and China (Talhelm, 2018; Talhelm et al., 2015). Also, analytic and holistic thinking styles were predominantly studied in the North America, Western Europe, and East Asia where they were initially discovered (Norenzayan et al., 2007). Although the majority of our sample was highly educated students at Bogazici University—where democratic values prevail—and leaned toward the liberal end of the political spectrum (even in the community sample in Study 2), it is outside the regions where theories about the relevant concepts were built and largely studied. Thus, replication of this relationship in a Turkish sample gives valuable information about its generalizability.

#### 4.1.2 Cross-cultural psychology

Contribution of the present research to the cross-cultural psychology literature is two-fold; first at the measurement, and second at the conceptual level. Results of the two studies in this thesis showed that the modifications implemented on the AHS enhanced the scale both in terms of reliability and more crucially theoretically. In particular, the insufficiency of the original Contradiction subscale in the AHS to capture holistic attitudes toward contradictions was demonstrated across two studies. The new subscale created with a focus on being able to acknowledge contradictions were differently related to conservatism and ambiguity tolerance than the original subscale emphasizing a midway approach. Also, the two subscales only moderately correlated with each other and more strongly correlated with another subscale (Causality) than with each other. These results reflect that the midway approach may not necessarily result from tolerance of contradictions characteristic of holistic thinkers and the difference in emphasis between the two subscales (avoidance of conflict and active acceptance of contradiction) might be crucial, especially in domains like political attitudes. Since the AHS is the most commonly used self-report measure for individual differences in analytic and holistic thinking tendency (for a review, see Koo et al., 2018), it is important to be cognizant about this weakness.

Furthermore, a new preference-based measure of dialectical thinking (with an emphasis on tolerance of contradictions and holistic expectations of change) based on proverbs was created. Significant improvements were achieved in terms of reliability and construct validity of this Proverb Task in Study 2 compared to Study 1. Accordingly, dialecticism scores on the Proverb Task were correlated with the corresponding subscales of the AHS, and the pattern of relationship between

dialecticism and political attitudes demonstrated based on the AHS was directly replicated with this new measure.

Development of a reliable preference-based measure was important because previously used tasks did not behave as expected in our undergraduate sample in a pilot study. To be able to measure and manipulate the corresponding components of holism in future studies, we needed a measure whose reliability and validity were established in Turkish samples. Moreover, to the best of our knowledge, there exists only one method for priming dialecticism that is based on a scenario of an epiphany during meditation (Maddux et al., 2007). We thought that using this meditation scenario as a dialecticism prime could lead to bias as attitudes toward meditation might be related to a particular set of characteristics, which lead the prime to be more effective (or ineffective) for certain groups. Indeed, recent research showed that inclination towards New Age spiritualism was related to some personality and cognitive characteristics (for a review, see Farias & Granqvist, 2007). Therefore, proverbs (with their abstract nature) might be a better, less confounded tool to manipulate dialecticism.

At the conceptual level, the differential relations of holistic thinking with political orientation that were detected based on the Triad Task and some subscales of the AHS might have important implications for the nature of *holism* as a broad construct (as used in the previous literature). As argued by some researchers (Na et al., 2010) and articulated in the Introduction of this thesis, different tools (all of which were assumed to measure holistic thinking) might not behave in the expected ways at the individual level. Thus, what we determined as different *aspects* of a broader construct might actually not constitute a meaningful and coherent whole.

This situation could hinder the accuracy of our conclusions about the allegedly broader construct (i.e., holism) based on these distinct measures.

At this point, it is important to highlight a critical inquiry by Talhelm et al. (2015). Specifically, they questioned the fit of their results with the literature as past research demonstrated that conservatives tend to make more internal causal attributions which is actually observed more frequently in Western populations compared to Easterners (Morris & Peng, 1994). This finding together with the findings of Talhelm et al. (2015) revealed a mixed pattern, as holism was found to be differentially related to conservatism depending on its operationalization as causal attribution or as categorization style. To resolve this issue, they suggested that causal attribution style may not be central to the distinction between analytic/holistic thought. As mentioned previously in the present article, Spencer-Rodgers et al. (2018) classified the differences in causal attribution styles (as well as categorization and field-dependence/independence) as the outcome of the principle of interconnectedness in naive dialecticism. Thus, there exists no reason to assume that choosing thematic pairs in the Triad Task captures holism better than the tendency to make internal causal attributions. All in all, together with the results of Talhelm and colleagues' (2018; 2015) studies, the present data provides some important insights not only on the relationship between thinking styles and political ideology but also on the looseness of the construct *holism*, especially when used outside of Eastern cultures and at the individual level.

## 4.2 Holism and economic attitudes

To the best of our knowledge, the present research is the first that demonstrated a relationship between holistic thinking and left-wing economic attitudes. That is, the more one tends to think in a holistic (vs. analytic) fashion, the more one supports notions such as governmental regulations on the market, higher taxes on the rich, and welfare legislation. After Study 1 revealed this pattern, we reasoned that it might be due to collectivism; more specifically, holistic thinking results from collectivism which also leads to left-wing economic opinions. Previous research also showed that collectivism and economic liberalism were related at the individual level (Gerganov et al., 1996). Results of Study 2 replicated this finding; however, it did not account for the relationship between holism and economic attitudes. Therefore, the observed relationship between holism and economic conservatism could not be explained solely based on collectivistic tendencies on holistic thinkers. Thus, it might be useful to search for other possible explanations.

One possibility is that holistic thinkers support left-wing economic policies out of a need for security. Because they anticipate the future to be more uncertain compared to analytic thinkers, they might imagine their relative position in society to be more vulnerable to changes. Anecdotally, when approaching social justice issues, it is common for Turkish people to say “I might be in need (in this position) someday”, regardless of the nature of the situation (e.g., financial need, need for organ donation, need for respect and dignity for disabled people). The strength of this possibility of being in need might be perceived as greater by holistic thinkers, which in turn leads them to vote for governmental regulations in economic domain to feel safe. Recent research also supported this account by showing that need for security

and certainty predicted left-wing economic attitudes across a variety of nations (Malka et al., 2014).

Another possibility can be suggested based on procedural fairness which is defined as people's perceptions of the fairness regarding the procedure of allocating resources (Leventhal, 1980). Governmental regulations in the economic domain might be perceived as unfair by people as it involves an unbalance between the rich and the poor in terms of the given and the received. Recent research revealed that holistic thinkers were less likely to perceive policies of affirmative action as unfair compared to analytic thinkers (Hideg & Ferris, 2017). The reasoning behind this finding was that holistic (vs. analytic) thinkers can better deal with contradictions and inconsistencies; thus, it might be easier for them to accept that the unfairness involved in one context may indeed lead toward fairness by fixing unfair consequences of inequalities. Governmental regulations of economy can be seen as similar to affirmative action in the sense that both are demanded to ensure social equality, which would explain the observed relation between holism and economic attitudes in our samples.

#### 4.3 Holism and religion

Religiosity was found to be positively correlated with some aspects of holistic thinking (namely complex causality understanding and attitudes toward contradictions). This led to spurious positive correlations between holism and social conservatism, as social conservatism strongly correlates with religiosity. As the religiosity-holism relation was not of primary interest in this thesis, this finding was exploratory. We can argue for some post-hoc explanations for the observed relation.

First of all, this finding seems reasonable with respect to the social orientation hypothesis. As Islam is a religion which encourages community worship and collectivistic values, holistic thinking tendency can be expected to be prevalent in Muslim populations. In parallel with this reasoning, previous research showed that both Italian Catholics and Israeli Jews exhibited more holistic reasoning compared to atheists, whereas atheists were more holistic than Dutch Calvinists based on a visual attention task (Colzato et al., 2010). Authors argued that while Catholicism and Judaism emphasize social solidarity, Calvinism prioritizes individual responsibility. Therefore, it is not surprising to find that religiosity and holistic thinking was positively related in a predominantly Muslim sample. Exploratory analyses also supported this view by showing that religiosity also positively correlated with collectivism.

Another possible explanation can be provided based on attitudes toward contradictions. Samson (2004) suggested that tolerance of contradictions characteristic of holistic thinkers might be systematically similar to embracing the contradictions in counter-intuitive beliefs, including those present in religions. For instance, in the Holy Trinity, the father, the son, and the holy spirit being one and the same can be parallel with the idea of Yin and Yang of the naïve dialecticism proposing the existence of opposing (or distinct) entities together (Franks, 2003). From this point of view, it can be argued that holistic thinking tendency might facilitate holding counter-intuitive religious beliefs, or quite the opposite, religious people can be used to tolerate contradictions which in turn might lead them to incline toward dialecticism with time.

A final argument can be proposed based on the direct similarities between holism and Islam. For example, in Islamic conception of the universe, everything is a

reflection of God, and the natural order is a result of this unity in multiplicity (Nasr, 2016). God is related to all of its creatures (Shah, 2016), and Man owes its wholeness to being intrinsically related to the greater whole (Abul-Fadl, 2016). All of these sound similar to the interconnectedness pillar of dialecticism. The AHS also contains items asserting that everything in the universe is somehow related and nothing is unrelated. Islam also resembles dialectical thought in its emphasis on balance and the middle ground. The Quran preaches its followers to adopt the middle way and avoiding extreme ends (Kamali, 2008). Considering these similarities, it is possible for religious people in Turkey to draw a correspondence between their religion and some statements on the AHS, which in turn lead to the positive correlation between religiosity and holism. The results showing that religiosity is particularly related to holistic attitudes toward contradictions and complex causality understanding (see Table 4 and Table 7) also supports this interpretation.

#### 4.4 Limitations and future directions

The literature on cultural thought styles contains inconsistencies both at the theoretical and at the measurement level. As argued in the section 1.6 of this thesis, there is no consensus on the conceptualization of holistic thought, its subcomponents, how they relate to each other and where they stand within this broad “umbrella” construct called holism. The uncertainty is even more apparent at the individual level and arguably in cultures outside the East Asia where these concepts were originated. In addition to these conceptual uncertainties, there is a validity and reliability problem with respect to the tools that are used to measure holistic thought (or some of its components). The Triad Categorization Task is one of the key

operationalization of holistic thought within the context of the current research, but as we discussed in the section 1.7 there is no strong empirical evidence demonstrating which cognitive processes this task actually captures. Furthermore, as we stated in the Footnote 7, some of the previously used measures of holistic thought have serious validity problems, since they were either unrelated to the holistic thinking tendency measured by the self-report scale or their relations were in the opposite direction than expected, based on a pilot test we conducted. Some of the measures had reliability values below the optimal range, both in the current research (see Table 2), and also in the original study where the self-report measure for the analytic/holistic thinking tendency was developed (Choi et al., 2007). Therefore, a major limitation for any research conducted in this framework is the validity and reliability problem regarding the concepts and the tools used to measure them. In each phase of this research, we tried to acknowledge this limitation and put it forward for discussion.

Studies in this thesis are cross-sectional. Therefore, we cannot make causal inferences about the questions asked based on the data at hand. Both Study 1 and Study 2 attempted at investigating underlying mechanisms of the hypothesized relations relying on partial correlations and hierarchical regressions. These attempts can only be evaluated as first steps and preliminary evidence for future studies to build upon. Causal link between holism (with a focus of its multiple components) and (a) social and economic conservatism, (b) cognitive variables like need for closure, tolerance of ambiguity, and cognitive complexity, and (c) CRT should be examined. Also, the argument on the similarities between the Triad Task and the CRT should be tested in an experimental design with cognitive reflection manipulation.

In addition to the correlational nature of the current studies, the use of too many measurements might have inflated the rate of type 1 error. We conducted two very similar studies, hence, had the opportunity to replicate some of the findings and to approach the significant results which did not replicate with caution. Also, we meticulously distinguished exploratory and confirmatory analyses and we chose not to report p-values in the correlation tables containing exploratory findings. Nevertheless, we still acknowledge this as a weakness of the present research.

There was a liberal bias in our sample, both in Study 1 and Study 2. The fact that extreme conservative end of the political spectrum was not represented might have led us to miss some important nuances. In addition, even our community sample was mostly students and highly educated individuals. The average of the CRT scores was 5.67 and 5.45 out of 7 in Bogazici University undergraduate sample and community sample, respectively. Together with the leaning toward left, this situation implies that we should be cautious while generalizing these findings to the general population. Future studies could try to achieve a more heterogenous sample, representative of right-wing ideologies as well as lower levels of education and cognitive abilities.

Understanding of holism's relation with economic conservatism and religiosity also requires further effort. Multiple explanations were offered in sections 4.2 and 4.3, which should be empirically tested in future studies. The possible explanation based on the procedural fairness might be especially fruitful for intervention and policy research. For instance, it might be studied in relation to attitudes toward Syrian refugees in Turkey.

## 4.5 Conclusion

The departing point of the present research was the idea that research conducted on individual differences in cultural thought styles was prone to misconceptions. This concern was two-fold. First, since these thought styles were defined at the cultural level, drawing strong conclusions on their equivalents at the individual level requires extreme caution, following the findings of Na et al. (2010). Second, similarities and distinctions between analytic/holistic and reflective/intuitive thinking should be considered carefully as research conducted on cultural thought styles has sometimes been treated as a direct reflection of dual processes, which is an approach criticized by some researchers (Buchtel & Norenzayan, 2009; Evans, 2009).

Research on the relationship between cultural thought styles and political ideology was suitable for our purposes as it taps on both of these points. As different components of holism—and their different measures—may not form a coherent whole at the individual level, reaching conclusions about the relationship between holism and a target variable (political ideology in the context of the present studies) requires a thorough examination of its multiple aspects. Results of the present studies indeed revealed that different components of holism might differentially relate to social and economic conservatism. Moreover, it provided some insight on the relationship between the Triad Task and conservatism with an emphasis on the similarities between this task and reflective thinking.

All in all, the most crucial contribution of the present research to the literature was theoretical refinements regarding the concept *holism*—at the individual level, and especially in cultures outside where the concept was originally defined—and its relationship to political ideology. Moreover, it opened new avenues for future

studies, especially with the finding on the relationship between economic conservatism and holistic thought.

## APPENDIX A

### TRIAD CATEGORIZATION TASK

#### 1. Çalışma Yönergeler (Study 1 Instructions)

Karşınıza çıkacak her ekranda 3 adet resim bulunmaktadır. Ekranın üst kısmında bir resim ve alt kısmında iki resim göreceksiniz. Sizden beklenen, yukarıdaki resmin, sayfanın alt kısmındaki resimlerden hangisine daha çok uyduğunu belirtmenizdir. Unutmayın ki bu sorunun doğru veya yanlış cevabı yoktur.

Seçiminizi belirtmek için klavyenin A ve L tuşlarını kullanmanız gerekmektedir. Soldaki resmi seçmek için A tuşuna, sağdaki resmi seçmek için L tuşuna basınız. Boşluk (Space) tuşuna basarak devam edebilirsiniz.

*(On each following screen, you will see 3 pictures, one at the top and two at the bottom. You are expected to choose the one from the bottom that is more congruent with the one at the top. Do not forget that there are no right or wrong answers.)*

*You can use the keys A and L to indicate your choice. To choose the picture at the left you should press the key A and to choose the picture at the right you should press the key L. You can continue by pressing the Space Bar.)*

#### 2. Çalışma Yönergeler (Study 2 Instructions)

**Dikkatle okumanızı rica ederiz. (Please read carefully)**

Bu etapta karşınıza çıkacak her ekranda 3 adet resim bulunmaktadır. Ekranın üst kısmında bir resim ve alt kısmında iki resim göreceksiniz. Sizden beklenen, yukarıdaki resmi, sayfanın alt kısmındaki resimlerden biriyle eşleştirmenizdir. Bu sorunun doğru veya yanlış cevabı yoktur. Eşleştirmeleri istediğiniz gibi yapabilirsiniz.

Seçiminizi belirtmek için klavyenin A ve L tuşlarını kullanmanız gerekmektedir. Soldaki resmi seçmek için A tuşuna, sağdaki resmi seçmek için L tuşuna basınız. Boşluk (Space) tuşuna basarak devam edebilirsiniz.

*(In this phase of the experiment, you will see 3 pictures on each screen, one at the top and two at the bottom. You are expected to match the picture at the top with one of the pictures at the bottom. There are no right or wrong answers to this question. You can match the pictures as you like.*

*You can use the keys A and L to indicate your choice. To choose the picture at the left you should press the key A and to choose the picture at the right you should press the key L. You can continue by pressing the Space Bar.)*

Önce bir örnek üzerinde deneyelim.

*(Let's try with an example first.)*

Bir sonraki ekranda deneyin nasıl çalıştığını gösteren bir deneme ekranı göreceksiniz. Deneye ilerlemek için yönlendirmeleri izleyin.

Örneği görmek için lütfen “Boşluk (Space)” tuşuna basın.

*(On the next screen, you will see an example trial. Please follow the instructions to continue to the experiment.*

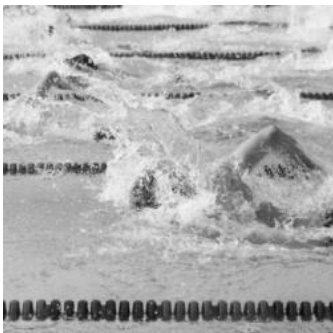
*To see the example, please press the Space Bar.)*

Training Triad:



Test Triads:

1.



2.



3.



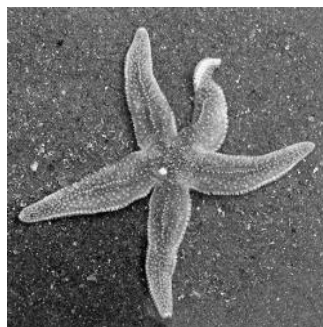
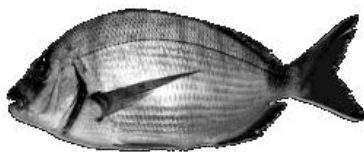
4.



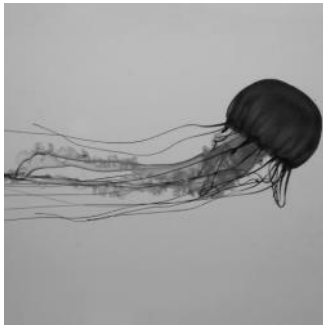
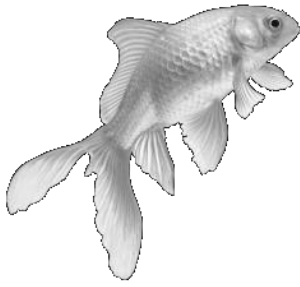
5.



6.



7.



8.



9.



10.



Filler Triads:

1.



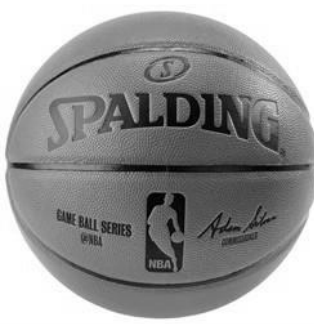
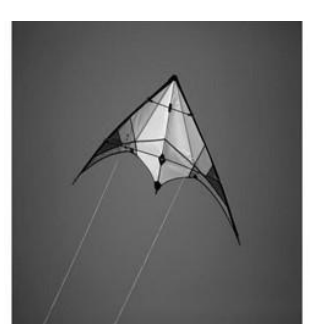
2.



3.



4.



5.



6.



7.

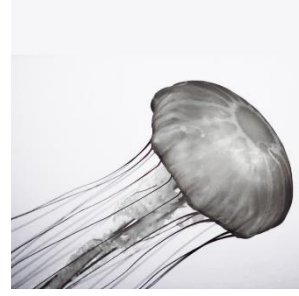


2. Çalışmada değişen görseller (*Pictures that changed in Study 2*):

Triad 6



Triad 7



Filler 2



Filler 2



Filler 4 :



Filler 4:



## APPENDIX B

### PROVERB TASK

#### Study 1:

Aşağıda bazı deyişlerle karşılaşacaksınız. Lütfen bunları dikkatlice okuyup her bir deyişi ne kadar beğendiğinizi belirtiniz.

1-----2-----3-----4-----5-----6-----7  
Hiç Çok

#### Dialectical Proverbs

1. Fazla tevazu kibirdendir. (*Too humble is half proud.*)
2. Yarım hakikat tam bir yalandır. (*Half a truth is still a whole lie.*)
3. Her cevabın yeni bir sorusu vardır. (*There is a new question to every answer.*)
4. Fazla gurur utancı doğurur. (*Too much honor is half a shame.*)
5. Bir şey ne kadar değişirse o kadar aynı kalır. (*The more something changes, the more it remains the same.*)
6. Ak koyunun kara kuzusu da olur. (*A white sheep might have a black lamb too.*)
7. Azı karar, çoğu zarar, ortası yarar. (*The less is moderation, the more is trouble, the middle is good.*)
8. Pek yaş olma, sıkılırsın; pek de kuru olma, kırılırsın. (*Do not be so wet that you would be pressed; do not be so dry that you would get broken.*)

### Non-dialectical Proverbs

1. İyiyeye gitmeyen kötüye gider. (*If things don't get better, they surely will get worse.*)
2. Ahmakla ahmaklıkta yarışılmaz. (*You can never catch up with a fool in his folly.*)
3. Dervişin fikri ne ise zikri de odur. (*Dervish behaves according to what he thinks.*)
4. Sabahında ne söylersen gecesinde onu görürsün. (*What we speak of by day we dream of by night.*)
5. Bir gram önlem bir kilo merheme denktir. (*An ounce of prevention is worth a pound of cure.*)
6. Arpa eken buğday biçmez. (*Who plants barley does not reap wheat.*)
7. Demir ıslanmaz, deli uslanmaz. (*Steel is non-wettable and mad does not sober.*)
8. Gök gürlemeden yağmur yağmaz. (*It does not rain without thundering.*)

### STUDY 2:

Aşağıda bazı deyişlerle karşılaşacaksınız. Lütfen bunları dikkatlice okuyup her bir deyiş ile ilgili soruları yanıtlayınız.

1-----2-----3-----4-----5-----6-----7

Hiç

Çok

Main question:

Bu deyiş ne kadar beğendiniz? (*How much you like this proverb?*)

Bu deyişe ne kadar katılıyorsunuz? (*How much you agree with this proverb?*)

Control questions:

Bu deyiş size ne kadar tanıdık geliyor? (*How familiar is this proverb to you?*)

Bu deyiş ne sıklıkla kullanıyorsunuz? (*How frequently you use this proverb?*)

Bu deyiş size ne kadar şiirsel geliyor? (*How poetical you find this proverb?*)

Dialectical Proverbs

*Note: Proverbs which were assigned to Change and Contradiction subscales for the exploratory analyses were shown in square brackets.*

1. İnsan dediğin demirden güçlü, sinekten zayıf. (*A man is stronger than iron and weaker than a fly*) [Contradiction]

2. Her çıkışın bir inişi vardır. (*Every uphill has its downhill.*) [Change]

3. Her cevabın yeni bir sorusu vardır. (*There is a new question to every answer.*) [Change]

4. Düşmanından değil dostundan sakın. (*Beware of your friends, not your enemies.*) [Contradiction]

5. Değişmeyen tek şey değişimin kendisidir. (*There is nothing permanent except change.*) [Change]

6. Her hayırda bir şer vardır. (*Every advantage has its disadvantage.*) [Contradiction]

7. Açılan solar,, ağlayan güler. (*The one that blossomed will fade, the one who cried*)

*will laugh.*) [Change]

8. Ak koyunun kara kuzusu da olur. (*A white sheep might have a black lamb to*

[Contradiction]

9. Hangi gün vardır akşam olmadık. (*The longest day must have an end.*) [Change]

10. Bir ağaçta gül de biter diken de. (*Both roses and thorns could sprout from a tree.*)

[Contradiction]

### Non-Dialectical Proverbs

1. İyiyeye gitmeyen kötüye gider. (*If things don't get better, they surely will get worse.*)

2. Dervişin fikri ne ise zikri de odur. (*Dervish behaves according to what he thinks.*)

3. Sabahında ne söylersen gecesinde onu görürsün. (*What we speak of by day we dream of by night.*)

4. Ak gün ağartır, kara gün karartır. (*Merry times bleach, dark times blacken.*)

5. Arpa eken buğday biçmez. (*Who plants barley does not reap wheat.*)

6. Böyle gelmiş böyle gider. (*It is always been this way and it always will be.*)

7. Eski dost düşman olmaz. (*The old friend could not be an enemy.*)

8. Demir ıslanmaz, deli uslanmaz. (*Steel is non-wetable and mad does not sober.*)

9. Perşembenin gelişi çarşambadan bellidir. (*Coming events cast their shadows before.*)

10. Ön tekerlek nereye giderse arka tekerlek de oraya gider. (*Hind wheel heads where the front wheel goes.*)

## APPENDIX C

### THE ANALYSIS-HOLISM SCALE

Lütfen aşağıdaki cümleleri dikkatle okuyup her birine ne kadar katıldığınızı işaretleyiniz.

1-----2-----3-----4-----5-----6-----7  
Kesinlikle Ne katılıyorum Kesinlikle  
katılmıyorum ne katılmıyorum katılıyorum

Not: Orijinal ölçüğe sonradan eklenen maddeler “\*” işareti ile, ters kodlanan maddeler ise “(R)” ile gösterilmiştir.

*(The newly added items were mark with the symbol “\*” and the reversed coded items were indicated with (R).)*

#### Causality

1. Evrendeki her şey bir şekilde birbiriyle ilişkilidir.

*(Everything in the universe is somehow related to each other.)*

2. Hiçbir şey ilişkisiz değildir.

*(Nothing is unrelated.)*

3. Dünyadaki her şey nedensel bir ilişkiyle iç içe geçmiştir.

*(Everything in the world is intertwined in a causal relationship.)*

4. Evrenin herhangi bir unsurundaki ufak bir değişiklik bile öteki unsurlarda önemli değişimlere yol açabilir.

*(Even a small change in any element of the universe can lead to significant alterations in other elements.)*

5. Her ne kadar bazı nedenleri bilinmese de, her olayın çok sayıda nedeni vardır.

*(Any phenomenon has numerous numbers of causes, although some of the causes are not known.)*

6. Her ne kadar bazıları bilinemez de olsa, her olay sayısız sonuç doğurur.

*(Any phenomenon entails a numerous number of consequences, although some of them maynot be known.)*

7. İlk bakışta ilişkisiz gibi görünen iki olayın birbirine bir nedenler zinciriyle bağlı olması muhtemeldir.\*

*(It is possible that there is a causal relationship between two events that seem unrelated at first sight.)*

#### Attitude Toward Contradiction (Midway)

8. Aşırıya kaçmaktansa orta yolu bulmak daha caziptir.

*(It is more desirable to take the middle ground than go to extremes.)*

9. İnsanlar aralarında anlaşmazlık olduğunda, uzlaşmak ve herkesin fikrine kucak açmak için yollar aramalıdır.

*(When disagreement exists among people, they should search for ways to compromise and embrace everyone's opinions.)*

10. Birinin görüşleri bir başkasınıninkilerle ters düştüğünde uzlaşma noktası bulmak, kimin haklı/haksız olduğunu tartışmaktan daha önemlidir.

*(It is more important to find a point of compromise than to debate who is right/wrong, when one's opinions conflict with other's opinions.)*

11. Kendinden farklı görüştekilerle anlaşmazlık içinde olmaksansa, uyum içinde olmak daha caziptir.

*(It is desirable to be in harmony, rather than in discord, with others of different opinions than one's own.)*

12. Bir tartışmada orta yolu seçmekten kaçınılmalıdır (R)

*(Choosing a middle ground in an argument should be avoided.)*

13. Aşırıya kaçmaktan kaçınmalıyız.

*(We should avoid going to extremes.)*

#### Attitude Toward Contradiction (Tolerance of Contradictions)

14. Birçok mesele birbirine zıt gözükken doğruları aynı anda barındıracak kadar inceliklidir.\*

*(A lot of issues are nuanced enough to contain contradictory truths simultaneously.)*

15. Evrendeki her şey birbirine zıt özellikler barındırabilir.\*

*(Everything in the universe can contain incompatible characteristics.)*

16. Bir şeyin belli bir özellikle nitelendirilmesi, karşıt bir özelliğe de sahip olmasına engel değildir.\*

*(Having a particular characteristic does not prevent having also an opposing feature.)*

17. Çok olumlu gözükken bir olgu veya kavram, çoğu zaman içinde olumsuzu da barındırır.\*

*(A phenomenon which looks positive usually contains negativity in it as well.)*

18. Başımıza gelen olumsuz olayların çoğu aslında ilerde doğacak olumlu etkilerin de tohumunu içinde taşır.\*

*(Most of our adverse experiences carry the seeds of future positive influences.)*

#### Perception of Change

19. Dünyadaki bütün olaylar öngörülebilir doğrultuda gelişir. (R)

*(Every phenomenon in the world moves in predictable directions.)*

20. Şu anda başarılı bir hayat yaşayan bir insan, başarılı olmaya devam edecektir.

(R)

*(A person who is currently living a successful life will continue to stay successful.)*

21. Şu anda dürüst olan bir kişi gelecekte dürüst kalacaktır. (R)

*(An individual who is currently honest will stay honest in the future.)*

22. Eğer bir olay belli bir yönde geliyorsa, o yönde gitmeye devam edecektir.

(R)

*(If an event is moving toward a certain direction, it will continue to move toward that direction.)*

23. Mevcut durumlar her an değişebilir.

*(Current situations can change at any time.)*

24. Gelecek olaylar mevcut durumlara dayanarak öngörülebilir. (R)

*(Future events are predictable based on present situations.)*

25. Sürekli artış gösteren bir durumun artmaya devam etmesi düşüş göstermesinden daha olasıdır. (R)\*

*(A continuously increasing state is more likely to increase rather than to decrease.)*

#### Locus of Attention

26. Bir olguyu anlamak için parçalarındansa bütünü göz önüne alınmalıdır.

*(The whole, rather than its parts, should be considered in order to understand a phenomenon.)*

27. Parçalardansa bütüne dikkat etmek daha önemlidir.

*(It is more important to pay attention to the whole than its parts.)*

28. Bütün, parçalarının toplamından daha büyüktür.

*(The whole is greater than the sum of its parts.)*

29. Ayrıntılardan bütünü bir bağlama dikkat etmek daha önemlidir.

*(It is more important to pay attention to the whole context rather than the details.)*

30. Büyük resmi hesaba katmadan parçaları anlamak mümkün değildir.

*(It is not possible to understand the parts without considering the whole picture.)*

31. Birinin davranışını anlamak için kişiliğinin yanı sıra karşı karşıya kaldığı durumu da göz önünde bulundurmalıyız.

*(We should consider the situation a person is faced with, as well as his/her personality, in order to understand one's behavior.)*

32. Sonradan fark ettiğimiz bir detay, bir olguya bakışımızı kökten değiştirebilir.

*(R)\**

*(A detail noticed afterwards can totally change our view of a phenomenon.)*

33. Bir sistem bozulduğunda bozuk parçaya odaklanmaktansa tüm sisteme odaklanmak daha gereklidir.\*

*(When a system is corrupted, it is more important to focus on the whole system rather than on the single broken part.)*

## APPENDIX D

### COGNITIVE REFLECTION TEST

#### CRT-I

1. Bir beyzbol sopası ve bir beyzbol topu 1.10 TL tutuyor. Beyzbol sopası, beyzbol topundan 1.00 TL daha pahalı. Buna göre beyzbol topunun fiyatı nedir? (kuruş cinsinden)

*(A ball and a bat costs 1.10 TL. The bat is 1.00 TL more expensive than the ball. How much does the ball cost?)*

Intuitive Answer: 10 kuruş – Analytic Answer: 5 kuruş

2. 5 makine 5 parçayı 5 dakikada üretiyor. Buna göre 100 makine 100 parçayı kaç dakikada üretir?

*(5 machines make 5 widgets in 5 minutes. How many minutes does it take for 100 machines to make 100 widgets?)*

Intuitive Answer: 100 dakika - Analytic Answer: 5 dakika

3. Bir gölün belli bir alanı nilüfer yapraklarıyla kaplı. Bu alanın büyüklüğü her gün iki katına çıkmaktadır. 48 günde bu alan gölün tamamını kapladığına göre, kaç günde gölün yarısını kaplar?

*(A certain area of a lake is covered with lotus leaves. The size of this area doubles every day. If this area covers the entire lake in 48 days, how many days does it take to cover half the lake?)*

Intuitive Answer: 24 gün – Analytic Answer: 47 gün

## CRT-II

1. Siz bir kořu yarışındasınız ve ikinci olan kişiyi geçtiniz kaçınca sıraya yükselirsiniz?

*(You are in a race and you just beat the person who was in the second place.*

*What is your placing now?)*

Intuitive Answer: 1. – Analytic Answer: 2.

2. Bir çiftlikte 15 tane koyun var. 8 tanesi hariç hepsi öldü, geriye kaç tane kaldı?

*(There are 15 sheep on a farm. All but eight are dead, how many are left?)*

Intuitive Answer: 7 – Analytic Answer: 8

3. Ayşe'nin babasının 3 tane çocuęu var. İlk iki çocuęunun adı Eylül ve Ekim ise üçüncü çocuęunun adı nedir?

*(Ayşe's father has 3 children. If the names of the first two children are Eylül and Ekim, what is the name of the third child?)*

Intuitive Answer: Kasım – Analytic Answer: Ayşe

4. 3 metre derinliğinde, 3 metre uzunluęunda, 3 metre genişliğinde (boş) bir çukurun içinde kaç metreküp toprak vardır?

*(How many cubic meters of soil are there in a 3-meter-deep, 3 meter long, 3 meter wide (empty) pit?)*

Intuitive Answer: 27 – Analytic Answer: 0

## APPENDIX E

### NEED FOR COGNITIVE CLOSURE

Lütfen aşağıdaki cümleleri dikkatle okuyup her birine ne kadar katıldığınızı işaretleyiniz.

1-----2-----3-----4-----5-----6-----7  
Kesinlikle Ne katılıyorum Kesinlikle  
katılmıyorum ne katılmıyorum katılıyorum

1 = order, 2 = predictability, 3 = decisiveness (revised scale), 4 = ambiguity, 5 = closed-mindedness.

1. Belirsiz olan durumlardan hoşlanmıyorum. (4)

*(I don't like situations that are uncertain.)*

2. Birden fazla şekilde cevaplanabilen sorulardan hoşlanmam (5)

*(I dislike questions which could be answered in many different ways.)*

3. Planlı programlı iyi düzenlenmiş bir hayat benim mizacıma uygundur (1)

*(I find that a well ordered life with regular hours suits my temperament.)*

4. Hayatımda neden olduğunu anlamadığım bir olay olduğunda kendimi rahatsız hissedirim (4)

*(I feel uncomfortable when I don't understand the reason why an event occurred in my life.)*

5. Birisinin, gruptaki herkesin ortak olarak inandığı bir şeye katılmadığı bir durumda kendimi rahatsız hissederim (5)

*(I feel irritated when one person disagrees with what everyone else in a group believes.)*

6. Tam olarak ne olacağını bilmeden bir olaya dâhil olmaktan hoşlanmam. (2)

*(I don't like to go into a situation without knowing what I can expect from it.)*

7. Bir karar verdiğim zaman kendimi rahatlamış hissederim. (3)

*(When I have made a decision, I feel relieved.)*

8. Bir problemle yüzleştiğim zaman çözüme hızlıca ulaşmak için aşırı çaba sarf ederim. (3)

*(When I am confronted with a problem, I'm dying to reach a solution very quickly.)*

9. Bir probleme hemen çözüm bulamazsam birden tahammülsüz ve tedirgin hale gelirim. (3)

*(I would quickly become impatient and irritated if I would not find a solution to a problem immediately.)*

10. Beklenmedik şeyler yapabilecek kişilerle olmaktan hoşlanmam. (2)

*(I don't like to be with people who are capable of unexpected actions.)*

11. Birisinin sözlerinin birden fazla anlama gelmesinden hoşlanmam. (4)

*(I dislike it when a person's statement could mean many different things.)*

12. Belirli bir rutinimin olmasının hayatı daha eğlenceli hale getirdiğini düşünüyorum. (1)

*(I find that establishing a consistent routine enables me to enjoy life more.)*

13. Net ve programlı bir yaşam tarzım olmasından hoşlanırım. (1)

*(I enjoy having a clear and structured mode of life.)*

14. Genelde kendi görüşümü oluştururken birden fazla bakış açısına başvurmam. (5)

*(I do not usually consult many different opinions before forming my own view.)*

15. Sonu önceden kestirilemeyen durumlardan hoşlanmam. (2)

*(I dislike unpredictable situations.)*

## APPENDIX F

### SCALE OF SOCIAL CONSERVATISM

Lütfen aşağıdaki ifadeleri dikkatle okuyup her birine ne kadar karşı olup olmadığınızı işaretleyiniz.

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Tamamen karşıyım					Nötrüm					Hiç karşı değilim

- 1) İdam cezasına (Henningham)  
(*Death penalty*)
- 2) Daha sert hapis cezalarının uygulanmasına (Henningham)  
(*Stiffer jail terms*)
- 3) Gönüllü ötenaziye (Henningham) R  
(*Voluntary euthanasia*)
- 4) Eşcinsel evliliğe (Yılmaz & Sarıbay; changed “gay rights” in Henningham to “gay marriage”) R  
(*Gay marriage*)
- 5) Kumar oynamanın serbest hale getirilmesine (Yılmaz & Sarıbay; changed “illegalization” in Yılmaz & Sarıbay to “legalization”) R  
(*Legalization of gambling*)
- 6) Evlilik öncesi cinsel ilişkiye (Henningham; changed “premarital virginity” to “premarital sex”) R  
(*Premarital sex*)

- 7) Göçmenlerin ülkeye girişine karşı daha katı kurallar getirilmesine (Yılmaz & Sarıbay; changed “Asian immigrants” in Henningham to “immigrants in general”)  
*(Stricter laws against immigrants entering the country)*
- 8) Hangi yaş olursa olsun porno izlemenin yasal bir suç haline getirilmesine (Yılmaz & Sarıbay)  
*(Illegalization of porn watching, regardless of age)*
- 9) Kürtajı bütünüyle yasaklamaya (Henningham)  
*(Illegalization of Abortion)*
- 10) Esrar içiminin serbest bırakılmasına (Yılmaz & Sarıbay) R  
*(Legalization of marijuana consumption)*
- 11) Genç insanların ebeveynlerinin izni olmadan cinsellik konusunda bilgilendirilmelerine (Yılmaz & Sarıbay; “birth control” is changed to “sexuality”) R  
*(Education of young people about sexuality without their parents’ consent)*
- 12) Bir kadın ve bir erkeğin evlenmeden aynı evde yaşamasına (Yılmaz & Sarıbay) R  
*(A boy and a girl living in the same house without getting married)*
- 13) Kız ve erkek öğrencilerin ayrı okullarda eğitim almasına (Yılmaz & Sarıbay; changed “mix-sex” in Yılmaz & Sarıbay to “separate-sex”)  
*(Boys and girls receiving separate-sex education)*
- 14) Osmanlıca dersinin tüm liselerde zorunlu ders olarak okutulmasına (Yılmaz & Sarıbay)  
*(Mandatory Ottoman language courses in all high schools)*

## APPENDIX G

### ECONOMIC CONSERVATISM SCALE

Lütfen aşağıdaki cümleleri dikkatle okuyup her birine ne kadar katıldığınızı işaretleyiniz.

1-----2-----3-----4-----5-----6-----7  
Kesinlikle Ne katılıyorum Kesinlikle  
katılmıyorum ne katılmıyorum katılıyorum

1) Hemen her alanda devletten çok daha verimli ve başarılı çalıştığı için özel teşebbüs daha iyidir. (Küçüker, 2007)

*(Private venture is superior because it functions more efficiently and successfully than the state in almost all domains.)*

2) Devlet ekonomiye müdahale etmemelidir. (Küçüker, 2007)

*(The state should not interfere with economy.)*

3) Devlet küçüldükçe bireylerin özgürlüğü artar. (Küçüker, 2007)

*(Individual freedom increases as the state becomes smaller.)*

4) Özel hastaneler daha kaliteli hizmet verdiği için devlet hastaneleri özel sektöre devredilmelidir (Küçüker, 2007) (“schools” is changed to “hospitals”)

*(Public hospitals should be handed over to the private sector because private hospitals provide higher quality service.)*

5) Devletin ekonomik planlama yetkisi arttıkça rejim diktatörlüğe dönüşür.

(Küçüker, 2007)

*(As the state's power for economic planning increases, the regime grows more dictatorial.)*

6) Devlet dediğimiz kurum giderek daha az vergi toplamaya ve daha az hizmet etmeye doğru gitmelidir.

*(The institution we call the state should increasingly move toward less tax collection and less service provision.)*

7) Zengin insanların yatırım yapmaları için teşvikler artırılmalıdır.

*(Incentives for encouraging rich people to invest should be increased.)*

8) Hayırseverlik devletin değil, kişilerin sorumluluğudur, dolayısıyla devlet halka yardımseverlikte bulunmamalıdır.

*(Charity is individuals' responsibility, not the state's. Therefore, the state should not be charitable toward the people.)*

9) Devlet gelir eşitsizliğini düzeltmek için zenginlerden daha çok, fakirlerden ise daha az vergi almalıdır. R

*(The state should collect more taxes from the rich and less from the poor in order to fix income inequality.)*

10) Ekonomik geliri düşük olan insanların sağlık harcamaları bütünüyle devlet tarafından karşılanmalıdır. R

*(Health expenses of economically disadvantaged people should be completely covered by the state.)*

11) Devlet eğer özel teşebbüsleri tamamen serbest bırakırsa, onlar işçilere her türlü zulmü yapabilirler. R

*(If the state sets private venture completely free, they could carry out all sorts of cruelties toward workers.)*

12) Devletin giderek küçülmesi, gelir eşitsizliğini daha da artırır. R

*(The shrinking of the state would increase income inequality even more.)*

13) Devlet sosyal eşitliği sağlamak adına ekonomiye müdahale etmelidir. R

*(The state should interfere with the economy in order to provide social equality.)*

14) Özelleştirme uygulamaları zenginlerden yanadır ve yasaklanmalıdır. R

*(Privatization schemes benefit the rich and should be prohibited.)*

15) Evsiz insanlara ya da sokak çocuklarına bakmak devletin bir numaralı görevidir.

*(To take care of homeless people or kids who live on the street is state's number one priority.)*

16) Devlet insanlara daha iyi bir yaşam standardı vermek için her türlü harcamayı yapmalıdır. R

*(The state should undertake any expenditure to provide people with a higher standard of living.)*

## APPENDIX H

### DEMOGRAPHIC FORM

1) Cinsiyetiniz (*Your Gender*): Kadın Erkek Cevap vermek istemiyorum

(*Woman*) (*Man*) (*Do not want to answer*)

2) Yaşınız (*Your age*): \_\_\_\_\_

3) Aşağıdakilerden hangisi etnik kimliğinizi en iyi tanımlar?

(*Which one does best describe your ethnic identity?*)

Türk Kürt Ermeni Rum Arap Kafkas Balkan Diğer

(*Turkish – Kurdish – Armenian – Rum – Arab – Caucasian – Balkan – Other*)

4) En uzun süreyle yaşadığınız yer neresidir? (*The place you longest resided*)

Büyükşehir Şehir Kasaba Belde Köy

(*Metropolis – City – Borough – Small town – Village*)

5) Bu merdivenin Türkiye’de insanların sosyal ve ekonomik olarak bulunduğu konumları temsil ettiğini düşünün. Merdivenin en üst basamağında sosyo-ekonomik olarak en iyi durumda olan, yani en çok paraya, en yüksek eğitim seviyesine ve en saygı duyulan mesleklere sahip kişiler var. Merdivenin en alt basamağında ise; sosyo-ekonomik olarak en kötü durumda olanlar, yani en az paraya, en düşük eğitim seviyesine, en az saygı duyulan mesleklere sahip ya da işsiz kişiler var. Merdivende ne kadar üst basamaktaysanız, en iyi durumda olan kişilere o kadar yakınsınız, merdivende ne kadar alt basamaktaysanız, en kötü durumda olan kişilere o kadar yakınsınız demektir. Lütfen ailenizin çocukluğunuzdaki durumunu düşünerek

merdivendeki uygun basamağı seçiniz.

*(Think of this ladder as a representation of the social and economic position of people in Turkey. At the top of the ladder are people who are in the best socio-economic status, that is, the most money, the highest level of education and the most respected professions. At the bottom of the ladder; There are those who are in the worst socio-economic situation, that is, people with the least money, the lowest education level, the least respected professions, or the unemployed. The higher you are on the ladder, the closer you are to the people in the best condition, the lower you are on the ladder, the closer you are to the worst off. Please choose the appropriate step on the ladder, considering the situation of your family in your childhood.)*



6) Siyasi konularda “sol”dan ve “sağ”dan bahsedildiğini sık sık duyuyoruz. Aşağıda bir sol-sağ cetveli var. Burada “1” en solu, “7” ise en sağ gösteriyor. Sizin kendi görüşleriniz bu cetvelin neresinde yer alır?

*(Please indicate your political orientation on a 7-point scale [1 = left, 7 = right])*

1-----2-----3-----4-----5-----6-----7

Sol

Orta

Sağ

(*Left*)

(*Middle*)

(*Right*)

7) Aşağıdakilerden hangisi sizin dini/inanç sisteminizi en iyi ifade etmektedir?

(*religious affiliation*)

Tanrı'ya inanmam (Ateistim) (*Atheist*)

Tanrı'ya inanıyor ama bir dini tercih etmiyorum

(*I believe in god but do not believe in a religion*)

Müslümanım (Sünni)

(*Muslim, Sunni*)

Müslümanım (Alevi)

(*Muslim, Alevi*)

Müslümanım (diğer bir mezhep)

(*Muslim, other sect*)

Hıristiyanım (*Christian*)

Yahudiyim (*Jewish*)

Diğer (*Other*)

8) Kendinizi dindar/inanan biri olarak nitelendirir misiniz? (*Do you consider yourself*

*a religious person?*)

1-----2-----3-----4-----5-----6-----7

Hiç dindar değilim

Çok dindarım

(*Not at all religious*)

(*Very religious*)

EXTRA INFORMATION OBTAINED IN STUDY 2:

1) En uzun süreyle yaşadığınız yer doğup büyüdüğünüz yer mi?

*(Is your longest resided place also your hometown?)*

Evet Hayır *(Yes – No)*

2) Lütfen doğup büyüdüğünüz yeri belirtiniz. Eğer yaşantınızın birden fazla yerde geçtiğini hissediyorsanız yaşadığınız yerleri kronolojik sırayla ve parantez içinde tahmini olarak yaşadığınız süreyi ekleyerek yazınız. Örn. Sivas (3 yıl), Ankara (7 yıl) gibi. \_\_\_\_\_

*(Please indicate the place you were born and raised. If you feel like your life has past in more than one place, please indicate all these places in chronological order with the approximate duration you lived there in parantheses. For ex. Sivas (3 years), Ankara (7 years).)*

3) Lütfen mesleğinizi belirtiniz.*(Your profession)*\_\_\_\_\_

4) Eğer öğrenciyseniz okuduğunuz bölümü belirtiniz. Öğrenci değilseniz bu soruyu geçebilirsiniz. \_\_\_\_\_

*(If you are a student, please indicate your majör. If you are not, you can pass this question.)*

5) Eğitim Seviyeniz: *(Level of education)*

Okuryazar *(literate)*

İlkokul/ortaokul mezunu *(primary school graduate)*

Lise Mezunu *(high school graduate)*

Yüksekokul Mezunu *(vocational school graduate)*

Üniversite Öğrencisi *(college student)*

Üniversite mezunu (*Bachelor's degree*)

Lisansüstü Öğrencisi (*graduate student*)

Lisansüstü Mezunu (*Master's/PhD. degree*)

6) Lisans eğitiminizi aldığınız okul: \_\_\_\_\_

(*The institution you obtained your Bachelor's degree*)

7) Lisansüstü eğitiminizi aldığınız okul: \_\_\_\_\_

(*The institution you obtained your Master's/PhD degree*)

8) Politik görüşünüz aşağıdaki kategorilerden hangisine daha yakındır? (lütfen sadece en yakın olduğunuz “bir” seçeneği işaretleyin)

(*Which one does better describe your political ideology. Please select the one that is the closest to you*)

Sosyal Demokrat (*Social democrat*)

Kemalist (*Kemalist*)

Sosyalist (*Socialist*)

Muhafazakâr Demokrat (*Conservative democrat*)

Liberal (*Liberal*)

İslamcı (*Islamist*)

Apolitik (*Apolitic*)

Ülkücü (*Turkish nationalist*)

Diğer (lütfen belirtiniz) \_\_\_\_\_ (*Other, please indicate*)

## APPENDIX I

### RELATIONAL-INTERDEPENDENT SELF-CONSTRUAL SCALE

Lütfen aşağıdaki cümleleri dikkatle okuyup her birine ne kadar katıldığınızı işaretleyiniz.

1-----2-----3-----4-----5-----6-----7  
Kesinlikle Ne katılıyorum Kesinlikle  
katılmıyorum ne katılmıyorum katılıyorum

1. Yakın ilişkilerim benim kim olduğumun önemli bir yansımasıdır.

*(My close relationships are an important reflection of who I am.)*

2. Kendimi birine çok yakın hissettiğimde, çoğu zaman o kişiyi önemli bir parçamış gibi görürüm.

*(When I feel very close to someone, it often feels to me like that person is an important part of who I am.)*

3. Genel olarak, yakın ilişkilerimin kendimi nasıl hissettiğimle ilgisi çok azdır.

*(Overall, my close relationships have very little to do with how I feel about myself)*

4. Bence benim kim olduğumu anlamak isteyen benim yakın dostlarıma ve onların kim olduklarına bakabilir.

*(I think one of the most important parts of who I am can be captured by looking at my close friends and understanding who they are.)*

5. Kendimi düşündüğüm zamanlar, genellikle yakın dostlarımı ve ailemi de düşünürüm.

*(When I think of myself, I often think of my close friends or family also.)*

6. Birisiyle yakın bir dostluk kurduğum zaman, genelde o kişiyle özdeşleşirim.

*(When I establish a close friendship with someone, I usually develop a strong sense of identification with that person.)*

7. Eğer biri bana yakın birisini incitirse, ben de kendimi incinmiş hissederim.

*(If a person hurts someone close to me, I feel personally hurt as well.)*

8. Bence, yakın ilişkilerimin benim ne tür bir insan olduğum ile ilgisi yoktur.

*(My close relationships are unimportant to my sense of what kind of person I am)*

9. Gurur duygumun oluşmasında yakın dostlarım ile ilişkilerimin büyük bir rolü vardır.

*(My sense of pride comes from knowing who I have as close friends.)*

10. Genel olarak, yakın ilişkilerim benim düşüncelerimin ve hislerimin önemli bir parçasıdır.

*(In general, my close relationships are an important part of my self-image.)*

11. Bir yakınım önemli başarılar kazanınca, genelde ben de çok gurur duyarım.

*(I usually feel a strong sense of pride when someone close to me has an important accomplishment.)*

## APPENDIX J

### MULTIPLE STIMULUS TYPES AMBIGUITY TOLERANCE SCALE-II

Lütfen aşağıdaki cümleleri dikkatle okuyup her birine ne kadar katıldığınızı işaretleyiniz.

1-----2-----3-----4-----5-----6-----7  
Kesinlikle Ne katılıyorum Kesinlikle  
katılmıyorum ne katılmıyorum katılıyorum

1. Belirsiz durumları iyi tolere edemem.

*(I don't tolerate ambiguous situations well)*

2. Birçok farklı perspektiften bakmamı gerektiren sorunları çözmekten kaçınıyorum.

*(I would rather avoid solving a problem that must be viewed from several different perspectives.)*

3. Belirsiz durumlardan kaçmaya çalışırım.

*(I try to avoid situations that are ambiguous)*

4. Tanıdık durumları yeni olanlara tercih ederim.

*(I prefer familiar situations to new ones.)*

5. Tek bakış açısıyla değerlendirilemeyen problemler biraz korkutucudur.

*(Problems that cannot be considered from just one point of view are a little threatening.)*

6. Kolayca anlayamayacađım kadar karışık durumlardan kaçınırım.

*(I avoid situations that are too complicated for me to easily understand.)*

7. Belirsizlik içeren durumlara karşı hoşgörölüyüm.

*(I am tolerant of ambiguous situations.)*

8. Belirsiz olacak kadar karmaşık problemleri çözmekten zevk alırım.

*(I enjoy tackling problems that are complex enough to be ambiguous)*

9. Tek bir doğru cevabı var gibi durmayan problemlerden kaçınmaya çalışırım.

*(I try to avoid problems that don't seem to have only one "best" solution.)*

10. Genellikle yeniliđi tanıdıklığa tercih ederim.

*(I generally prefer novelty over familiarity)*

11. Belirsiz durumlardan hoşlanmam.

*(I dislike ambiguous situations.)*

12. Sonucun belirsiz olduđu zamanlarda seçim yapmak bana zor gelir.

*(I find it hard to make a choice when the outcome is uncertain.)*

13. İçinde biraz belirsizlik olan bir durumu tercih ederim.

*(I prefer a situation in which there is some ambiguity.)*

APPENDIX K  
ETHICS COMMITTEE APPROVAL

Evrak Tarih ve Sayısı: 26/06/2020-47

T.C.  
BOĞAZIÇI ÜNİVERSİTESİ  
SOSYAL VE BEŞERİ BİLİMLER YÜKSEK LİSANS VE DOKTORA TEZLERİ ETİK İNCELEME  
KOMİSYONU  
TOPLANTI TUTANAĞI

Toplantı Sayısı : 2  
Toplantı Tarihi : 16/03/2020  
Toplantı Saati : 14:00  
Toplantı Yeri : Skype Sanal Toplantı  
Bulunanlar : Prof. Dr. Feyza Çorapçı, Dr. Öğr. Üyesi Yasemin Sohtorik İlkmen, Prof. Dr. Özlem Hesapçı  
Karaca, Doç. Dr. Ebru Kaya, Prof. Dr. Fatma Nevra Seggie  
Bulunmayanlar :

Rüya Su Şencan  
Psikoloji

Sayın Araştırmacı,  
"Kültürel Düşünce Stilllerinin Politik İdeoloji ile İlişkisi" başlıklı projeniz ile ilgili olarak yaptığımız SBB-EAK  
2020/14 sayılı başvuru komisyonumuz tarafından 16 Mart 2020 tarihli toplantıda incelenmiş ve uygun bulunmuştur.

Bu karar tüm üyelerin toplantıya çevrimiçi olarak katılımı ve oybirliği ile alınmıştır. COVID-19 önlemleri kapsamında kurul üyelerinden ıslak imza alınmadığı için bu onam mektubu üye ve raportör olarak Fatma Nevra Seggie tarafından bütün üyeler adına e-imzalanmıştır.

Prof. Dr. Fatma Nevra SEGGIE  
ÜYE

e-imzalıdır  
Prof. Dr. Fatma Nevra SEGGIE  
Raportör

SOBETİK 2 16/03/2020

Bu belge 5070 sayılı Elektronik İmza Kanununun 5. Maddesi gereğince güvenli elektronik imza ile imzalanmıştır.

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