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Assessing the Discriminant Validity between Integrative Complexity and Open-Minded Cognition

Madeleine Louise Kindler

LOYOLA UNIVERSITY CHICAGO

ASSESSING THE DISCRIMINANT VALIDITY

BETWEEN INTEGRATIVE COMPLEXITY

AND OPEN-MINDED COGNITION

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MADELEINE L. KINDLER

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ABSTRACT

The objective of this study was to evaluate the discriminant validity between integrative complexity and open-minded cognition (OMC), and to show that integrative complexity and OMC are conceptually distinct constructs. This online study randomly assigned 198 Loyola University Chicago undergraduate psychology students to read either six tenable, homogeneous or six untenable, heterogeneous written communication remarks, made during a hypothetical conversation about the inclusion of prayer/moments of silence in high school curriculums. Participants listed their cognitive thoughts and responses to the communication in a free response format (integrative complexity measure) and completed the SSOMC survey scale. A 2x2 Mixed Analysis of Variance (MANOVA) yielded a highly significant two-way interaction, $F(1, 153) = 24.11$, $p < .001$. This indicated that the effects of condition were significantly different for integrative complexity and SSOMC scores. These findings supported the study hypothesis, as the effects of condition lead to significantly different scores on measures of SSOMC and integrative complexity. Additionally, there was no simple effect of condition on integrative complexity scores for participants, $F(1, 153) = 0.17$, $p = .0.680$, but there was a significant, positive simple effect of condition on SSOMC scores for participants, $F(1, 153) = 56.40$, $p < .001$. These findings indicate that there was a significant difference in participant SSOMC scores by condition but not in participant integrative complexity scores.

INTRODUCTION

Open-Minded Cognition

The study of Open-Minded Cognition (OMC), though new to the field of social psychological research, is of great practical significance in bringing attention to polarization within the United States. Open-Minded Cognition is a cognitive style that influences how individuals select and process information and is generally defined as a bipolar psychological continuum ranging from closed-mindedness to open-mindedness. An open-minded cognitive style demonstrates a willingness to consider a variety of intellectual perspectives, values, opinions, or beliefs, regardless of whether they contradict the individual's opinion. Comparatively, a close-minded (dogmatic) cognitive style demonstrates strong confirmatory bias, or the tendency to process information in a manner that reinforces an individual's prior opinion or expectation. Chronic levels of OMC vary by individual differences and by general and domain-specific cognition. That is, OMC may vary across situations, where general OMC is a person's average level and situation-specific OMC is a person's level during a specific situation (Ottati, Wilson, Price, Distefano, Bryant, 2021).

Open-minded cognition describes directionally unbiased information processing, whereas close-minded cognition describes directionally biased information processing. Lower levels of open-minded cognition can be influenced by self-perceptions of expertise, or the *Earned Dogmatism Effect*. A higher perception of perceived expertise in a specific area can lead one to partake in more dogmatic, close-minded thinking (Ottati, Price, Wilson, & Sumaktoyo, 2015). An open-minded orientation is generally thought to be socially desirable and preferable to a close-minded orientation, but not when open-mindedness is incompatible with social values and

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norms. This has been coined the *Open-Minded Normative Standard Hypothesis* by Wilson, Ottati, & Price (2017). This, however, is situational. That is, as high levels of open-minded cognition may be less desirable than close-mindedness in situations where open-mindedness contradicts social norms, otherwise known as the *Situational Merit Standard Hypothesis* (Price et al., 2015). Context, therefore, plays a large role in both the desirability and personal levels of open-minded cognition.

Message Tenability Effect on Open-Minded Cognition

Previous research has demonstrated that there are multiple determinants of situation-specific OMC, and one of the major determinants of variation in situation-specific OMC is message tenability (Ottati, 2017). The message tenability effect refers to the degree to which the content of a message is considered tenable or untenable. In what is referred to as an "open situation", messages are considered tenable. That is, the content of the message is reasonable and does not blatantly contradict mainstream values. Alternatively, in what is a referred to as a "closed situation", messages are untenable, containing unrealistic claims or statements that blatantly contradict mainstream values. Simply stated, situation-specific Open-Minded Cognition is higher in situations involving tenable messages, meaning that a person will be more open-minded towards tenable messages, and will be lower in situations involving untenable messages, meaning that a person will be less open-minded towards untenable messages (Ottati, 2017).

Previous research has demonstrated this trend by presenting participants with both tenable and untenable messages, presented by panelists, regarding whether all U.S. citizens should be permitted to vote (a tenable message indicating that all U.S. citizens should be permitted vote, and an untenable message indicating that ethnic minority members that are U.S.

citizens should not be permitted to vote). After being exposed to either the tenable or untenable message, participants then indicated to what degree a person should be open-minded in this situation and the extent that they personally would be open-minded to the current situation/message. For both the should and (personal) would ratings, participants demonstrated significantly higher levels of situation specific OMC when receiving tenable messages than when receiving untenable messages. This same experiment effect was conceptually replicated eighteen times in follow up research (Ottati, 2017; Ottati et al., 2021).

Integrative Complexity

Open-minded cognition, though conceptually distinct, may be related to Integrative Complexity. Integrative complexity focuses on the complexity of information processing and decision-making of differing individuals, with complexity being defined and measured in terms of differentiation and integration (Suedfeld, Tetlock, Streufert, 1992). It is a composite index that combines information on two cognitive structural variables: differentiation and integration. Differentiation is the perception of different dimensions and/or the taking of different perspectives when considering an issue. Integration is the development of conceptual connections among differentiations of or about the stimulus (Baker-Brown, Ballard, Bluck, DeVries, Suedfeld, &Tetlock, 1992). In measuring integrative complexity, individuals typically provide a free response to a written or verbal communication, and their responses are coded and given an integrative complexity score. This integrative complexity score is on a 1-7 scale, as provided by Baker-Brown et al. (1992), with 1 being *no evidence of either differentiation or integration*, 3 being *moderate/high differentiation but no integration*, 5 being *moderate/high differentiation and moderate integration*, and 7 being *high differentiation and high integration.*

Integrative complexity is distinct from other similar cognitive concepts in that it is not simply information processing but perception and integration of divergent dimensions within a schema. Low levels of integrative complexity may be characterized by rigid thinking, a need for quick closure, and the rejection of alternate viewpoints. In contrast, high levels of integrative complexity are characterized by flexible thinking, the recognizing of alternate viewpoints surrounding an issue, and the potential connections between these perspectives. This involves information searching, flexibility, and the motivation to identify and consider alternating viewpoints. Given that levels of motivation fluctuate, levels of integrative complexity can be situationally manipulated (Bekes & Suedfeld, 2019).

Message Homogeneity and Integrative Complexity

Perhaps one of the more significant findings regarding higher-order strategies of understanding integrative complexity are the situation specific changes that influence if and when people are more flexible in changing their complexity level to fit a given situation, whether consciously or unconsciously. Though many of the parameters influencing a person's level of integrative complexity, factors specific to the message perceived have been proven to influence the integrative complexity of a perceiver's response (Suedfeld et al., 1992). One such influence is the perceived homogeneity or heterogeneity of the message content. The homogeneity or heterogeneity of a message refers to that amount of differentiation in arguments and patterns of thought present within the message's content. A message that has little to no differentiation in its arguments or patterns of thought is considered to be high in homogeneity, whereas a message with a significant amount of differentiation in its arguments or patterns of thought is considered to be high in heterogeneity (Bekes & Suedfeld, 2019). Though there has not been a great deal of

research published that affirms this effect of message homogeneity on levels of Integrative Complexity, previous research has demonstrated that characteristics of message content, such as number of words present and sentence length, do have a significant effect on changes in a person's Integrative Complexity score (Suedfeld et al., 1992). It can therefore be predicted that Integrative Complexity, as a measure of the amount of differentiation and integration of a person's thought responses to a communication, will be significantly affected by the amount of argument differentiation and integration present within a perceived message. Based on previous research that indicates the effect of increased message complexity (i.e. sentence length and structure) on levels on Integrative Complexity, it is predicted that changes in message homogeneity or heterogeneity, too, will lead to significant changes in Integrative Complexity scores.

Similarities and Distinctions between Open-Minded Cognition and Integrative Complexity

There are clear, shared features of open-minded cognition and integrative complexity. Both high levels of OMC and integrative complexity involve an openness to alternating perspectives and a flexibility in thinking, where low levels for both are stringent and selective in thinking and perspective taking. Both concepts, too, are situation dependent and can be manipulated. Research has also demonstrated that those higher in integrative complexity tend to fall in the moderate (somewhat left leaning) range of the political ideology spectrum, as they are likely to believe in and take a more complex approach to multiple political values (Bekes & Suedfeld, 2019). To similar effect, a liberal ideological orientation is associated with slightly higher levels of open-minded cognition (Price et al., 2015).

Though OMC and integrative complexity share certain psychological features, there are also important differences between these separate concepts. Open-minded cognition aims to assess how individuals select and process information, based on their willingness to receive and accept viewpoints apart form their own. Integrative complexity, however, focuses on the complexity of information processing, based on an individual's tendency to identify differing features of an issue and to form connections between these features. Put simply, OMC describes an individual's willingness to consider perspectives on both sides of an issue, whereas integrative complexity describes an individual's ability and motivation to identify and integrate a variety of perspectives, but not necessarily on both sides of an issue. OMC specifically involves directional bias in opinions and perspectives, as close-mindedness indicates a strong directional bias towards one's own specific viewpoint. At a conceptual level, this directional bias can be independent of complexity and, therefore, distinct from complexity. That is, it is possible for someone to be unbiased (open-minded) and low in complexity. For example, one might have a simple viewpoint of an issue, but derive an issue opinion by following the advice of a communication source with a reputation for fairness and lack of bias. Alternatively, it is possible to be extremely high in complexity with regard to an issue and to be extremely biased towards the issue, demonstrating a close-minded, motivated form of cognition. This person might possess a complex or highly differentiated view of an issue, but only with regard to arguments that promote one-side of a debate surrounding the issue. Thus, with regard to the distinction between directional bias and complexity of thought, OMC and integrative complexity must be cognitively distinct.

Establishing Discriminant Validity between Open-Minded Cognition and Integrative Complexity

Past research reveals the influence of message tenability on levels of situation specific open-minded cognition as well as strong potential for the influence of message homogeneity on integrative complexity scores. The first purpose of this study is to demonstrate that Open-Minded Cognition and Integrative Complexity are conceptually distinct phenomena that are influenced by different situational variables and in near opposite ways. This result would confirm not only that the two measures are not significantly correlated but are in fact distinct from one another. This result would further legitimize the new psychological concept of Open-Minded Cognition as well as validate previous research that has been done on the construct (Price et al., 2015).

A second purpose of this study was to examine the effects of message tenability and homogeneity on both measures of open-minded cognition and integrative complexity. Previous research has demonstrated a significant effect of message tenability on levels of situation specific OMC, but this effect has not yet been researched regarding message tenability and integrative complexity (Ottati, 2017). Similarly, previous research has indicated the potential for the significant effect of message homogeneity on integrative complexity scores, but such a claim has not been when predicting OMC (Bekes & Suedfeld, 2019).

HYPOTHESES

Distinct Construct Hypothesis (Preferred Hypothesis):

The distinct construct hypothesis theorizes that the integrative complexity and OMC measures assess conceptually distinct constructs. If this is the case, two predictions can be generated. First, if integrative complexity and OMC share some common variance (i.e., are

correlated), they should also possess a noticeable amount of unique variance. Thus, although the measures may be correlated, the correlation should not be high in all circumstances.

Second, the distinct construct hypothesis theorizes that it should be possible to construct a manipulation that produces effects on the two measures that significantly differ. For example, consider the following manipulation of message content pertaining to an issue. Specifically, assume that the message is both homogeneous and tenable in one condition, but heterogeneous and untenable in the other condition. In this case, the manipulation should produce significantly different effects when predicting integrative complexity and OMC. Specifically, the homogeneous, tenable message condition should elicit higher levels of OMC than the heterogeneous, untenable message condition. In contrast, this effect should be reduced, eliminated, or even reversed when predicting integrative complexity, which is primarily responsive to homogeneity versus heterogeneity of the message. The possibility of reversal is real. If integrative complexity is primarily determined by homogeneity versus heterogeneity of the message content (rather than tenability of the message content), integrative complexity should be higher in the heterogeneous, untenable message condition than in the homogeneous, tenable message condition.

Precedent for this sort of "intentionally confounded" manipulation appears in Schwarz et al.'s (1991) work regarding the "availability heuristic". Specifically, subjects who had to recall 12 examples of assertive behaviors, which was difficult, rated themselves as less assertive than subjects who had to recall 6 examples of assertive behaviors, which was easy. That is, the first condition produced a relatively high amount of recall but low ease of retrieval, whereas the second condition produced a relatively low amount of recall but high ease of retrieval. According

to the "amount of aggressive behavior recalled" hypothesis, participants should rate themselves more aggressive in the first condition than in the second condition. According to the "ease of retrieval" hypothesis, participants should rate themselves as more aggressive in the second condition than the first condition. Schwarz et al. (1991) found that participants rated themselves as more assertive in the second condition than the first condition, supporting the ease of retrieval hypothesis.

In the present case, the first condition produces low heterogeneity and high tenability, whereas the second condition produces high heterogeneity and low tenability. If integrative complexity and OMC are distinct constructs, this "intentionally confounded" manipulation should produce opposite effects when predicting integrative complexity and OMC. When predicting OMC, the first condition should produce higher scores than the second condition. When predicting integrative complexity, the second condition should produce higher scores than the first condition. This pattern would contradict the Single Construct Hypothesis below, which presumes the manipulation should produce an identical effect on these two measures.

Single Construct Hypothesis (Non-Preferred Hypothesis)

According to this hypothesis, integrative complexity and OMC are alternative measures of one and the same construct. If this is the case, the two measures should be highly correlated and carry little unique variance. Additionally, any given manipulation should produce identical effects on both measures. For example, when manipulating message content so that the message is homogeneous and tenable in one condition, but heterogeneous and untenable in the other condition, the manipulation should produce the same effect when predicting both integrative complexity and OMC.

METHOD

Participants

Using GPower, an A Prior Power Analysis indicated that the proposed sample size of 150 participants exceeds the sample size needed to obtain 80% power to detect "half of a medium effect size" for the proposed interaction at $p < .05$ ($d = 3.92$, required N = 128). Thus, these findings suggest that the proposed experiment requires a sample size of at least 128 participants. The experimenter planned to obtain 150 participants, at the risk of needing to drop some participants due to missing data. Thus, a total of 196 participants from Loyola's online participant pool were obtained to complete the current study. The Loyola online participant pool consisted of Psychology 100/01 students during the Spring semester of 2021. Although the Loyola student population as a whole tends to be somewhat left leaning politically, it was not anticipated that this would bias or have any effect on predicted results. Participants' mean age was 19.40 years (SD=1.11). In all, 65.3% of participants identified as female. Most participants reported having some college education. 41 participants were removed from analyses for failure to complete all required fields on scale-measured items (Final N = 155).

Design

The independent variable of the current study was the manipulation of communication style. Participants read about a hypothetical conversation with a member of the "Association for Religious Development." The conversation pertained to inclusion of prayer or moments of silence in high school curriculums. Participants were randomly assigned to read either six tenable, homogeneous conversation remarks or six untenable, heterogeneous conversation remarks, presumably made by the member of this association during the conversation. Thus,

communication style (tenable-homogeneous vs. untenable-heterogeneous) constituted a between-participant independent variable. The design also includes a within-participant independent variable which reflects the "Scale" used to assess cognitive style (integrative complexity vs. SSOMC). Thus, cognitive style (the dependent measure) was assessed twice, once using the integrative complexity score and once using the SSOMC score. That is, the dependent variable for the proposed study consisted of participant responses on the SSOMC scale and their integrative complexity scores which were coded for by assessing participants' responses to the conversation remarks.

As noted previously, participants were randomly assigned to read either six tenable, homogeneous conversation remarks or six untenable, heterogeneous conversation remarks, made during a hypothetical conversation pertaining to the inclusion of prayer or moments of silence in high school curriculums. After reading the six conversation remarks, participants were asked to list their cognitive thoughts and responses to the conversation in a free response format (used to derive the integrative complexity measure) and to complete the SSOMC survey scale. Order between these two response measures was controlled for by randomly assigning half of the participants to list their cognitive thoughts and responses first and assigning the other half to complete the SSOMC survey scale first. Following completion of both response measures, participants answered four questions regarding religious identification, religiosity, political ideology, and political party as well as simple demographic questions. SSOMC scores were then recorded, and integrative complexity scores were computed and recorded.

Procedure

Participants were randomly assigned to read either six tenable, homogeneous written communication remarks or six untenable, heterogeneous written communication remarks, made during a hypothetical conversation about the inclusion of prayer/moments of silence in high school curriculums.

Participants were first be prompted with a screen of instructions, before reading the communication remarks, that reads as follows:

> In the first portion of this study, you will be prompted with six remarks made by a person during conversation. We would like you to read the following remarks and imagine as though you are a part of this conversation, and these comments are being delivered to you.
> After reading the six remarks, you will be asked to indicate your initial responses regarding how you would react to the comments made.

The tenable, homogeneous communication remarks read:

> Imagine you are having a conversation with a member of the Association for Religious Development about a proposal for the inclusion of prayer and/or quiet time in school. During this conversation, they make the following remarks:
> Remark 1: High school educators should have the option of providing students with time for "private prayer or a designated moment of silence" at any point during the school day.
> Remark 2: Of course, this should be optional for high school educators to provide to students.
> Remark 3: And obviously, high school educators should allow private prayer or moments of silence.
> Remark 4: It is important that this time period be allowed at any point during the school day.
> Remark 5: The decision for high school educators should be optional.
> Remark 6: This time period could happen in the morning or the afternoon.

The untenable, heterogeneous communication remarks read:

> Imagine you are having a conversation with a member of the Association for Religious Development about a proposal for the inclusion of prayer in school. During this conversation, they make the following remarks:

Remark 1: There are three important things to note about this proposal. First, high school educators should be required to include prayers, it is not optional. Second, it should be mandatory that the prayers are Roman Catholic prayers only. Third, it should be mandatory that the prayers occur as the beginning of every single class period. Prayers performed at the end of class would not "count" as satisfying the prayer requirement.

Remark 2: Once the proposal passes, two things should be specified. First, the religious beliefs of the educators do not matter, they must enforce only Roman Catholic Prayers. Second, any educators who refuse will be reprimanded by the school board. Via loss of promotion, loss of annual raise, and loss of paid vacation days.

Remark 3: Moreover, students who refuse to participate will also be reprimanded, with things like detentions and even suspensions. Furthermore, students who are late in the morning, for any reason, will be given detention in which they will be required to recite the prayers that they missed.

Remark 4: It is the moral responsibility of educators to require their students to practice the Roman Catholic faith in order to instill proper Christian values. It is important that schools guide the religious development of students. The bottom line is that education and the Roman Catholic faith should NOT be separated, because they are intrinsically tied together in the teachings of the Bible.

Remark 5: It is true that students who are not required to take part in the Roman Catholic faith at school are more likely to become at-risk to temptations like alcohol and drugs. Schools who do not have mandatory programs like this likely have higher rates of fighting among students too, because children who don't practice the Roman Catholic faith will grow up with no morals.

Remark 6: And of course, students who already practice another religion or no religion should not be exceptions, because the Roman Catholic faith is the largest practicing religion in the United States. It will ultimately be helpful for them to assimilate to the Roman Catholic faith and not continue to practice other false, sinful religions. As a matter of fact, students who aren't already a part of the Roman Catholic faith should be required to say one extra prayer each morning, because they are lower in morality than the rest of students.

Following the reading of the six remarks, participants were asked to list their cognitive thoughts and responses to the communication in a free response format (integrative complexity measure) and to complete the SSOMC survey scale. As previously stated, order between these two response measures was counter-balanced by randomly assigning half of the participants to list their cognitive thoughts and responses first and assigning the other half to complete the SSOMC survey scale first. The SSOMC survey scale screen read:

Please imagine that you are listening to the remarks that you just read above which were written by the Association for Religious Development. Please indicate, on the scale below, how you would react while listening to these remarks.

SSOMC Scale (1 strongly disagree, 7 strongly agree):
1. When thinking about given conversation, I would consider as many different opinions as possible.
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$
2. When thinking about the given conversation, I would "tune out" messages I disagree with.
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$
3. When thinking about the given conversation, I would believe it is a waste of time to pay attention to certain ideas.
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$
4. When thinking about the given conversation, I would try to reserve judgement until I have a chance to hear arguments from both sides of an issue.
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$
5. When thinking about the given conversation, I would have no patience for arguments I disagree with.
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$
6. When thinking about the given conversation, I would be open to considering other viewpoints by the Association for Religious Development (the group that made the remarks you just read).[1]
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$

The integrative complexity measure screen read:

> IMPORTANT: Now we would like you to please list the thoughts you had while reading the previous remarks. Thoughts may be short or long, and you may fill all the text boxes or not, there is no required amount. You do not need to fill in all of the boxes.

Participants were then prompted with a screen of 10 separate text boxes, in which they could type out each of the thoughts they had while reading the remarks made by the Association for Religious Development.

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[1] In the context of the original scale, this measure is assumed to indicate other viewpoints belonging to the message source. For the sake of this study, it was necessary to make this explicit to ensure that participants did not perceive this as viewpoints from another source.

Following completion of both response measures, participants were then asked two questions assessing religious identification and degree of religiosity as well as two questions assessing political ideology and political party. Finally, participants answered simple demographic questions, were debriefed, and awarded one credit hour after study completion.

RESULTS

Preliminary Analyses

Table 1: Descriptive Statistics

	Mean	SD	N	95 Percent Confidence Interval	
Religiosity	2.95	1.63	172	2.70	3.19
Political Ideology	2.73	1.56	172	2.50	2.97
Political Party	2.83	1.48	172	2.61	3.05
Age	19.40	1.11	172	19.23	19.56

Participants in the current study had a mean age of 19.40 (SD = 1.11). Participants mean religiosity score was 2.95 (SD = 1.63), indicating that, on average, participants reported being 'somewhat religious'. Additionally, participants mean political ideology score was 2.73 (SD = 1.56) and mean political party score was 2.83 (SD = 1.48). This indicates that, on average, participants reported being 'a little liberal' and 'a little bit of a democrat'.

Table 2: Frequencies

Demographic Variables		Frequency	Percentage	Cumulative Percentage
Gender	Male	42	24.0	24.0
	Female	128	73.1	97.1
	Genderqueer/Nonbinary	5	2.9	100
	Prefer not to say	0	0	100
Education	Less than high school	0	0	0
	High school diploma or equivalent	32	18.3	18.3
	Some college	135	77.1	95.4
	Associates degree	2	1.1	96.6
	Bachelor's degree	6	3.4	100
	Higher than bachelor's degree	0	0	100
Race/Ethnicity	Black/African American	10	6.6	6.6
	White/Caucasian	78	51.7	58.3
	Native American/Alaskan Native	0	0	58.3
	Asian/Pacific Islander	32	21.2	79.5
	Hispanic/Latin American	23	15.2	94.7
	Middle Eastern	3	2.0	96.7
	Other	5	3.3	100
Religious Affiliation	Buddhist	1	0.6	0.6
	Christian (Catholic)	69	39.4	40.0
	Christian (Protestant)	13	7.4	47.4
	Christian (Evangelical)	0	0	47.4
	Christian (other)	17	9.7	57.1
	Jewish	2	1.1	58.3
	Hindu	6	3.4	61.7
	Muslim	9	5.1	66.9
	Atheist	10	5.7	72.6
	Agnostic	21	12.0	84.6
	None	20	11.4	96.0
	Other	7	4.0	100

Among the total sample for the current study, 73.1% of participants identified as female, and 77.1% reported having completed some college. Additionally, 51.7% of participants were white/Caucasian, and 39.4% of participants were Christian (Catholic).

Main Analyses

After reverse coding items worded in a close-minded direction, SSOMC was measured by calculating an overall SSOMC score, from 1 to 7, for participants. Integrative complexity was measured by calculating an overall integrative complexity score for each participant, using the method set forth by Suedfeld et al. (1992). Importantly, before running analyses, both SSOMC and integrative complexity scores were normalized for direct comparison along the process style measure.

The "Distinct Construct" hypothesis was first tested by simply examining the correlation between the SSOMC and Integrative Complexity Score. These two measures were correlated, $r = .117$, $p > .05$ ($r^2 = .014$). In accordance with the "Distinct Construct" hypothesis, 98.6% of the variance in these two measures was unique.

A 2x2 Mixed Analysis of Variance (MANOVA) was used to analyze the data. Main effect condition means are shown in Tables 3-4. Cell means are summarized in Table 5. Significance tests for the main effects are summarized in Tables 6-9.

Table 3: Mean Cognitive Style score as a function of Condition (Tenable/Homogeneous versus Untenable/Heterogeneous)

	Mean	SD	N	95 Percent Confidence Interval	
Tenable/Homogeneous	0.033	1.033	77	-0.202	0.267
Untenable/Heterogenous	-0.034	0.985	78	-0.256	0.188
For Entire Sample	-0.001	1.006	155	-0.161	0.159

Table 4: Mean Cognitive Style score as a function of Measure (Integrative Complexity versus SSOMC)

	Mean	SD	N	95 Percent Confidence Interval	
Integrative Complexity Score	-0.001	1.006	157	-0.161	0.159
SSOMC Score	-0.001	1.024	172	-0.164	0.161
Valid N (listwise)			155		

Table 5: Mean (SD) Cognitive Style score as a function of Condition and Measure (Integrative Complexity versus SSOMC)

	Tenable/Homogeneous	Untenable/Heterogeneous
Integrative Complexity Score	0.033 (1.033) N=77	-0.034 (0.985) N=78
SSOMC Score	0.532 (0.700) N=77	-0.528 (1.023) N=78

Table 6: Tests of Between Subject Condition Effect (Tenable/Homogeneous versus Untenable/Heterogeneous)

Source of Variation	SS	DF	MS	F	Sig of F	Partial Eta Squared
Within Cells	152.7	153	1			
Condition	24.58	1	24.58	24.63	0.000	0.139

Table 7: Tests Involving 'MEAS' Within-Subject Effect

Source of Variation	SS	DF	MS	F	Sig of F	Partial Eta Squared
Within Cells	121.06	153	0.79			
MEAS	0.00	1	0.00	0.00	0.978	0.000
Cond by MEAS	19.07	1	19.07	24.11	0.000	0.136

Table 8: Tests Involving 'MWithin Meas(1)' Within-Subject Effect

Source of Variation	SS	DF	MS	F	Sig of F	Partial Eta Squared
Within+Residual	155.81	153	1.02			
MWithin MEAS(1)	0.00	1	0.00	0.00	0.993	0.000
Cond by Mwithin MEAS(1)	0.17	1	0.17	0.17	0.680	0.001

Note: The "Cond by MWithin" effect for Meas(1) effect is equivalent to the simple Condition effect when predicting the Integrative Complexity score.

Table 9: Tests Involving 'MWithin MEAS(2)' Within-Subject Effect

Source of Variation	SS	DF	MS	F	Sig of F	Partial Eta Squared
Within+Residual	117.94	153	0.77			
MWithin MEAS(2)	0.00	1	0.00	0.00	0.977	0.000
Cond by Mwithin MEAS(2)	43.48	1	43.48	56.40	0.000	0.269

Note: The "Cond by MWithin" effect for Meas(2) effect is equivalent to the simple Condition effect when predicting the SSOMC score.

The data did yield a main effect of condition, $F(1, 153) = 24.58$, $p < .001$. As shown in Table 3, mean cognitive style scores were higher in the Tenable/Homogeneous condition (Mean = .033, SD = 1.033) than in the Untenable/Heterogeneous condition (Mean = -.034, SD = .985). Not surprisingly, no main effect of Measure was found, $F(1, 153) = 0.00$), $p = .978$. As shown in Table 4, mean cognitive style scores were essentially zero in both conditions. This is due to the fact that the cognitive style scores were normalized before analyzing the data.

Consistent with the "Distinct Construct" hypothesis, Table 7 reveals that the 2 x 2 Mixed Analysis of Variance yielded a highly significant two-way interaction, $F(1, 153) = 24.11$, $p < .001$. This indicates that the effect of condition was significantly different when comparing effects obtained for the integrative complexity scores to those obtained for the SSOMC scores. Specifically, as shown in Table 5, Condition produced a very large effect on SOMC scores, which were much higher in the Tenable/Homogeneous condition (Mean = .523, SD = .700) than in the Untenable/Heterogeneous condition (Mean = -.528, SD = 1.023). Moreover, simple effect analysis revealed that this effect was strongly significant, $F(1,153) = 56.40$, p = .000, partial eta2 = .27 (see Table 9). In contrast, simple effect analysis revealed that Condition did not

significantly influence the Integrative Complexity scores, $F (1,153) = .17$, $p = .68$, partial eta2 = .001 (see Table 8). That is, the Integrative Complexity score was essentially the same in the Tenable/Homogeneous condition (Mean = .033, SD = 1.033) and the Untenable/Heterogeneous condition (Mean = -.034, SD = .985).

Though Condition did not produce directionally opposite effects when comparing the SSOMC and Integrative Complexity measures, these findings do indeed support the distinct construct hypothesis, as the effect of Condition significantly differed when predicting SSOMC and Integrative Complexity scores. Confirming the discriminant validity of the measures, the Condition manipulation produced a robust effect on SSOMC scores ($p < .000$, partial eta2 = .27), but failed to influence on Integrative Complexity scores ($p = .68$, partial eta2 = .001)

GENERAL DISCUSSION

The findings of the current study provide support for the Distinct Construct Hypothesis, which states that integrative complexity and OMC assess conceptually distinct constructs. That is, to the extent that integrative complexity and OMC share some variance (i.e., are correlated) they also possess a noticeable amount of unique variance. Although the measures may be correlated in some conditions, this experiment demonstrates that this correlation can be weak under theoretically meaningful conditions (i.e., $r = .12$ in the current study). That is, under some conditions, integrative complexity and SSOMC measures clearly capture unique information.

Consistent with the Distinct Construct Hypothesis, the current study also found a strong, statistically significant two-way interaction. This interaction revealed that the integrative complexity scores and SSOMC scores were significantly different from one another under the effects of condition. Namely, there was a strong simple effect of Condition on participant

SSOMC scores but no simple effect of Condition on participant integrative complexity scores. These findings indicate that the condition manipulation had a significant effect on individual levels of situation-specific open-minded cognition but had a nonsignificant effect on individual levels of integrative complexity. These findings suggest that the manipulation of message content (tenable and homogeneous versus untenable and heterogeneous) significantly impacted participants' levels of situation-specific open-minded cognition but did not significantly impact participants' levels of integrative complexity. Thus, these findings support the hypothesis that SSOMC and integrative complexity are conceptually distinct constructs, as they were affected in significantly different ways by the same manipulation.

While the findings of the current study provide support for the hypothesis that OMC and integrative complexity are conceptually distinct constructs, there are certain limitations that should be considered. First, all participants were gathered from Loyola University Chicago, which is an institution that is somewhat left leaning. While it is not anticipated that this would have influenced the data, it is important to consider that data may have been limited since it was drawn from only college-aged students at a single university. It is possible that the effects of message tenability and message homogeneity on levels of situation-specific open-minded cognition and integrative complexity will slightly differ in a more representative sample of the population. In future studies, it is important to use a more representative sample.

Second, the structure of the current study may have limited participant integrative complexity and SSOMC scores. Specifically, having ten separate text boxes for participants to type out their thoughts could have constrained the degrees of elaboration within free responses answers. Participants might have felt as though they could only write shorter thoughts within

each text box, in order to fill up more text boxes. Alternatively, participants might have felt

overwhelmed with having ten separate text boxes which could have limited how many different

thoughts they were actually able to complete. To see if this makes a difference, in future studies,

fewer text boxes, or one large text box, should be provided for participants to write down their

thoughts. This would ensure that the presentation of the free response portion of the study does

not affect participants' ability to respond. Additionally, having the communication remarks

within the study manipulation presented as only written remarks might have limited the effects of

the experiment manipulation on both participant SSOMC and integrative complexity scores. In

future studies, these communication remarks should be presented in both written and oral form to

ensure that the predicted effects replicate across these two message modalities.

CONCLUSION

The findings of the current study provide support for the distinct construct hypothesis,

which states that integrative complexity and OMC assess conceptually distinct constructs. These

findings strongly suggest that integrative complexity and SSOMC do not measure the same

construct. The current study demonstrates that integrative complexity and OMC are conceptually

distinct phenomena that are influenced by different situational variables in significantly different

ways. Thus, these findings provide discriminant validation of the new psychological concept of

situation-specific open-minded cognition.

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VITA

Madeleine Kindler was born in Charlottesville, Virginia, but was raised for most of her life in Kalamazoo, Michigan. Ms. Kindler received her Bachelor of Science, cum laude, in Psychology at Loyola University Chicago before also pursuing her Master of Arts in Applied Social Psychology at Loyola University Chicago.

Currently, Ms. Kindler is an Executive Assistant, in the field of Industrial Organizational Psychology, for the company John Behr Group, working closely alongside executive coach and executive assessor John Behr. She lives in Chicago, Illinois.