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Aversive and avoidant indecisiveness: Roles for regret proneness, maximization, and BIS/BAS sensitivities

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ABSTRACT

Though indecisiveness is associated with several mental disorders and a range of problematic psychological outcomes in normal populations, it is still poorly understood. We distinguish two features of indecisiveness: (a) *aversive*, a generalized aversion for decisions that manifests as threat-oriented cognition and negative affect when making decisions, and (b) *avoidant*, a generalized motivation to avoid decisions and to experience difficulties making decisions. Using exploratory (Study 1) and confirmatory (Study 2) factor analyses, we show that the Indecisiveness Scale (Frost & Shows, 1993) possesses factors reflecting these two features. Moreover, we use correlation and regression to test hypotheses regarding the relationships among these components of indecisiveness and regret proneness, maximization, and BIS and BAS sensitivities. Results suggest the utility of distinguishing aversive from avoidant indecisiveness as well as characterizing stable attitudes towards decisions in terms of basic personality processes.

1. Introduction

Indecisiveness is a problematic trait that appears both in clinical populations, where it is associated with depression, dependent personality disorder, and obsessive-compulsive disorder (cf. Rassin, 2007), and in normal populations, where it is associated with depressive and obsessive-compulsive symptoms, trait anxiety, and worry proneness (Frost & Shows, 1993; Rassin & Muris, 2005b; Rassin, Muris, Franken, Smit, & Wong, 2007). Despite its problematic nature, indecisiveness continues to be poorly understood. In the present studies, we show that the Indecisiveness Scale (Frost & Shows, 1993) is best represented by two factors, one that manifests as threat-oriented cognition and negative affect in response to decisions, and one that manifests as avoidant preferences and difficulties in response to decisions. We also present evidence suggesting the utility of situating indecisiveness, as well as other decision-related traits, in the revised Reinforcement Sensitivity Theory of personality variation (Gray & McNaughton, 2000).

1.1. Refining indecisiveness: aversion for vs. avoidance of deciding

Beattie, Baron, Hershey, and Spranca (1994) coined the term *decision attitude* to refer to the desire to make or avoid a decision, independent of the consequences that making or avoiding the decision would achieve. They defined two decision attitudes: *seeking*, which motivates decision-making, and *aversion*, which motivates decision avoidance, defined by Anderson (2003) as withdrawing from a decision "by postponing it or by seeking an easy way out that involves no action or no change" (139). Avoiding a decision in a specific domain (e.g., career) has also been termed indecision, while indecisiveness has been used to refer to the disposition to prefer avoidance and experience difficulties when making any decision, no matter the domain (Germeijs & De Boeck, 2002). Supporting this characterization is research showing that indecisive individuals take longer and report more difficulty when making decisions (Frost & Shows, 1993), experience chronic difficulties deciding on a career (Germeijs & De Boeck, 2002), require more information before reaching decisions (Ferrari & Dovidio, 2000) and judgments (Rassin et al., 2007), and exhibit a preference for "do-not-know" answers when making decisions about controversial moral and political issues (Rassin & Muris, 2005b). Taken together, these studies confirm that indecisive individuals tend to experience difficulties and prefer avoidance when making decisions.

Although, Beattie et al. (1994) did not define *decision aversion* as a negative affective response, other research suggests that decisions can produce such responses. Early on, Janis and Mann (1977) showed that decisional conflicts produce a state of psychological distress that can be coped with through decision avoidance. As reported above, trait indecisiveness is associated

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with dispositions to experience anxiety, depression, and worry. In line with this, indecisive individuals making decisions in cognitively demanding situations report more anxiety and less confidence in their choices than decisive individuals (Ferrari & Dovidio, 2001). More recently, Rassin and Muris (2005a) showed that indecisiveness is associated with the tendency to interpret ambiguous situations as threatening. They concluded that indecisive individuals assume the "worse-case scenario" when confronted with uncertainty. Given that most decisions are made under uncertainty (risk and ambiguity), this suggests that indecisive individuals may be biased to interpret decisions as threats. Consequently, we suggest that *aversive* indecisiveness, characterized by negative affect and threat-oriented cognition when making and evaluating decisions, be theoretically distinguished from an *avoidant* indecisiveness, which is characterized by avoidant preferences and difficulties when making decisions.

1.2. Dispositional antecedents to aversive and avoidant indecisiveness

A promising framework for identifying the personality processes that predispose individuals to aversion for and avoidance of decisions is the revised Reinforcement Sensitivity Theory (rRST; Gray & McNaughton, 2000). In this theory, personality is determined by the sensitivity of three motivational systems, one that mediates avoidance of punishing stimuli and produces fear (the Fight/Flight/Freeze System; FFFS), one that mediates approach towards rewarding stimuli and produces positive affect (the Behavioral Activation System; BAS), and one that mediates the detection and resolution of conflicts within or between responses mediated by the FFFS and BAS, and which produces anxiety. This Behavioral Inhibition System (BIS), so named for its role in inhibiting behavior and resolving conflicting response options, is important for understanding emotional and motivational responses to decisions, which by definition feature such conflicts. Given this, we hypothesize that *aversive* indecisiveness is distally rooted in BIS sensitivity to decisions.

Two other dispositions specific to the domain of decision-making are also likely antecedents to aversive indecisiveness. The first is a proneness to the experience of regret, a negative emotional response that occurs after realizing or imagining that making a decision differently would have resulted in a better outcome (Zeelenberg, 1999). Though defined as a post-decision emotion, regret can affect the decision-maker in the pre-decision period by either being anticipated, or actually felt (in the case of anticipatory regret; cf. Anderson, 2003). Importantly, anticipated regret has been identified as a proximal cause of decision avoidance (Anderson, 2003), and Schwartz and colleagues (2002) present evidence that proneness to regret varies across individuals. Given that regret is a negative affective response to the anticipation or realization of having made a relatively bad decision, we hypothesize that regret proneness is positively associated with *aversive* indecisiveness. Moreover, the BIS is conceived as producing frustration in response to intrinsically rewarding stimuli that are perceived as relatively less rewarding than other stimuli (Gray & McNaughton, 2000), suggesting that regret may be a BIS-mediated emotional response. Thus, we hypothesize that regret proneness may have roots in BIS sensitivity, and that regret proneness at least partially mediates the relationship between BIS sensitivity and aversive indecisiveness.

A second important disposition is the tendency to "maximize" one's outcomes when making decisions. Maximizers approach decisions with the unrealistically high expectation that they will find the best alternative possible; this expectation, in turn, has the ironic effect of making the individual more prone to anticipating and experiencing regret (Schwartz et al., 2002). Not surprisingly, then, maximization is believed to be a dispositional antecedent to indecisiveness (Rassin, 2007). As suggested by the link between maximization and regret proneness, we hypothesize that this relationship is specific to *aversive* indecisiveness and that the relationship is mediated by regret proneness.

So far, we have identified increasing BIS sensitivity, regret proneness, and maximization as antecedents to indecisiveness, but specifically to *aversive* indecisiveness. What might uniquely explain *avoidant* indecisiveness, which spans both the avoidance of decisions and the inability to effectively make decisions? Decisions feature alternatives that present opportunities for reward or non-punishment. Any disposition that blunts the individual's sensitivity to the opportunity-affording features of a decision should make the individual less likely to approach the decision, as well as more likely to favor BIS-mediated conflict resolution in favor of FFFS-avoidance. Thus, we hypothesize that avoidant indecisiveness may be partially rooted in BAS-mediated responses to decisions, such that *decreasing* BAS sensitivity should be associated with *increasing* avoidant indecisiveness.

2. Study 1

The first goal of this study was to explore the factor structure of the Indecisiveness Scale (Frost & Shows, 1993). Both in its original development and in a recent refinement of the scale (Rassin et al., 2007), a one-factor model has been assumed. The second goal was to test our hypothesized relationships among aversive/avoidant indecisiveness, BIS/BAS sensitivities, regret proneness, and maximization.

2.1. Method

2.1.1. Participants

One hundred and thirty-three psychology undergraduates (22 men, 111 women; Mean Age = 20, SD = 3.14, Range = 17-41) at Erasmus University Rotterdam participated for course credit. The study (and Study 2) was approved by an institutional review board governing the ethical use of human subjects.

2.1.2. Measures

Indecisiveness Scale (Frost & Shows, 1993; Rassin et al., 2007): Though this 11-item scale measures general indecisiveness, it includes items that face validly span both aversive and avoidant aspects of the trait (see Table 1 for items).

Regret Scale (Schwartz et al., 2002): This 5-item scale measures proneness to regret when making and evaluating decisions (e.g., "Whenever I make a choice, I try to get information about how the other alternatives turned out"), and was translated into Dutch for the present study.

Maximization Scale (Schwartz et al., 2002): This 13-item scale measures the disposition to maximize when making decisions (e.g., "Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment"), and was translated into Dutch for the present study.

BIS/BAS Scales (Carver & White, 1994; Franken, Muris, & Rassin, 2005): This 20-item scale has four factors, one reflecting sensitivity of the BIS (e.g., "I worry about making mistakes"), and three reflecting dimensions of sensitivity of the BAS, including Drive (e.g., "If I see a chance for something I want, I move on it right away"), Fun Seeking (e.g., "I often act on the spur of the moment"), and Reward Responsiveness (e.g., "When good things happen to me, it affects me strongly"). Although the conceptual differences among these subscales are important (cf. Smillie, Jackson, & Dalgleish, 2006), they are not the focus of the present investigation. Consequently, we focus our analyses on the average of the 13 BAS items. Moreover, although the Carver and White scales were developed to

Table 1
Exploratory (Study 1) and confirmatory (Study 2) factor analysis loadings for the 11-Item Indecisiveness Scale.

	EFA (Study 1)		CFA (Study 2)	
	Aversive	Avoidant	Aversive	Avoidant
Aversive subscale				
5. Once I make a decision, I feel fairly confident that it is a good one[a]	.619	.323	.714	–
7. Once I make a decision, I stop worrying about it[a]	.477	.288	.556	–
8. I become anxious when making a decision	.685	.217	.702	–
9. I often worry about making the wrong choice	.775	.145	.707	–
10. After I have chosen or decided something, I often believe I've made the wrong choice or decision	.713	.350	.689	–
Avoidant subscale				
1. I try to put off making decisions	.208	.662	–	.640
2. I always know exactly what I want[a]	.324	.565	–	.514
3. I find it easy to make decisions[a]	.319	.753	–	.838
4. I like to be in a position to make decisions[a]	.137	.644	–	.479
6. I usually make decisions quickly[a]	.297	.647	–	.595
11. It seems that deciding on the most trivial thing takes me a long time	.463	.525	–	.588

[a] Reverse scored.

measure the BIS/BAS constructs as conceived in the original RST, recent publications suggest these scales can still be used to measure the more recently revised conception of BIS/BAS (Berkman, Lieberman, & Gable, 2009; Heym, Ferguson, & Lawrence, 2008).

2.1.3. Procedure

Participants completed the scales individually and in a random order.

2.2. Results

Indecisiveness factor structure: To determine the dimensionality of the Indecisiveness Scale, exploratory factor analysis (EFA) was conducted using Maximum likelihood estimation and Promax rotation. Promax rotation was used to maximize factor loadings on two equally important factors, while still allowing the factors to be correlated. In support of a two-factor structure, the eigenvalues for factors 1 and 2 were both greater than 1 (4.84 and 1.14), and the scree plot showed an elbow between 2 and 3 factors (see Table 1 for items and factor loadings). The factors were correlated .67 (less than the cutoff point of .70 that is used to argue for unique contributions of factors). The items on the first factor span *aversive* indecisiveness, while the items on the second factor span *avoidant* indecisiveness. The resulting reliability coefficients indicated that the scale had not suffered by being divided into two subscales (aversive, $\alpha = .82$; avoidant, $\alpha = .85$). Additionally, once the solution was rotated, aversive and avoidant indecisiveness contributed nearly equally to general indecisiveness (25% and 26%, respectively).

Theoretical relationships: Table 2 presents the means, standard deviations, and reliability coefficients for each scale, as well as the zero-order correlations among them. Reliabilities for all scales were satisfactory with the exception of maximization, BAS, and all BAS subscales. Despite these low reliabilities, we still report results from these measures, as they have been validated and used in previous literature (Carver & White, 1994; Schwartz et al., 2002). Replicating previous research (Rassin & Muris, 2005b), indecisiveness was higher among women ($M = 28.82$, $SD = 6.78$) than men ($M = 24.91$, $SD = 5.59$), $t(129) = 2.532$, $p = .01$; moreover, indecisiveness was negatively associated with age ($r = -.22$, $p < .05$). The results reported here (and in Study 2) are not affected by sex and age; moreover, all relationships involving BIS sensitivity remain when controlling for BAS sensitivity, and vice versa, except where otherwise noted.

Aversive/avoidant indecisiveness and BIS/BAS sensitivities: As seen in Table 2, aversive and avoidant indecisiveness both showed zero-order correlations with increasing BIS and decreasing BAS sensitivity. Given the strong relationship between aversive and avoidant indecisiveness ($r = .67$), we used multiple regression to assess their unique relationships with BIS and BAS sensitivity. When entering both as simultaneous predictors of BIS sensitivity, aversive indecisiveness showed a robust positive relationship ($B = .58$, $p < .001$), while avoidant indecisiveness did not ($B = .07$, $p = .46$). When entered as simultaneous predictors of BAS sensitivity, avoidant indecisiveness showed a robust negative relationship ($B = -.31$, $p < .01$), while aversive indecisiveness did not ($B = .02$, $p = .83$). This pattern is consistent with our hypotheses and suggests discriminant validity for aversive and avoidant indecisiveness in their unique relationships to BIS and BAS sensitivities, respectively.

Regret proneness, aversive indecisiveness and BIS sensitivity: As seen in Table 2, regret proneness showed zero-order correlations with increasing aversive indecisiveness, avoidant indecisiveness,

Table 2
Correlations between variables in Study 1 ($N = 131$).

	M	SD	α	1	1a	1b	2	3	4	5	5a	5b
1. Indecisiveness	28.16	6.74	.88	1.00								
1a. Aversive	12.28	3.36	.82	.93***	1.00							
1b. Avoidant	15.88	4.00	.85	.90***	.67***	1.00						
2. Regret proneness	18.88	4.97	.74	.45***	.53***	.31***	1.00					
3. Maximization	49.80	8.78	.62	.19*	.23**	.13	.47***	1.00				
4. BIS	20.24	3.95	.83	.58***	.63***	.46***	.42***	.25**	1.00			
5. BAS	40.46	3.89	.69	−.27**	−.19*	−.30**	−.01	.20*	−.02	1.00		
5a. Drive	11.31	1.95	.61	−.22*	−.12	−.27**	.02	.23**	−.10	.77***	1.00	
5b. Fun seeking	11.52	1.82	.50	−.21*	−.18*	−.20*	−.05	.05	−.13	.66***	.24**	1.00
5c. Reward	17.63	1.67	.62	−.14	−.09	−.16	.01	.14	.20*	.70***	.37***	.17*

* $p < .05$.
** $p < .01$.
*** $p < .001$.

and BIS sensitivity, and was not associated with BAS sensitivity. To assess unique relationships among aversive/avoidant indecisiveness and regret proneness, we once again used multiple regression. When entering both as simultaneous predictors of regret proneness, aversive indecisiveness showed a robust positive relationship ($B = .58$, $p < .001$), while avoidant indecisiveness did not ($B = -.08$, $p = .44$).

We hypothesized that regret proneness would at least partially mediate the relationship between BIS sensitivity and aversive indecisiveness. To test this, we used the Baron and Kenny (1986) approach. As reported above, BIS sensitivity was associated with regret proneness ($B = .42$, $p < .001$) and aversive indecisiveness ($B = .63$, $p < .001$). Next, we confirmed that regret proneness was still associated with aversive indecisiveness when controlling for BIS sensitivity ($B = .33$, $p < .001$). Finally, the path from BIS sensitivity to aversive indecisiveness was reduced when controlling for regret proneness ($B = .49$, $p < .001$). A Sobel test confirmed that this partial mediation was significant, $Z = 3.459$, $p<.001$.

Maximization, regret proneness, and aversive indecisiveness: As seen in Table 2, maximization showed zero-order correlations with increasing regret proneness and aversive indecisiveness, and was not associated with avoidant indecisiveness. We hypothesized that regret proneness mediates the relationship between maximization and aversive indecisiveness. As reported above, maximization was associated with regret proneness ($B = .47$, $p < .001$) and aversive indecisiveness ($B = .23$, $p < .01$). Next, we confirmed that regret proneness was still associated with aversive indecisiveness when controlling for maximization ($B = .56$, $p < .001$). Finally, the path from maximization to aversive indecisiveness was eliminated when controlling for regret proneness ($B = -.06$, $p = .48$). A Sobel test confirmed that this full mediation was significant, $Z = 4.457$, $p < .001$.

2.3. Discussion

In this study, an exploratory factor analysis of the Indecisiveness Scale suggested a two-factor model of indecisiveness that may be superior to the one-factor model that has been assumed in extant literature investigating indecisiveness. The usefulness of distinguishing between these two factors was reinforced by the finding that aversive indecisiveness was uniquely associated with increasing regret proneness, maximization, and BIS – and not BAS – sensitivity, while avoidant indecisiveness was uniquely associated only with decreasing BAS – and not BIS – sensitivity.

3. Study 2

In this study, our goals were to confirm the two-factor model of indecisiveness and replicate the theoretical relationships observed in Study 1.

3.1. Method

3.1.1. Participants

Two hundred and sixty-three individuals (76 men, 187 women; Mean Age = 32.85, SD = 11.65, Range = 18–70) were recruited to participate through online advertisements. All participants were US residents. Participation was voluntary and uncompensated.

3.1.2. Measures

The measures were identical to those used in Study 1, except that the original English versions were used.

3.1.3. Procedure

Participants completed the questionnaires online in a randomized order.

3.2. Results

Indecisiveness factor structure: the scale as a whole was reliable ($\alpha = .88$), but so were the subscales of aversive ($\alpha = .82$) and avoidant ($\alpha = .79$) indecisiveness. As in Study 1, the correlation between the subscales was high ($r = .69$), but still suggests unique contributions for the two factors.

As the two-factor solution was an *a priori* supposition for Study 2, confirmatory factor analysis (CFA; see Table 1) was conducted using EQS Version 6.1 for Windows (Bentler, 2006). Maximum likelihood estimation was used in all of our analyses. Variables measured on Likert scales were treated as continuous rather than categorical and thus robust statistics redress any lack of normality in our dataset rather than in our categories. Listwise deletion was used for any missing data. Two outliers that contributed disproportionately to multivariate kurtosis were excluded from all further analyses. Normality was examined using the normalized estimate of Mardia's coefficient (normality can be assumed inside the −3 to 3 range). As the Mardia's coefficient exceeded this range, robust computational methods were used and only robust statistics are reported below. To test the goodness-of-fit of factors we used the Yuan-Bentler residual-based test statistic, a chi-square statistic adjusted for non-normal and small samples (Yuan & Bentler, 2000). A chi-square test statistic is used to test the goodness-of-fit of factors, where better fit is represented by lower chi-squares and higher probability values. Model fit is demonstrated by a non-significant chi-square test statistic, which indicates that the difference between the model-based estimate and observed variance–covariance matrices is not reliable. Additionally, we report the robust comparative fit index (CFI; good fit >.90), standardized root-mean residual (SRMR; good fit <.08), and the robust root-mean-square error of approximation (RMSEA; good fit <.06) for a holistic evaluation of model fit (Hu & Bentler, 1999).

This analysis showed the two-factor structure to be a good fit, $\chi_{YB}^2(43, N = 261) = 56.0$, $p = .09$, CFI = .97, SRMR = .04, RMSEA = .05. This solution is depicted in Fig. 1. Conversely, the one-factor solution had a non-significant fit, $\chi_{YB}^2(44, N = 261)=70.4$, $p = .007$, CFI = .94, SRMR = .05, RMSEA = .07, although CFI and SRMR were still within acceptable range. Thus, to reinforce our acceptance of the two-factor structure we ran a Yuan-Bentler residual-based chi-square difference test to compare relative fit of the one- and two-factor models. To justify using the *less* restricted model (i.e., the model with more degrees of freedom – in this case the two-factor model) the Yuan-Bentler residual-based difference test statistic ($\Delta\chi^2 = T_1 - T_2$) should be greater than or equal to the chi-square value for the degrees of freedom of the difference ($df_d = df_1 - df_2$) at $p < .05$ (Bentler, 2006). This test indicated two factors were indeed a necessary specification, $\Delta\chi^2(1) = 14.4$, $p < .001$.

Theoretical relationships: Table 3 presents the means, standard deviations, and reliability coefficients for each scale, as well as the zero-order correlations among them. Reliabilities for all scales were satisfactory with the exception of maximization and BAS-R. As in Study 1, indecisiveness was higher among women ($M = 32.60$, SD = 7.98) than men ($M = 29.09$, SD = 7.65), $t(259) = 3.253$, $p < .001$, and was negatively associated with age ($r = -.17$, $p < .05$).

Aversive/avoidant indecisiveness and BIS/BAS sensitivities: As seen in Table 3, aversive and avoidant indecisiveness both showed zero-order correlations with increasing BIS and decreasing BAS sensitivity. When entering both as simultaneous predictors of BIS sensitivity, aversive indecisiveness showed a robust positive relationship ($B = .62$, $p < .001$), as did avoidant indecisiveness ($B = .14$, $p < .05$). When entered as simultaneous predictors of BAS sensitivity, avoidant indecisiveness showed a robust negative relationship ($B = -.34$, $p < .001$), while aversive indecisiveness did not ($B = .02$, $p = .85$). Though we failed to replicate the double dissociation

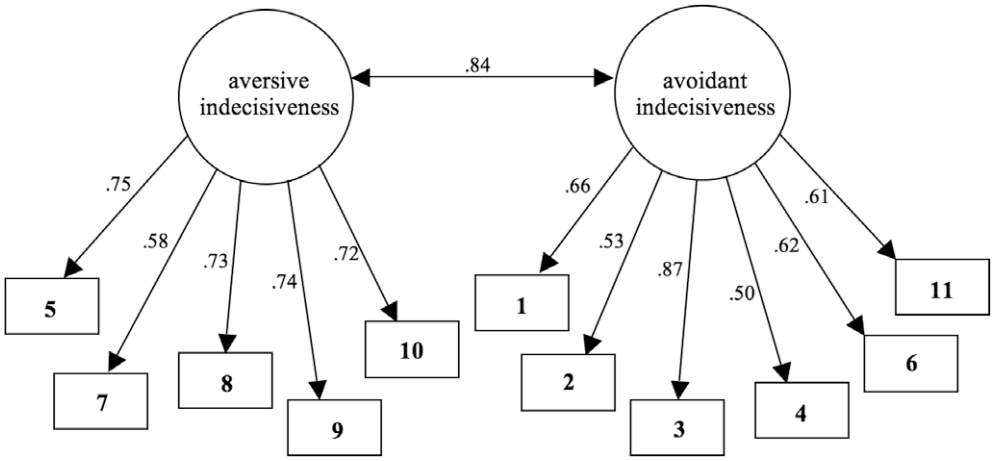

Fig. 1. Structural equation model tested in Study 2. Path coefficients are standardized and all paths were significant at $p < .05$. All dependent variables had error terms, however, they are omitted in this figure for readability.

Table 3
Correlations between variables in Study 2 ($N = 261$).

	M	SD	α	1	1a	1b	2	3	4	5	5a	5b
1. Indecisiveness	31.67	8.10	.88	1.00								
1a. Aversive	14.12	4.10	.82	.93***	1.00							
1b. Avoidant	17.49	4.67	.79	.91***	.69***	1.00						
2. Regret proneness	15.47	3.85	.77	.61***	.65***	.49***	1.00					
3. Maximization	39.26	6.56	.63	.42***	.42***	.35***	.55***	1.00				
4. BIS	25.10	5.27	.82	.69***	.71***	.56***	.55***	.34***	1.00			
5. BAS	46.65	6.62	.82	−.29***	−.21**	−.32***	−.13*	.01	−.14*	1.00		
5a. Drive	12.58	3.07	.67	−.32***	−.24***	−.35***	−.19**	.04	−.23***	.81***	1.00	
5b. Fun seeking	14.06	3.08	.74	−.31***	−.24***	−.33***	−.15*	−.09	−.20**	.78***	.43***	1.00
5c. Reward	20.01	2.44	.80	.03	.05	.01	.07	.09	.17**	.70***	.40***	.31***

* $p < .05$.
** $p < .01$.
*** $p < .001$.

among aversive/avoidant indecisiveness and BIS/BAS sensitivities observed in Study 1, we still found that aversive indecisiveness is associated with BIS – and not BAS – sensitivity, and that avoidant indecisiveness showed its strongest residual relationship with BAS sensitivity. This pattern is consistent with Study 1 and again suggests discriminant validity for aversive and avoidant indecisiveness.

Regret proneness, aversive indecisiveness, and BIS sensitivity. As seen in Table 3, regret proneness showed zero-order correlations with increasing aversive indecisiveness, avoidant indecisiveness, and BIS sensitivity, as well as decreasing BAS sensitivity. However, a partial correlation revealed that its relationship with BAS sensitivity was not robust to controlling for BIS sensitivity ($r = -.07$, $p = .26$). Furthermore, when entering aversive and avoidant indecisiveness as simultaneous predictors of regret proneness, aversive indecisiveness showed a robust positive relationship ($B = .58$, $p < .001$), while avoidant indecisiveness did not ($B = .08$, $p = .21$). These relationships are consistent with Study 1.

Once again, we tested to see if regret proneness partially mediated the relationship between BIS sensitivity and aversive indecisiveness. As reported above, BIS sensitivity was associated with regret proneness ($B = .55$, $p < .001$) and aversive indecisiveness ($B = .71$, $p < .001$). Next, we confirmed that regret proneness was still associated with aversive indecisiveness when controlling for BIS sensitivity ($B = .37$, $p < .001$). Finally, the path from BIS sensitivity to aversive indecisiveness was reduced when controlling for regret proneness ($B = .51$, $p < .001$). As in Study 1, a Sobel test confirmed that this partial mediation was significant, $Z = 6.302$, $p < .001$.

Maximization, regret proneness, and aversive indecisiveness: As seen in Table 3, maximization showed zero-order correlations with increasing regret proneness, aversive indecisiveness, and avoidant indecisiveness. However, when entering aversive and avoidant indecisiveness as simultaneous predictors of maximization, aversive indecisiveness showed a robust positive relationship ($B = .34$, $p < .001$), while avoidant indecisiveness did not ($B = .12$, $p = .12$). These relationships are consistent with Study 1. Consequently, we once again tested to see if regret proneness mediated the relationship between maximization and aversive indecisiveness. As reported above, maximization was associated with regret proneness ($B = .55$, $p < .001$) and with aversive indecisiveness ($B = .42$, $p < .01$). Next, we confirmed that regret proneness was associated with aversive indecisiveness when controlling for maximization ($B = .60$, $p < .001$). Finally, the path from maximization to aversive indecisiveness was eliminated when controlling for regret proneness ($B = .09$, $p = .11$). As in Study 1, a Sobel test confirmed that this full mediation was significant, $Z = 7.489$, $p < .001$.

3.3. Discussion

In this study, we confirmed a two-factor model of the Indecisiveness Scale. Considering the cultural and linguistic differences among the samples used in the two studies, the overall replication of Study 1's observed relationships is remarkable. The notable exception is the failed double dissociation between aversive/avoidant indecisiveness and BIS/BAS sensitivities, although the pattern of relationships is consistent with Study 1: aversive indecisiveness continued to show unique associations with only regret proneness,

maximization, and BIS sensitivity, but avoidant indecisiveness showed unique relationships to both decreasing BAS and increasing BIS sensitivities, although the residual relationship with BIS sensitivity was weak.

4. General discussion

In studies on Dutch and American samples, we found support for a two-factor conceptualization of the Indecisiveness Scale, with a 5-item subscale measuring the tendency toward threat-oriented cognition and negative affect when making and evaluating decisions (aversive indecisiveness), and a 6-item subscale measuring the tendency to prefer avoidance and experience difficulties when making decisions (avoidant indecisiveness). We suggest this as a useful development of the Indecisiveness Scale as well as the concept of trait indecisiveness.

We also present initial evidence establishing discriminant validity for these two factors. In both studies, aversive – and not avoidant – indecisiveness was uniquely associated with two decision-specific traits, regret proneness and maximization, both of which are associated with threat-oriented cognition and negative affectivity during decision-making (Schwartz et al., 2002). Moreover, aversive indecisiveness was strongly associated with BIS – and not BAS – sensitivity. This is consistent with the conception of the BIS as a threat-oriented, conflict-resolution system that produces anxiety. In line with these relationships, we found that regret proneness partially mediated the relationship between BIS sensitivity and aversive indecisiveness, and fully mediated the relationship between maximization and aversive indecisiveness. These results are consistent with both behavioral decision-making (cf. Anderson, 2003) and individual differences research (Schwartz et al., 2002) establishing a critical role for actual and anticipated regret in choice-related experience and behavior.

In Study 1, we found that avoidant indecisiveness – and not aversive – was uniquely associated with *decreasing* BAS – and not BIS – sensitivity. This is consistent with the conception of BAS as an opportunity-oriented, behavioral approach system that should motivate effective decision-making. We suggest that as BAS sensitivity decreases, the tendency to avoid and/or inefficiently approach decisions increases. In Study 2, we did observe a weak residual relationship between avoidant indecisiveness and increasing BIS sensitivity ($B = .14$), but avoidant indecisiveness showed the stronger residual relationship with decreasing BAS sensitivity ($B = -.34$). While this result may seem inconsistent with Study 1, avoidant indecisiveness does show a non-significant – yet positive – residual relationship with increasing BIS sensitivity ($B = .07$) in that study as well. We conclude that while aversive indecisiveness may be distally rooted in BIS – and not BAS – sensitivity, avoidant indecisiveness may have roots, however weak, in both BIS and BAS sensitivity. Further research can clarify what is likely a complex relationship between constructs in the rRST and individual differences in emotional and motivational responses to decisions.

Future research can also further validate the distinction between aversive and avoidant indecisiveness. For example, we hypothesize that many of the traits associated with general indecisiveness in past research (e.g., worry proneness and anxiety) are uniquely associated with aversive – and not avoidant – indecisiveness. Moreover, studies featuring behavioral criteria should separately consider variables rooted in aversive (e.g., self-reported anxiety, confidence judgments) and avoidant (e.g., self-reported difficulty, latency, avoidant preferences) indecisiveness. Such research will facilitate a richer understanding of this problematic trait.

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