

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Adolescence

journal homepage: www.elsevier.com/locate/adolescence

A matter of fact? Adolescents' assumptions about crime, laws, and authority and their domain-specific beliefs about punishment



Benjamin Oosterhoff^{a,*}, Natalie J. Shook^b, Aaron Metzger^b

^a University of Texas Health Science Center at Houston, Department of Psychiatry and Behavioral Health Sciences, 1941 East Road, Houston, TX, 77054, USA

^b West Virginia University, Department of Psychology, P.O. Box 6040, Campus Drive, Morgantown, WV, 26505, USA

ARTICLE INFO

Keywords:

Social domain theory
Beliefs about punishment
Informational assumptions
Right-wing authoritarianism
Social dominance orientation

ABSTRACT

This study examined adolescents' beliefs about the amount of punishment individuals should receive for violating different laws and whether these beliefs are connected with their informational assumptions (i.e., perceived facts) about crime, laws, and authority. American adolescents ($N = 340$; $M_{\text{age}} = 16.64$, 58.2% female) reported their judgments concerning the appropriate punishment for violating laws regulating domain-specific behaviors and their informational assumptions regarding the prevalence and causes of crime, beliefs that authority is knowledgeable, and the purpose of punishment. Greater internal attributions for crime was associated with stronger punishment judgments for violating laws that regulate moral and conventional issues. Greater beliefs that punishment teaches right from wrong was associated with stronger punishment judgments for violating laws that regulate drug-related prudential issues, and lower punishment judgments for violating laws that regulate personal issues. Greater beliefs that authorities are more knowledgeable than others was associated with stronger punishment judgments for violating laws that regulate personal issues.

Adolescence is a developmental period characterized by substantial gains in sociopolitical understanding and greater contact with social and legal organizations (Moffitt, 1993; Smetana & Villalobos, 2009). During adolescence, youth are forming more nuanced beliefs about the nature and role of social and political systems, including whether certain issues should be subject to social regulation and how authorities should respond if these laws are violated. Adolescents' concepts of law-breaking and punishment are pertinent components of their sociopolitical understanding (Oosterhoff & Metzger, 2017), because they have important implications for social and political attitudes and behavior. For instance, beliefs about punishment for law-breaking are foundational to attitudes concerning social policies and practices involving the criminal justice system, such as length of prison sentences, use of the death penalty, and readiness to criminalize socially disapproved behaviors (Duckitt, 2009). Adolescents' beliefs about punishment may also have implications for their involvement in delinquency, as youth who ascribe greater punishment for law violations are less likely to engage in delinquent behaviors themselves (Oosterhoff & Metzger, 2017).

To date, the majority of research examining beliefs about punishment has utilized adult samples and has focused on support for the death penalty or longer prison sentences. Less is known about youths' ascriptions of punishment for violating laws that regulate different forms of crime and delinquency, or how these beliefs intersect with other facets of their emerging sociopolitical understanding. Social domain scholars propose that variation in social beliefs may be explained by differences in “informational assumptions,” which represent an individual's perceived fact-based understanding of social events and behaviors (Wainryb, 1991).

* Corresponding author. Department of Pediatrics, Psychology Section, Baylor College of Medicine/Texas Children's Hospital, Houston, TX, USA.
E-mail address: Benjamin.oosterhoff@bcm.edu (B. Oosterhoff).

<https://doi.org/10.1016/j.adolescence.2017.11.007>

Received 28 June 2017; Received in revised form 8 November 2017; Accepted 13 November 2017

Available online 21 November 2017

0140-1971/© 2017 The Foundation for Professionals in Services for Adolescents. Published by Elsevier Ltd. All rights reserved.

However, researchers have not yet examined adolescents' fact-based understanding of crime, laws, and authority, or whether these assumptions are associated with their domain-specific beliefs about punishment. Using a social domain framework, this study examined the extent to which adolescents' informational assumptions concerning crime, laws, and authority were associated with ascriptions of punishment for violating laws that regulate different issues.

1. Beliefs about punishment: A social domain approach

Beliefs about law-breaking and punishment have generally been examined in the context of criminology, sociology, and political science. Developmental psychologists have recently highlighted that conceptualizations of laws, obedience, and punishment are important components of adolescents' social and civic understanding (Oosterhoff & Metzger, 2017). During adolescence, youth are gaining increased abstract reasoning abilities while simultaneously engaging in higher levels of delinquency, which may lead to greater contact with legal systems and personal experiences with the consequences of law violations. The convergence of these two processes may lead youth to form beliefs about the appropriate punishment for violating different laws. From a social-cognitive developmental perspective, early experiences with law violations and emerging beliefs about punishment that are formed during adolescence as a result of these experiences may serve as the basis for punishment judgments later in life (Smetana, 2006).

Social domain theory is a potentially useful framework to examine adolescents' concepts of different types of laws and beliefs about the appropriate punishment for law violations. According to social domain theory, individuals judge and reason about social information from different domains of social knowledge (Turiel, 1983). The *moral* domain pertains to issues that concern the welfare of others, justice, and rights (e.g., fighting, cheating, stealing). Moral issues are obligatory, unalterable, and universally applicable (not contingent on social rules or authority). In contrast, *conventional* concepts are alterable, arbitrary, agreed-upon regulations that are dependent on authority and used to govern social interaction (e.g., obtaining a fishing license). The *personal* domain pertains to matters of personal preference and is not subject to moral or conventional authority. These issues are not a matter of right or wrong or subject to regulation, but are up to the individual (e.g., friendships choices). *Prudential* issues also concern personal matters, but in the context of prudence or self-harm (e.g., wearing a seatbelt).

Scholars have applied social domain theory to investigate adolescents' beliefs about laws and punishment (Oosterhoff & Metzger, 2017). Specifically, this research has found domain consistency in youths' judgments and justifications about violations of laws regulating moral (e.g., fighting in public, vandalism, stealing), conventional (e.g., parking violations, obtaining fishing permits, registering ones car), and prudential (e.g., drug use) issues. Adolescents also viewed laws regulating personal issues, such as wearing baggy clothes in public, joining extracurricular activities, and getting a job, as illegitimate and violations of personal freedom. Similar domain-specific patterns have been demonstrated in adolescents' beliefs about the deserved punishment for violating different laws, with violations of laws regulating moral and prudential issues rated as deserving the most punishment, followed by violations of laws regulating conventional issues, and violations of laws regulating personal issues (Oosterhoff & Metzger, 2017). These findings indicate that adolescents have a complex understanding of laws and punishment that aligns with distinct domains of social knowledge.

Although adolescents' beliefs about laws follow domain specific patterns, there is still considerable heterogeneity in youths' judgments about the appropriate punishment for violating different laws (Oosterhoff & Metzger, 2017). Some of this variability may be accounted for by individual differences in youths' emerging social and political values systems. For instance, Oosterhoff, Shook, Clay, and Metzger (2017) found that youths' sociopolitical values concerning right-wing authoritarian and social dominance orientation were differentially associated with their beliefs about laws that regulate domain-specific behaviors. However, less research has examined the ways in which youths' views of punishment align with other facets of political understanding, including their factual assumptions about the nature and prevalence of crime, purpose of laws, and competence of authority.

2. Informational assumptions and beliefs about punishment

One potential source of variation in adolescents' punishment judgments concerns their informational assumptions about crime, laws, and authority. Informational assumptions pertain to perceived factual (either accurate or inaccurate) knowledge of the world (Wainryb, 1991). Unlike values or judgments, these factual assumptions are not evaluative, but rather represent an understanding about the characteristics of individual, social, or physical phenomena. Social domain theorists have used informational assumptions as a way of explaining heterogeneity in moral understanding and have typically focused on assumptions concerning multifaceted social phenomena, such as the point at which human life begins, the origins of sexual preferences, and the utility of corporal punishment (Smetana, 1981, 1982; Turiel, Hildebrandt, Wainryb, & Saltzstein, 1991). Variations in informational assumptions are thought to influence social and moral judgments by changing the meaning or interpretation of an event (Wainryb, 1991). For example, individuals who assume that life originates at conception may view abortion at any gestational age as morally wrong due to impediments on the rights and welfare of the fetus. In contrast, those who assume life originates later in pregnancy or at birth are more likely to judge and reason about abortion as a personal matter that should be up to the individual mother (Smetana, 1981). Similarly, adolescents may be forming informational assumptions about crime, laws, and authority that may be used to inform their beliefs about punishment.

Little research has examined adolescents' informational assumptions pertaining to crime, laws, and authority. However, research in criminology and political science, which emphasizes the instrumental and ideological basis of punitive attitudes, suggests that informational assumptions may be an important component of youths' judgments about punishment. For instance, the instrumental perspective of crime and punishment suggests that people endorse harsh punishment because they believe it will deter future crime (King & Maruna, 2009). Accordingly, people may be more inclined to endorse greater deserved punishment when they view that

violent crime is prevalent or that punishment effectively prevents crime by teaching individuals right from wrong (Tyler & Weber, 1982). Ideological perspectives suggest that certain individuals have dispositions that favor personal responsibility and the legitimacy of authority (i.e., authoritarianism). These individuals may be more inclined to view crime as a personal decision and be more demanding of authority to uphold social order through punishment (Gerber & Jackson, 2016). Additionally, those who favor the legitimacy of authority may perceive authority figures as more competent and knowledgeable in their ability to address social issues, and thus, endorse greater punishment as a means of supporting authority and denouncing law-breaking. Accordingly, ideological perspectives suggest that adolescents' punitive beliefs may be partially rooted in internal attributions for crime and assumptions that authority is more knowledgeable or competent than others.

Adolescents' informational assumptions concerning the prevalence and causes of crime, beliefs that authority is knowledgeable, and purpose of punishment may be associated with their punishment judgments for violations of laws that regulate domain-specific issues. For example, adolescents who perceive the individual as responsible for a crime may view the offense as intentional and more serious and thus deserving of greater punishment (Rucker, Polifroni, Tetlock, & Scott, 2004; Sims, 2003). This may be especially true for those who violate moral issues, which involve direct transgressions on other people and are already typically viewed as more serious than other violations (Cushman, 2008; Tisak & Turiel, 1988). Additionally, those with stronger beliefs that violent crime is prevalent may also endorse greater punishment judgments for moral violations as a means of reducing future crime and achieving security (Sibley, Wilson, & Duckitt, 2007). Very little research has examined youths' beliefs about the knowledge of authority or purpose of punishment. However, youth who view that authority figures are more knowledgeable than others may have a more limited concept of the personal domain and subsequently endorse stronger punishment judgements for violating laws that regulate issues that are typically a matter of personal prerogative. In contrast, youth who view that the purpose of punishment is to teach right from wrong may support greater punishment for laws that regulate non-personal issues as means of emphasizing the wrongness of the act.

3. Current study

Using a social domain framework, the current study explored associations among youths' informational assumptions and beliefs about the amount of punishment individuals should receive for violating laws regulating moral, conventional, personal, and prudential issues. Given the paucity of research on domain-specificity in youths' beliefs about punishment and informational assumptions, this research was largely exploratory. However, it was generally expected that adolescents would vary in their assumptions concerning internal attributions for crime, the perceived prevalence of crime, beliefs that authority is more knowledgeable than others, and beliefs that punishment teaches right from wrong, and that greater endorsement of these assumptions would be associated with greater punishment judgments for law violations. Additionally, prior research has shown that adolescents' sociopolitical values are associated with domain-specific beliefs about laws (Oosterhoff et al., 2017) and informational assumptions (Mirels & Dean, 2006). Thus, analyses accounted for youths' endorsement of right-wing authoritarianism and social dominance orientation. Further, given the novelty of the research area, exploratory analyses were conducted to test whether links between informational assumptions and punishment judgments varied by gender and grade. These analyses were conducted to test the generalizability of our findings and no specific differences were expected.

4. Method

4.1. Participants

Participants were 340 students in grades 9–12 (ages 13–20 years, $M = 16.64$, $SD = 1.37$) at a high school in a mid-sized, U.S. Appalachian city. The sample was primarily 12th graders ($n = 148$, 43.5%), with fewer 11th graders ($n = 95$, 27.9%), 10th graders ($n = 47$, 13.8%), and 9th graders ($n = 32$, 9.4%) and was composed of slightly more females ($n = 198$, 58.2%) than males ($n = 137$, 40.2%). Five participants did not report their gender. The sample was primarily White/Caucasian ($n = 254$, 83.5%), followed by biracial ($n = 37$, 10.9%), African American/Black ($n = 18$, 5.9%), Asian American/Pacific Islander ($n = 12$, 4.0%), and other ($n = 11$, 3.6%). Very few participants were Hispanic/Latino ($n = 6$, 2.0%). Based on school report data (LaFleur, Shaw, Coutts, & Larson, 2013), the racial/ethnic composition of the sample was similar to the high school from which it was drawn. All participants indicated that they were U.S. citizens.

4.2. Measures

4.2.1. Informational assumptions

Focus groups were held with a total of $N = 20$ youth ($n = 5$ youth per group) that entailed a discussion of different assumptions youth had about crime, laws, and authority. Consistent with prior research and theory (Gerber & Jackson, 2016; Wainryb, 1991), youth highlighted several assumptions when discussing their beliefs about punishment, including notions of the prevalence and causes of crime, beliefs about the purpose of punishment to teach others right and wrong, and concepts that punishment is needed because authority is more knowledgeable than others. Based on prior research (Cassese & Webber, 2014; Duckitt, 2001) and feedback from these discussions, 12 items were created to assess youths' informational assumptions concerning the *prevalence of crime* (3 items), *internal attributions for crime* (3 items), *belief that authority is knowledgeable* (3 items), and *purpose of punishment to teach right/wrong* (3 items). Given that each assumption was assessed with only a few items, item-total correlations (ITC) were used to assess

Table 1
Descriptive Statistics and Factor Loadings for Item-Level Indicators Representing Informational Assumptions and Punishment Judgments.

Construct	Item	ITC	<i>M</i>	<i>SD</i>	Factor Loading
Informational Assumptions					
Prevalence of Crime	There is a lot of violent crime in the U.S. today	0.42	4.79	1.43	0.56
	There are a lot of threatening people in America	0.48	4.61	1.38	0.69
	A lot of people in our country attack others for no reason	0.34	4.16	1.75	0.53
Internal Attributions	People break the law because they do not want to make an honest living	0.64	3.58	1.65	0.73
	People commit crime because they lack a strong moral fiber	0.69	3.53	1.62	0.85
	People break the law because deep down they're evil	0.59	3.18	1.53	0.68
Punishment Teach Right/Wrong	Getting in trouble with the law makes people think about breaking laws before they actually do it	0.42	3.28	1.51	0.64
	Getting in trouble with the law teaches people that what they did was wrong	0.37	3.99	1.42	0.52
	Harsh punishment teaches people what they can and cannot do	0.32	2.35	1.37	0.48
Belief that Authority is Knowledgeable	Lawmakers know more about why we need rules than most people	0.67	5.12	1.34	0.79
	Lawmakers know more about how to prevent crime than most people	0.70	4.99	1.33	0.87
	Lawmakers have a better understanding of social problems than most people	0.58	4.45	1.49	0.64
Punishment Judgments					
Moral	Taking money from other people without their permission	0.47	3.88	0.86	0.55
	Vandalizing a community building in your neighborhood	0.47	3.47	0.94	0.95
	Getting in a fist-fight in public	0.27	3.03	1.03	0.27
Conventional	Fishing without a license	0.38	2.06	0.98	0.43
	Parking in empty parking lot that has “no parking” signs posted	0.47	2.22	0.88	0.71
	Not renewing your car registration at the DMV	0.45	3.16	0.99	0.65
Personal	Whether those 16 and older are required to get a job	0.40	1.34	0.75	0.57
	Wearing baggy pants or low cut shirts in public	0.40	1.31	0.69	0.51
	Joining out-of-school clubs or activities	0.55	1.18	0.53	0.80
Prudential	Using prescription pills not meant for you	0.62	3.78	1.13	0.82
	Using drugs (e.g., cocaine)	0.62	4.01	1.13	0.75

Notes: Model fit: $\chi^2(202) = 355.03$, CFI = 0.92, RMSEA = 0.047 [0.039, 0.055], SRMR = 0.05. ITC = Corrected Item-Total Correlation. Standardized estimates are displayed for the factor loadings.

reliability, with all items indicating acceptable internal consistency (values > 0.30; Nunnally & Bernstein, 1994). Exact item wording and ITCs for all items are displayed in Table 1. Youth rated the extent to which they agreed with each statement on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher values indicating greater agreement with each specific assumption.

4.2.2. Punishment judgments

Similar to prior research (Oosterhoff & Metzger, 2017), participants indicated how much punishment people should receive for engaging in 11 acts of delinquency that corresponded to four distinct categories of behavior consistent with social domain theory (moral, conventional, personal, and drug-related prudential). Participants were asked “If the government made a law about each of the following things and someone broke that law, how much punishment should they receive?”. Participants were then presented with situations depicting violations of laws regulating moral issues (3 items; i.e., stealing money, vandalism, fighting in public), conventional issues (3 items; i.e., fishing without a license, parking violations, failure to register vehicle), personal issues (3 items; i.e., joining out of school activities, getting a job, wearing baggy clothes in public), and drug-related prudential issues (2 items; i.e., using drugs like cocaine, using prescription pills) on a 5-point scale from 1 (*no punishment*) to 5 (*a lot of punishment*). Exact item wording and ITCs for all items are displayed in Table 1. Higher ratings indicated beliefs that violations of the act are deserving of greater punishment.

4.2.3. Right-wing authoritarianism

Right-wing authoritarianism was assessed with the 20-item ($\alpha = 0.92$) Right-Wing Authoritarianism scale (Altemeyer, 1998; e.g., “What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path”). Responses ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Means scores were calculated with higher values indicating greater right-wing authoritarianism.

4.2.4. Social dominance orientation

Social dominance orientation was assessed using the full 14-item ($\alpha = 0.89$) Social Dominance Orientation measure (Pratto, Sidanius, Stallworth, & Malle, 1994). Participants rated their feelings towards certain statements (e.g., “Some people are just inferior to others”) on a 7-point scale from 1 (*very negative*) to 7 (*very positive*). Mean scores were calculated with higher values indicating greater social dominance orientation.

4.3. Procedure

All adolescents enrolled in social studies classes were eligible to participate (approximately $N = 800$; participation rate of 42.5%).

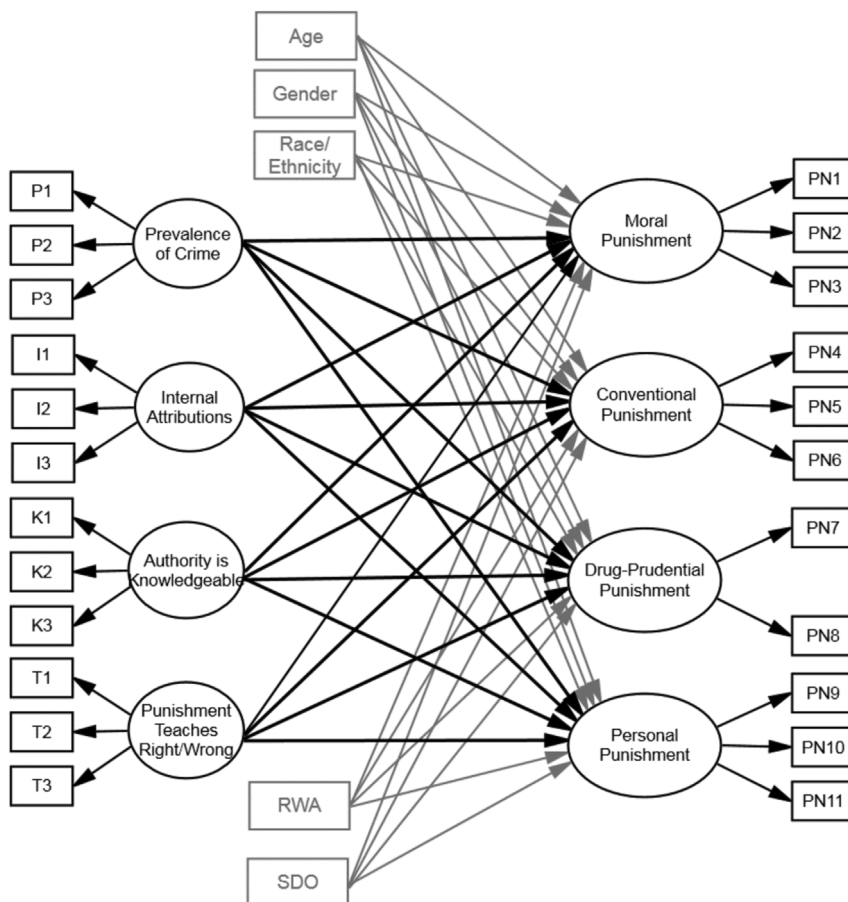


Fig. 1. Conceptual figure depicting structural model testing associations among informational assumptions and domain-specific punishment judgments. Notes: RWA = Right-wing authoritarianism, SDO = Social dominance orientation.

Participants completed a survey during scheduled social studies class periods. Only students who obtained both signed parental permission and completed assent forms were allowed to participate in the study. Members of the research team were available to answer questions and to ensure that participants understood all survey items. All participating adolescents were eligible for randomly drawn cash prizes and gift cards ranging in value from \$10 to \$100.

4.4. Analytic technique

Latent variable structural equation modeling was used to examine associations among informational assumptions and adolescents' beliefs about punishment for violating domain-specific issues. First, a measurement model was tested in which item-level indicators were used to specify first-order latent variables representing beliefs about the prevalence of crime, internal attributions of crime, belief that authority is knowledgeable, and ability for punishment to teach right/wrong. Item-level indicators were also specified for four latent variables representing punishment judgements for violations of laws regulating moral, conventional, personal, and drug-related prudential issues. Multi-group analyses were then used to test for metric and scalar measurement invariance for the measurement model across gender and grade (9th and 10th grade versus 11th and 12th grade). Invariance was indicated by a $\Delta CFI < 0.01$ (Cheung & Rensvold, 2002).

A structural model was then tested in which the four latent variables representing domain-specific beliefs about punishment were regressed on the four latent variables representing informational assumptions. To ensure findings were not due to variation in sociopolitical values or demographic characteristics, analyses accounted for adolescent age, gender, race/ethnicity, right-wing authoritarianism, and social dominance orientation. Fig. 1 displays a conceptual figure depicting the full structural model. Exploratory multi-group models were then estimated to determine if the structural paths varied across gender or grade. Model fit was evaluated with standard metrics, and acceptable fit was indicated with $\chi^2/df < 3.0$, confirmatory fit index (CFI) > 0.90 , root-mean square error of approximation (RMSEA) < 0.08 , and standardized root mean square residual (SRMR) < 0.08 (Ullman & Bentler, 2003). All analyses were performed in Mplus version 7 and utilized maximum likelihood estimation.

4.4.1. Missing data

Some youth were missing data on informational assumptions (< 2%), punishment judgments, (< 1%) or demographic covariates (< 2%). Full-information maximum likelihood (FIML) estimation was used to address this missing data.

5. Results

Table 1 presents the descriptive statistics for key study variables. Bivariate correlations among study variables including item-level indicators and covariates are available in the supplemental file. In general, females endorsed a higher prevalence of crime than males (item-level $r_s = 0.18$ to 0.22). Adolescent females and non-white youth also generally endorsed greater punishment for violations of conventional issues than males or white youth, respectively (item-level $r_s = 0.02$ to 0.14). Greater right-wing authoritarianism was correlated with greater endorsement of all types of informational assumptions (item-level $r_s = 0.17$ to 0.44), and greater social dominance orientation was correlated with greater internal attributions of crime (item-level $r_s = 0.07$ to 0.31). Greater right-wing authoritarianism was generally correlated with greater endorsement of deserved punishment across domains (item-level $r_s = 0.02$ to 0.28) and greater social dominance orientation was correlated with greater punishment judgments for laws regulating personal issues (item-level $r_s = 0.07$ to 0.14).

5.1. Measurement model

A measurement model was estimated to test whether item-level indicators for informational assumptions and beliefs about the deserved punishment for violating laws regulating domain-specific issues loaded onto their respective latent factors. The model provided an acceptable fit to the data, $\chi^2 (202) = 355.03$, CFI = 0.92, RMSEA [90% Confidence Intervals] = 0.05 [0.04, 0.06], SRMR = 0.05. All factor loadings were significant and the majority ranged from 0.43 to 0.95 (see Table 1), although the factor loading for the deserved punishment for fighting in public was slightly lower ($\beta = 0.27$). Standardized covariances among latent variables are displayed in Table 2. In general, informational assumptions were moderately correlated with one another and punishment judgments were moderately correlated across domains. All informational assumptions were correlated with endorsement of greater punishment judgments for moral and drug-related prudential violations. Beliefs concerning the prevalence of crime and internal attributions of crime were correlated with greater punishment for violating laws regulating conventional issues, and greater belief that authority is knowledgeable was correlated with greater punishment for laws regulating personal issues.

Multi-group models were used to examine whether the measurement model varied by gender and grade. Metric invariance across gender was tested by comparing a configural model with all parameters free to vary across boys and girls to a model with factor loadings constrained to be equal. Table 3 displays the model fit indices for these invariance tests. The ΔCFI was 0.003, which supports metric invariance and suggests that the factor loadings did not differ by gender. Tests for scalar invariance were also non-significant ($\Delta CFI = 0.006$), suggesting that intercepts were similar across groups. Similar model comparisons were performed to test invariance across students in early high school (9th and 10th grade) versus late high school (11th and 12th grade). The ΔCFI was non-significant for both the metric (0.009) and scalar (0.006) models, supporting invariance by grade (see Table 3).

5.2. Structural model

A structural model was estimated to test whether informational assumptions were independently associated with adolescents' beliefs about punishment after accounting for sociopolitical values and demographic characteristics (see Fig. 1). Covariances were specified among the informational assumption latent variables and separate covariances were specified among the residual variances for the punishment judgment latent variables. The model provided an acceptable fit to the data, $\chi^2 (285) = 475.59$, CFI = 0.91, RMSEA [90% Confidence Intervals] = 0.05 [0.04, 0.05], SRMR = 0.05. Table 4 displays the standardized estimates, unstandardized estimates, and standard errors for this model. Greater right-wing authoritarianism was associated with greater punishment for violating laws that regulate drug-related prudential issues. Greater social dominance orientation was associated with greater punishment judgements for violating laws that regulate personal issues and lower punishment judgements for violating laws that regulate prudential issues. Greater internal attributions of crime was associated with greater punishment judgements for violating laws

Table 2
Covariances among Latent Variables in Measurement Model.

	2	3	4	5	6	7	8
1. Prevalence of Crime	0.22*	0.04	0.20*	0.15*	0.20**	0.30***	-0.09
2. Internal Attributions		0.40***	0.33***	0.36***	0.52***	0.32***	0.12
3. Belief that Authority is Knowledgeable			0.51***	0.13*	0.09	0.19*	0.15*
4. Punishment Teaches Right/Wrong				0.18*	0.12	0.32***	-0.13
5. Moral Punishment					0.52***	0.42***	0.19**
6. Conventional Punishment						0.54***	0.39***
7. Drug-Prudential Punishment							0.09
8. Personal Punishment							

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Covariances among all variables are available in the supplemental file.

Table 3
Model Fit Indices for Measurement and Structural Multi-group Models.

Model	χ^2 (df)	CFI	RMSEA [90% CI]	SRMR	$\Delta\chi^2$ (df)	Δ CFI
Measurement Models						
Gender Configural	607.643 (404)	0.890	0.055 [0.046,.064]	0.070		
Gender Metric	628.346 (419)	0.887	0.055 [0.046, 0.063]	0.073	20.70 (15), $p = 0.14$	0.003
Gender Scalar	654.333 (434)	0.881	0.055[0.046,.064]	0.075	25.99 (15), $p = 0.04$	0.006
Grade Configural	594.32 (404)	0.900	0.053[0.043,.062]	0.068		
Grade Metric	631.21 (419)	0.891	0.055[0.046,.063]	0.072	36.89 (15) $p = 0.001$	0.009
Grade Scalar	654.21 (434)	0.885	0.055 [0.046, 0.063]	0.072	22.99 (15) $p = 0.08$	0.006
Structural Models						
Gender Unconstrained	855.35 (586)	0.870	0.053 [0.045, 0.060]	0.075		
Gender Constrained	879.66 (618)	0.874	0.050 [0.043, 0.058]	0.079	24.31 (32), $p = 0.83$	0.004
Grade Unconstrained	831.91 (576)	0.874	0.053 [0.045, 0.060]	0.074		
Grade Constrained	868.13 (608)	0.872	0.052 [0.044, 0.059]	0.076	36.22 (32) $p = 0.28$	0.002

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Grade grouped as 1 = 9th-10th grade, 2 = 11th – 12th grade.

Table 4
Standardized Estimates, Unstandardized Estimates, and Standard Errors for Structural Models Testing Associations among Informational Assumptions and Punishment Judgments for Violations of Domain-Specific Laws.

	Punishment Judgments											
	Moral Violations			Convention Violations			Drug-Prudential Violations			Personal Violations		
	β	B	SE	β	B	SE	B	B	SE	β	B	SE
Demographics												
Age	0.03	0.02	0.04	-0.02	-0.02	0.05	-0.03	-0.03	0.05	0.01	0.01	0.05
Gender	-0.04	-0.10	0.15	0.16*	0.36	0.18	0.08	0.19	0.16	0.00	0.00	0.16
Race/Ethnicity	-0.09	-0.24	0.14	-0.16*	-0.41	0.17	0.13*	0.35	0.16	-0.06	-0.15	0.16
Sociopolitical Values												
Right-Wing Authoritarianism	-0.03	-0.02	0.09	-0.07	-0.05	0.10	0.24*	0.20	0.09	0.05	0.04	0.09
Social Dominance Orientation	-0.11	-0.12	0.07	-0.06	-0.06	0.08	-0.27***	-0.32	0.08	0.17*	0.18	0.08
Informational Assumptions												
Prevalence of Crime	0.07	0.08	0.08	0.08	0.09	0.09	0.12	0.15	0.09	-0.05	-0.05	0.09
Internal Attributions	0.38**	0.41	0.16	0.34*	0.37	0.19	0.16	0.20	0.17	0.04	0.04	0.17
Belief that Authority is Knowledgeable	-0.03	-0.04	0.10	-0.03	-0.04	0.12	-0.01	-0.01	0.11	0.24*	0.26	0.11
Punishment Teaches Right/Wrong	0.09	0.09	0.11	0.07	0.08	0.13	0.25*	0.29	0.13	-0.30*	-0.32	0.14

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Model fit: $\chi^2(285) = 475.59$, CFI = 0.91, RMSEA = 0.045 [0.037,0.051], SRMR = 0.05. Gender coded 1 = male, 2 = female. Race/ethnicity coded 0 = non-white, 1 = white.

that regulate moral and conventional issues. Greater belief that authority is knowledgeable was associated with greater punishment judgements for violating laws that regulate personal issues. Greater beliefs that laws teach right from wrong was associated with greater punishment judgments for violating laws that regulate prudential issues, but lower punishment judgment from violating laws that regulate personal issues. Greater assumptions about the prevalence of crime was associated with greater punishment judgments for violating laws that regulate prudential issues.

5.2.1. Multi-group models

Multi-group models were tested to examine whether structural paths varied by gender or grade. The Δ CFI was 0.004 for the gender multi-group model and 0.002 for the grade multi-group model (see Table 3). These findings support the generalizability of the overall model and suggest that the structural paths did not collectively differ for boys and girls or youth in early high school compared to late high school.

6. Discussion

Adolescence is a developmental period characterized by emerging and transforming sociopolitical understanding. An important component of adolescents' social and political understanding concerns their beliefs about the roles and responsibilities of government, including appropriate responses of government authority when laws are violated. Concepts of laws and punishment formed during adolescence are thought to undergird similar beliefs in adulthood (Altemeyer, 1996). This study examined the intersection between adolescents' informational assumptions about crime, laws, and authority and their concepts of punishment for violating laws that regulate domain-specific issues. Latent variable modeling indicated nuanced and domain-specific associations among adolescents' informational assumptions and their ascriptions of punishment for violating different laws. Importantly, findings were significant even when accounting for important demographic covariates and youths' sociopolitical values. Moreover, findings from this

study were also consistent across adolescents' gender and grade level.

Consistent with expectations, adolescents in this study endorsed a wide variety of informational assumptions concerning crime, laws, and authority. Feedback from qualitative focus groups and quantitative ratings indicated that youth varied in their endorsement of assumptions concerning the prevalence of crime, attributions for crime, perceived knowledge of authority, and the purpose of punishment. Social domain theorists have highlighted that variation in informational assumptions likely arise from multiple cognitive and social biases that alter perceptions of reality (Wainryb, 2004). Variability in youths' endorsement of informational assumptions may reflect the convergence between personal biases and emerging and expanding understanding of social, political, and legal systems.

Adolescents' informational assumptions may be an especially relevant component of social understanding used to inform their ascriptions of punishment. Informational assumptions are thought to alter the meaning or interpretation of a given event and subsequently lead to variation in how youth judge or reason about acceptability of different behaviors (Wainryb, 1991). In the current study, adolescents' assumptions about crime, laws, and authority were connected with their domain-specific beliefs about punishment. Youth may draw on their factual beliefs about crime, laws, and authority when evaluating whether and how authorities should respond when laws are violated. Overall, these findings suggest that youths' informational assumptions are a meaningful component of their social and political understanding that has important implications for youths' social and civic development.

The specific connection between informational assumptions and punishment judgments varied based on the type of law being violated. For instance, greater internal attributions of crime were associated with stronger punishment judgments for violating laws that regulate moral and conventional issues. Prior research indicates that those who perceive crime as a consequence of personal factors view transgressions as more serious and endorse more punitive judgments to violations compared to those who endorse situational explanations (Sims, 2003). Potentially, youth who attribute crime to dispositional characteristics may view violations as more personally controllable and intentional, and thus deserving of greater punishment (Cushman, 2008). This shift in blame may be more relevant for punishment judgments about laws that involve the violation of the rights and welfare of others (moral issues) or those that directly defy culturally relevant norms (conventional issues) due to the implications of such violations for others (e.g., direct harm or disregard for cultural-specific standards).

We also found that greater belief that punishment teaches right from wrong was associated with stronger punishment judgments for violating laws that regulate drug-related prudential issues, and lower punishment judgments for violating laws that regulate personal issues. In general, many youth view laws regulating drug-related prudential issues as important, obligatory to follow, and worthy of high levels of punishment when violated (Oosterhoff & Metzger, 2017). However, drug use is still prevalent among adolescents (Chassin et al., 2004), and youth who report having used different illicit substances view drug use as acceptable and a personal choice (Nucci, Guerra, & Lee, 1991). Potentially, youth who believe that punishment teaches people right from wrong may support greater punishment for drug-related prudential issues as a means of advocating for the wrongness of the act, given that some of their peers may view drug use as acceptable and a matter of personal prerogative. Greater beliefs that punishment teaches right from wrong was also associated with lower punishment judgments for violating laws that regulate personal issues, including whether youth are able to wear baggy clothes in public, join organized activities, or get a job. Although these issues are based on actual forms of legislation in some jurisdictions, youth generally view engagement in these behaviors as a matter of personal prerogative that are not subject to legal regulation (Oosterhoff & Metzger, 2017). Youth who believe that punishment teaches right from wrong may endorse lower punishment for violating laws that regulate personal issues because the behavior is generally viewed as acceptable and not 'wrong' under prototypical conditions.

Greater belief that authority is more knowledgeable than others was associated with stronger punishment judgments for violating laws that regulate personal issues. Youth may have less personal experience with regulations over personal issues and subsequently rely on their perception of the knowledge and abilities of authority figures to determine the appropriate punishment for such violations. Youth who view that authority is more knowledgeable about social issues than others may have a more limited perception of which behaviors are subject to personal jurisdiction and subsequently view violations of laws that regulate personal issues as worthy of punishment. Alternatively, it is also possible that youth who have a more expanded personal domain and subsequently endorse lower punishment judgments for violating laws that regulate personal issues are more inclined to question the knowledge and competence of authority figures.

Although not the central focus on this research, sociopolitical values were also associated with domain-specific concepts of punishment. Specifically, greater right-wing authoritarianism was associated with greater punishment for violating laws that regulate prudential issues, and greater social dominance orientation was associated with greater punishment for violating laws that regulate personal issues but lower punishment for violating laws that regulate prudential issues. Engaging in drug-related forms of delinquency may pose a threat to personal safety and conflict with the theorized underlying motivational goals of right-wing authoritarianism (i.e., upholding social conformity and security; Duckitt, 2001). Additionally, social dominance orientation entails support for hierarchy, dominance, and expressions of power (Pratto et al., 1994). These values may conflict with concepts of broader personal autonomy, which is thought to be an inherent characteristic of more egalitarian societies (Young, 1988). Potentially, youth who endorse greater social dominance orientation may support greater punishment for violating laws that regulate personal issues as a means of promoting hierarchy and expressing power. Prior research also indicates that youth who endorse higher social dominance orientation are more engaged in substance use, which may be a means of promoting peer status and establishing social hierarchy (Oosterhoff et al., 2017). Accordingly, those higher in social dominance orientation may ascribe lower punishment judgments for drug-related prudential issues because they may be engaging in substance use themselves. Together, these findings further support that right-wing authoritarianism and social dominance orientation represent sociopolitical values with distinct motivational goals and differential socio-moral implications that are evident during adolescence.

Results from this study should be interpreted in light of certain limitations. Data are correlational and cross-sectional. Thus, inferences concerning causality or temporal sequencing are cautioned. Future longitudinal research is needed to examine whether assumptions precede judgments, and experimental designs manipulating informational assumptions are needed to establish causality. Additionally, the sample was primarily White and from a limited geographical region of the United States. Future research is needed to assess whether similar processes are present for youth from foreign born parents and those from more diverse racial and ethnic backgrounds. Youth from different cultures and backgrounds may have different assumptions about laws and punishment, which may help explain cultural variation in authoritarian beliefs (Duriez, Van Hiel, & Kossowska, 2005). Although similar to prior research (Oosterhoff & Metzger, 2017), beliefs about laws regulating prudential issues primarily concerned drug use and future research is needed to explore beliefs concerning a wider breadth of prudential behaviors.

Despite these limitations, this study has important theoretical implications. Prior research suggests that youths' informational assumptions may be one explanation for cultural variation in beliefs about moral and non-moral behaviors (Wainryb, 1991). This study extends this research and suggests that informational assumptions may also help explain heterogeneity in beliefs about deserved punishment, which represents a topic of much political debate in many countries (Duckitt, 2009). Theoretical models designed to explain variation in youths' sociopolitical understanding may benefit from capturing and distinguishing between descriptive knowledge and prescriptive beliefs. Further, findings from this study also raise important questions concerning the source of variation in informational assumptions, and whether such assumptions are present in other facets of political life.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.adolescence.2017.11.007>.

References

- Altemeyer, B. (1996). *The authoritarian specter*. Cambridge, MA: Harvard University Press.
- Altemeyer, B. (1998). *The 20-item RWA scale*. Unpublished Manuscript. University of Manitoba.
- Cassese, E., & Weber, C. (2014). Emotion, attribution, and attitude toward crime. *Journal of Integrated Social Sciences*, 2, 63–97.
- Chassin, L., Hussong, A., Barrera, M., Jr., Molina, B., Trim, R., & Ritter, J. (2004). Adolescent substance use. In R. Lerner, & L. Steinberg (Eds.). *Handbook of adolescent psychology* (pp. 665–696). (2nd ed.). New York: Wiley.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, 9, 233–255.
- Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition*, 108, 353–380.
- Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology*, 33, 41–113.
- Duckitt, J. (2009). Punishment attitudes: Their social and psychological bases. In M. Oswald, S. Bieneck, & J. Hupfeld-Heinemann (Eds.). *Social psychology of punishment of crime* (pp. 75–92). Oxford, UK: Wiley-Blackwell.
- Duriez, B., Van Hiel, A., & Kossowska, M. (2005). Authoritarianism and social dominance in Western and Eastern Europe: The importance of the sociopolitical context and of political interest and involvement. *Political Psychology*, 26, 299–320.
- Gerber, M. M., & Jackson, J. (2016). Authority and punishment: On the ideological basis of punitive attitudes towards criminals. *Psychiatry, Psychology and Law*, 23, 113–134.
- King, A., & Maruna, S. (2009). Is a conservative just a liberal who has been mugged? Exploring the origins of punitive views. *Punishment & Society*, 11, 147–169.
- LaFleur, J., Shaw, A., Coutts, S., & Larson, J. (2013). *The opportunity gap: Is your state providing equal access to education?* Retrieved from <http://projects.propublica.org/schools/>.
- Mirels, H. L., & Dean, J. B. (2006). Right-wing authoritarianism, attitude salience, and beliefs about matters of fact. *Political Psychology*, 27, 839–866.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, 100, 674–701.
- Nucci, L., Guerra, N., & Lee, J. (1991). Adolescent judgments of the personal, prudential, and normative aspects of drug usage. *Developmental Psychology*, 27, 841–848.
- Nunnally, J. C., & Bernstein, I. H. (1994). The assessment of reliability. *Psychometric Theory*, 3, 248–292.
- Oosterhoff, B., & Metzger, A. (2017). Domain specificity in adolescents' concepts of laws: Associations among beliefs and behavior. *Journal of Research on Adolescence*, 27, 139–154.
- Oosterhoff, B., Shook, N. J., Clay, W. R., & Metzger, A. (2017). Differential and domain-specific associations among right-wing authoritarianism, social dominance orientation, and adolescent delinquency. *Personality and Social Psychology Bulletin*, 43, 1296–1310.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741–763.
- Rucker, D. D., Polifroni, M., Tetlock, P. E., & Scott, A. L. (2004). On the assignment of punishment: The impact of general-societal threat and the moderating role of severity. *Personality and Social Psychology Bulletin*, 30, 673–684.
- Sibley, C. G., Wilson, M. S., & Duckitt, J. (2007). Effects of dangerous and competitive worldviews on right-wing authoritarianism and social dominance orientation over a five-month period. *Political Psychology*, 28, 357–371.
- Sims, B. (2003). The impact of causal attribution on correctional ideology: A national study. *Criminal Justice Review*, 28, 1–25.
- Smetana, J. G. (1981). Reasoning in the personal and moral domains: Adolescent and young adult women's decision-making regarding abortion. *Journal of Applied Developmental Psychology*, 2, 211–226.
- Smetana, J. G. (1982). *Concepts of self and morality: Women's reasoning about abortion*. New York: Praeger.
- Smetana, J. G. (2006). Social domain theory: Consistencies and variations in children's moral and social judgments. In M. Killen, & J. G. Smetana (Eds.). *Handbook of moral development* (pp. 119–154). Mahwah, NJ: Erlbaum.
- Smetana, J. G., & Villalobos, M. (2009). Social cognitive development in adolescence. In R. M. Lerner, & L. Steinberg (Eds.). *Handbook of adolescent psychology. Vol. 1: Individual bases of adolescent development* (pp. 187–228). (3rd ed.). Hoboken, NJ: Wiley.
- Tisak, M. S., & Turiel, E. (1988). Variation in seriousness of transgressions and children's moral and conventional concepts. *Developmental Psychology*, 24, 352–357.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge, UK: Cambridge University Press.
- Turiel, E., Hildebrandt, C., Wainryb, C., & Saltzstein, H. D. (1991). Judging social issues: Difficulties, inconsistencies, and consistencies. *Monographs of the Society for Research in Child Development*, 56, 1–103.
- Tyler, T. R., & Weber, R. (1982). Support for the death penalty; instrumental response to crime, or symbolic attitude? *Law and Society Review*, 17, 21–45.
- Ullman, J. B., & Bentler, P. M. (2003). Structural equation modeling. In J. A. Schinka, & W. F. Velicer (Eds.). *Handbook of psychology* (pp. 607–634). New York, NY: John Wiley.
- Wainryb, C. (1991). Understanding differences in moral judgments: The role of informational assumptions. *Child Development*, 62, 840–851.
- Wainryb, C. (2004). "Is" and "ought": Moral judgments about the world as understood. *New Directions for Child and Adolescent Development*, 2004, 3–18.
- Young, R. (1988). Autonomy and egalitarianism. *Political Studies*, 36, 663–679.