



Crime Stereotypicality and Severity Database (CriSSD): Subjective norms for 63 crimes

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Abstract

The existence of crime-related racial stereotypes has been well documented. People tend to associate certain groups with specific crimes, which, in turn, impacts criminal-sentencing decisions through the perceptions of crime severity. This evidence calls for regular updating of rating norms combining these variables. With this objective, and given that most of the normative studies provide norms for a small number of crimes and/or with an insufficient number of participants, a new norming study was conducted. Furthermore, norms from European countries are absent, and the existing ones (mostly with USA-based populations) do not simultaneously examine crime stereotypicality and crime severity. The Crime Stereotypicality and Severity Database (CriSSD) presents normative ratings for a set of 63 crimes on three dimensions: White stereotypicality, Black stereotypicality, and crime severity. The crimes were selected according to a comprehensive procedure. A total of 340 Portuguese participants (72.6% female; $M_{age} = 26.86$, $SD = 7.65$) answered an online survey. Each crime was evaluated by a range of 46–60 participants. Data allowed us to identify a crime typology with three clusters. We present descriptive data (means, standard deviations, and 95% confidence intervals) for each crime. Crime evaluations were associated with sociodemographic characteristics. Additionally, this study gives input regarding the understudied link between crime stereotypes and crime severity, showing that crime severity is predicted by ratings of both Black and White stereotypicality. The CriSSD (available at osf.io/gkbrm) provides a valuable resource for researchers in the field of social psychology to conduct studies with controlled materials on potential disparities in criminal-sentencing decisions.

Keywords Crime stereotypicality · Crime severity · Normative data · Subjective ratings · Crime rating norms · Crime stereotypes

The influence of extralegal factors in criminal-sentencing decisions has been largely studied. Experimental research in this field has used mock jury paradigms to systematically vary information on different crime scenarios in order to understand if and which legally irrelevant factors impact perceptions, evaluations, and decisions (e.g., Bodenhausen & Wyer, 1985; Jones & Kaplan, 2003; Miranda et al., 2021). The extensive research conducted on this topic has focused on several aspects, such as the impact of race, gender, attractiveness, and

sexual orientation (e.g., Bodenhausen, 1990; Gordon, 1990, 1993; Jones & Kaplan, 2003; Petsko & Bodenhausen, 2019; Skorinko & Spellman, 2013; Sommers & Ellsworth, 2000).

Concerning the impact of race, research is consensual in showing the existence of more unfavorable sentencing decisions toward Black people (Baldus et al., 1998; Mitchell et al., 2005; Sweeney & Haney, 1992). Black defendants are targeted with harsher sentences, especially when associated to a stereotypically Black crime (Gordon et al., 1988; Jones & Kaplan, 2003), the so-called race–crime congruency effect. This effect results from the match between defendants’ race and crime-related racial stereotypes. A recent study showed that this effect holds even in post-sentencing decisions, with participants being less in favor of the early release of Black prisoners who committed a stereotypically Black crime (Miranda et al., 2021). In this study, we focus on these well-documented crime stereotypes and on its relation to perceived crime severity. The CriSSD develops

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normative ratings for a set of 63 criminal acts. The crimes were rated for White stereotypicality, Black stereotypicality, and severity.

In the following sections, we will address the dimensions of interest and their relationships to each other, as well as the available normative studies.

Crime stereotypicality

Crime stereotypes play a fundamental and consistent role in juror decision-making. Research suggests that people tend to associate certain groups with specific crimes, the so-called crime stereotypicality or race–crime congruency effect. This effect refers to a bias where people show a tendency to condemn Blacks more than Whites for stereotypically Black crimes and the opposite pattern when the crimes are stereotypically White (Boetcher, 2009; Esqueda, 1997; Gordon et al., 1996; Jones & Kaplan, 2003; Osborne & Davies, 2012; Skorinko & Spellman, 2013; Sunnafrank & Fontes, 1983). As an example, the crime of motor vehicle theft (also named of vehicle theft/ auto theft/ grand-theft auto/ carjacking) is perceived as more likely of having been committed by Black offenders, whereas embezzlement is perceived as more likely to have been engaged by White offenders.

This concept was first developed by Sunnafrank and Fontes (1983) who went beyond the study of the traditional general racial bias possessed by jurors. Instead, they studied crime-related racial stereotypes (i.e., the perception of the propensities for members of different racial groups to commit certain crimes) and proposed that the existence of racial stereotypes associated with specific crimes could affect jurors' perceptions and sentencing.

The typology of racially associated crimes soon was considered determinant in many areas of decision-making within the criminal justice system, and decisions that resulted in unfavorable outcomes for low-status groups. As Jones and Kaplan (2003) have experimentally showed, a Black defendant who commits a Black stereotyped crime is perceived as more guilty and receives a longer sentence than a White defendant convicted of the same crime. When the supposedly committed crime is stereotypically White, participants perceive the White defendant as more guilty; however, they do not attribute a harsher punishment to the White defendant compared to his Black counterpart. Overall, this suggests that matching the specific crime stereotype has a greater biasing effect than the general racial identity.

The importance of considering crime stereotypicality in the sentencing phase is further complemented by the results of a meta-analysis (Mazzella & Feingold, 1994). Results showed a non-significant main effect of defendants' race on the relevant outcomes, so that Black and White defendants were considered equally guilty of committing criminal

behavior and were recommended similar levels of punitiveness. However, the effect of the defendant's race on recommended sentences was made clear when the type of crime was taken into account. In fact, the recommended punishment was harsher for Black defendants than for Whites in cases of negligent homicide, and for Whites than for Blacks in crimes of embezzlement/fraud.

Previous research has reported the various ways by which crime stereotypicality can influence cognitive processes. For example, Jones and Kaplan (2003) showed the influence of race-crime combinations on the amount and type of information searched, with participants requesting fewer pieces of evidence and using a confirmatory (vs. diagnostic) information-gathering strategy when there is a group–crime congruency. In the same line, Bodenhausen (1988) showed that discrimination against stereotyped social groups emerges from biased evidence-processing, asserting that discrimination is caused by a selective processing of the evidence. Other studies show how crime stereotypicality affects subjects' memory/recall of the defendant and the information about the case (e.g., Bodenhausen & Wyer, 1985). For instance, when there is a match between the race of the defendant and the crime stereotype, participants more accurately recall the defendant's race and recall a greater proportion of negative (than positive) evidence (Bodenhausen & Lichtenstein, 1987; Skorinko & Spellman, 2013). Additionally, other studies have demonstrated that crimes that are consistent with the stereotype of the offender are attributed to more stable, dispositional factors which, in turn, increase the culpability of the defendant and produce harsher punishment recommendations (Bodenhausen & Wyer, 1985; Gordon, 1990; Gordon et al., 1988).

Altogether, these studies show that combining the defendant's race with the crime-related racial stereotypes leads to racial bias in legal decisions, even more than the general racial category. They further demonstrate that race–crime congruency affects cognitions mediating judgments, therefore acting as cognitive heuristics and as a way of simplifying judgments and decisions.

Perceived crime severity

The perceived severity of an offense is an important variable when assigning a punishment/sentence to a perpetrator (Carlsmith et al., 2002; Darley et al., 2000; Tanasichuk, 2007; Warr, et al., 1983). According to Carlsmith et al. (2002), sentencing decisions are mostly driven by the just deserts rationale, which states that a person deserves punishment proportionate to the harm and moral wrong committed. Thus, when assigning a punishment for an illegal behavior, people intend to give the perpetrator his or her just deserts based on the magnitude of harm (type of crime and its severity) and attenuating circumstances. Findings from Warr et al.'s (1983) study indicate that

when the age and prior record of the offender are held constant, the perceived severity of the crimes is the central criterion used by respondents for determining legal punishments.

The body of research on perceived crime severity was pioneered by Sellin and Wolfgang (1964). These authors presented a measure of perceived crime seriousness that was based both on the opinion of legal experts (juvenile court judges and police officers) and on public opinion (college students). Another landmark study was conducted a decade later (Rossi et al., 1974). In order to measure the potential support for penal reforms among state elites, these authors developed rankings of the severity of criminal acts (140) by examining the nature and degree of consensus concerning a sample of crimes with more representative samples. It was found that crimes committed against a person were rated significantly more severe than property crimes. White-collar crimes (e.g., embezzlement), victimless crimes (e.g., prostitution), and misdemeanors (e.g., disturbing the peace) tended to be rated the least serious. Crimes against police officers were seen as more severe than crimes committed against others.

After another decade gone by, the National Survey of Crime Severity (NSCS) constitutes the largest study of perceived crime severity (Wolfgang et al., 1985). The NSCS derived severity scores for 204 crimes ranked by 60,000 participants and found that the consequences of a crime affected the ratings strongly (same offenses with different consequences were rated significantly different) and that severity was higher for violent than for property crimes.

Despite consensus across society regarding the perception of crime severity along the three studies, a standard definition is still not available in the literature. The adjective “serious/severe” and the noun “seriousness/severity” have been used, both in measurement instruments and in research reports, without formal specification of meaning. In fact, most studies are based on the assumption that such definition is not necessary (Stylianou, 2003). This term resists precise abstract definition, can be easily translated into operational forms through the use of sample surveys, is important in empirical research, and remains obstinately necessary in popular and vernacular vocabularies (Rossi et al., 1974).

The most essential characteristic associated with perceived severity of an act is the act’s perceived consequences: violent behaviors that cause bodily harm are generally perceived as more severe than property crimes (causing property loss or property damage) (Evans & Scott, 1984; Herzog, 2003; Rossi & Henry, 1980; Rossi et al., 1974; Sellin & Wolfgang, 1964; Stylianou, 2003; Warr, 1989; Wolfgang et al., 1985). Aside from the crimes’ perceived consequences, some authors highlight the nature of harm (economic versus physical) (Schrager & Short, 1980) and others the perceived wrongfulness and the moral aspects (Blum-West, 1985; Stylianou, 2003; Warr, 1989) as important dimensions of severity perceptions.

In general, the present literature is consistent with the view that perceived crime severity is a key variable in legal reasoning. Moreover, authors have found a great deal of agreement across society about crime severity ratings.

The relationship between crime stereotypicality and crime severity

There are few studies that examine the relation between crime stereotypicality and perceptions of crime severity, and the results are, to some extent, ambiguous. While some studies have not found a significant association between offender’s race/ethnicity and perceived crime severity (Benjamin, 1989; Cohen-Raz et al., 1997), others have found such association under specific conditions (Herzog, 2003). For instance, Gordon et al.’s (1988) study suggests that perceived crime severity may be a result of the type of crime committed but also of the race of the perceiver. Authors showed that White students tended to perceive the crime more typically associated with their own race (embezzlement) to be more severe than burglary, which suggests that White and Black participants view the two types of crime differently. In the same line of reasoning, Boetcher (2009) showed that race and severity are not independent, as a match between the defendant’s race and the stereotypicality of the crime makes the crime appear more severe and, thus, through a mediation path, increases punishment. Also, Gordon and Anderson (1995) demonstrated that perceived crime severity mediates the relation between perceived crime typicality and punishment recommendations (length of jail sentence, length of time to parole, and bail amount), meaning that crime stereotypes affect severity perceptions which, in turn, affect punishment recommendations.

There is also a significant body of literature that explores the severity of specific types of crimes, over time or in comparison to other crimes. Cullen et al. (1982) explored the changes in the perceptions of white-collar crimes from those of Rossi et al.’s (1974) findings. Although they found that white-collar crimes were rated, on average, as less serious than more common street crimes, they demonstrated that the perceptions of certain white-collar crimes had increased and was even ranked as more severe than some types of conventional homicide. Another study showed that most participants favored incarceration for embezzlers more than for burglars and prostitutes (Cullen et al., 1985). Also, Sinden (1980) found that although white-collar crimes were rated as less severe than crimes against persons, they were perceived as more serious than property crimes. The same pattern was found by Rosenmerkel (2001), who showed that white-collar crimes were perceived as less severe than violent crimes, but as more serious than crimes against property. In sum, the existing literature on public opinion about white-collar crimes shows that people consider these criminal acts to be severe and are willing to punish white-collar offenders (Cullen et al., 2020).

Overall, these studies show the importance of simultaneously assessing crime stereotypicality and crime severity. However, the studies exploring this link are rarely based on normative ratings of crimes. Instead, they tend to pick arbitrary crimes or to assess them independently for each new study using a variety of measurements. Yet, there have been contributions to categorize and rate crimes, as we highlight in the following section.

Available normative studies on crime stereotypicality

In the last 30 years, there have been efforts to describe associations of crimes to specific groups mainly in the context of the USA. These efforts are summarized in Table 1.

In sum, this body of literature points out several associations between race and criminal behaviors. For example, crimes often presented as being typical of Blacks are motor vehicle theft, assault/mugging, robbery, burglary, assault on a police officer, and gang activity. On the other hand, crimes frequently referred as being typical of Whites are embezzlement, fraud – in general and in specific (i.e., credit fraud, insurance fraud, research fraud, plagiarism), child molestation, hate crimes, forgery and counterfeiting, arson, Internet hacking, bribery, DUI (driving under the influence), amongst others.

However, some criminal behaviors are less clear. For example, some crimes are pointed out as being typical of both White and Black people, such as murder, rape, and promoting prostitution/soliciting.

Although these studies contributed to the general distinction between stereotypic and non-stereotypic crimes, this area of work has not been updated in a while. In addition, most of the existing normative studies provide norms for a small number of crimes and/or with an insufficient number of participants. Thus, the field lacks a study that simultaneously measures crime stereotypicality and severity with an extensive and methodical approach to the selected crimes. The current study adopted a comprehensive approach by mapping the entire legal typology from the Portuguese Penal Code and used recent measures for each of the issues.

To our knowledge, none of the existing normative studies of criminal behaviors have been conducted in Europe, where most of the countries follow the civil law system (Neubauer & Meinhold, 2016), a different legal system from the common law widely used in the USA and Canada. These two systems differ mainly in the methods of judicial reasoning and in the rules that regulate the implementation of the law (Joireman, 2004). In countries that follow the civil law system, the law derives from the application of the written law (i.e., codes and statutes), in the sense that it serves to guide the actions of lawyers and judges, while in countries with the common law tradition, the law derives from the decisions that

are made and the problems that arise on a case-by-case basis. In these countries, jurisprudence/case law (i.e., consensus, the result of the majority of judicial decisions on a given matter) has more relevance than the written law (Deflem, 2008; Joireman, 2004; Neubauer & Meinhold, 2016).

Hence, to the best of our knowledge, this paper presents the first database of criminal behaviors evaluated simultaneously in White and Black stereotypicality and in perceived severity in a European country with a civil law tradition, such as Portugal. Also, since both racial attitudes and perceptions of crime severity are likely to change over time (Cullen et al., 1982; Schuman et al., 1997), this study offers an up-to-date assessment of current stereotypes related to several offenses.

The current study

The aim of this study is to develop a large normative database for several crimes framed within the Portuguese context regarding their White stereotypicality, Black stereotypicality, and perceived severity.

It is crucial for the scientific community to build available up-to-date normative data on several crimes that allow researchers to select crimes according to specific features and attain appropriate experimental control in the design of experiments on the legal context (such as mock jurors' studies examining memory, attribution, and information-gathering processes). It also benefits the study of disparities in judicial decisions as the result of the application of extra-legal factors (i.e., race, gender, or income) having crime stereotypicality and severity controlled.

To this end, we aim at developing a comprehensive database of crimes and have each one rated on White stereotypicality, Black stereotypicality, and perceived severity. As done by several authors (Esqueda, 1997; Jones & Kaplan, 2003; Osborne & Davies, 2012), we do not identify a target in the stimulus presented to participants (i.e., not presenting vignettes with a depicted target nor asking participants to match the photographs of convicted criminals with several crimes; Sunnafrank & Fontes, 1983), as we want to measure the association between each crime and race without presenting a target in the scenarios. This allows us to extract the role of other factors such as the gender and age of the defendant, or even the attractiveness, facial expression, and phenotypic stereotypicality, when using photographs in criminal cases (see Eberhardt et al., 2006; Blair et al., 2004). Also, following the work done by Skorinko and Spellman (2013), we asked participants to evaluate specific offenses instead of abstract crime categories.

The two major racialized groups in the context in which the data was collected are the White and the Black groups. We opted to separate the race variable into two (i.e., White stereotypicality and Black stereotypicality) in order to

Table 1 Synthesis of the normative studies on crimes' stereotypicality

Paper	Method		Measure	Results			
	<i>n</i>	Location		Stereotypically Black Crimes	Stereotypically White Crimes	Nonstereotypic Crimes of Whites or Blacks	Typical of Both Groups
Sunnafank and Fontes (1983)	78	Michigan, USA	Matching the photographs of convicted male criminals (5 Black and 5 White) with ten crimes	Assault–mugging, grand-theft auto, assault on a police officer, soliciting	Fraud, embezzlement, child molestation, rape, counterfeiting	Vehicular manslaughter	-
Gordon et al. (1996)	244	USA, not specified	Ranking 14 crimes in a 14-points rating scale of crimes committed most/least often by 5 specific racial/ethnic groups (including Black and White)	Aggravated assault, motor vehicle theft, robbery, drug violations, rape, criminal homicide	Embezzlement, forgery, fraud	Theft, simple assaults, arson	Offenses against family, prostitution
Esqueda (1997)	80	University of Nebraska-Lincoln	Signaling which crimes from a sheet (21) they believed to be committed by males from five ethnic groups (including Black and White)	Shoplifting, auto theft, armed robbery, assault/mugging, robbery, assault on police, narcotics sales	Embezzlement, fraud, tax evasion, counterfeiting, bribery, forgery, child molestation, promoting prostitution, arson	-	Rape, murder, assault, wife beating, narcotics possession
Jones and Kaplan (2003)	53	USA, not specified	Answering a 9-points single rating scale of the association of each crime (3) with Whites or with Blacks	Grand-theft auto	Embezzlement	Vehicular manslaughter	-
Boetcher (2009)	144	University of Nevada, Las Vegas	Defining the probability (0%–100%) that a Black/White target would commit each crime of a list (20)	Vehicle theft, robbery, failure to pay child support, assault and battery	-	-	-
Osborne and Davies (2012)	33	New Zealand & Canada	Rating on a 7-point Likert scale to evaluate likely race of the perpetrator (and seriousness and violence) of a list of crimes (47)	Drive-by shooting, gang-related beating, pimp, carjacking, cop killer, street gambling	Internet hacking, insider trading, hate crime, identity theft, embezzlement, serial killer	-	-

Table 1 (continued)

Paper	Method		Results				
	<i>n</i>	Location	Measure	Stereotypically Black Crimes	Stereotypically White Crimes	Nonstereotypic Crimes of Whites or Blacks	Typical of Both Groups
Skorinko and Spellman (2013)	179	Massachusetts & Virginia	Indicating for each crime (55) which group was most likely to commit it in the perspective of society (they could indicate more than one group per crime or “anybody” or “nobody”)	Assault, auto theft, burglary, crack cocaine, gang activity, intentional murder, mugging, rape, robbery	Arson, child molestation, credit fraud, DUI, ecstasy, embezzlement, hate crimes, insurance fraud, plagiarism, prescription drug abuse/fraud, public nudity, research fraud, stalking	Hit and run, perjury, slander, speeding, adultery, blackmail, curfew violation, gambling, identity fraud, joyriding, kidnapping, marijuana, public intoxication, trespassing, vehicular manslaughter	Child abuse, heroin, kidnapping, sex abuse, truancy

differentiate those offenses that are highly stereotypical of both Whites and Blacks from those that are highly stereotypical of only one group and from those that are not highly stereotypical of any group.

We have also made a theoretically driven methodological choice to the way we ask participants to judge stereotypicality. When participants are rating crimes on racial aspects certain norms can bias the results, for instance social desirability and anti-prejudice norm. As studies have shown, people tend to freely express prejudice against Blacks (Camino et al., 2001) and immigrants (Chateignier et al., 2009) when they respond on the behalf of society (cultural prejudice) but not when they respond for themselves (individual prejudice), as individuals feel free to express prejudiced judgments as long as they ascribe it to the culture and not to themselves. Following this body of research, we adopted the strategy of asking participants to make personal judgments about crime severity and cultural judgments about crime stereotypicality, to reduce social desirability biases regarding the suppression of prejudice (e.g., Cox & Devine, 2015; Devine, 1989; Devine & Elliot, 1995).

Furthermore, it can give up-to-date information on the relationship between group stereotypicality and crimes’ severity. Summing up, this study offers recent normative ratings of several crimes framed within the Portuguese context following a comprehensive approach.

Method

Participants

A total of 340 adult Portuguese participants (72.6% female) aged between 18 and 67 years old ($M_{age} = 26.86$, $SD = 7.65$) completed the online survey. The majority of our sample (80%) attained a higher education degree (bachelor’s, master’s, or doctorate degree), 19.1% had completed secondary education/high school, and a residual percentage (0.9%) completed primary education/middle school. Subject race was not measured.

Procedure

The study was distributed online through social media and e-mail, using convenience sampling. At first, participants were welcomed and introduced to the study and asked for their informed consent. Each participant was randomly assigned to evaluate ten out of 63 crimes, resulting in each crime being evaluated by 46 to 60 participants ($M = 53.95$, $SD = 2.72$).

Each crime had, alongside its name, a brief description taken from the Portuguese Penal/Criminal Code and additional laws (see files List of Crimes and Stimuli at osf.io/gkbrm).

Each crime was consecutively evaluated as to (1) White stereotypicality, measured with the question “To what extent do most Portuguese people see this crime as typical of White people?”, (2) Black stereotypicality, measured with the question “To what extent do most Portuguese people see this crime as typical of Black people?”, and (3) perceived severity of the crimes, measured with the question “How severe do you consider this crime?”. In all cases, participants answered using rating scales, ranging from 1 = “not at all” to 7 = “totally”.

At the end, they had the option of enrolling in a lottery of two vouchers of 25€ each.

Materials

The materials consisted of 63 crimes, including the name and a brief description of the crime taken from the Portuguese Penal Code and other specific laws (e.g., “Kidnapping: “by means of violence, threat or cunning, kidnap another person” [retrieved from Penal Code, article 161]”).

To select this set of crimes, we followed the procedure described below:

1. Reports-based approach: we consulted official sources (Cohen & Kyckelhahn, 2010; Kyckelhahn & Cohen, 2008; Elkin, 2019; Federal Bureau of Investigation, Uniform Crime Reporting Program, 2018; Ministério Público, 2018; Mustard, 2001; Oliveira & Gomes, 2014; Seabra & Santos, 2006; Sistema de Segurança Interna, 2018) to identify which crimes were most reported, overall and by group type.
2. Psychological literature-based approach: we included crimes which have been used in psychological research about the legal and criminal contexts (e.g., Abwender & Hough, 2001; Bodenhausen, 1988, 1990; Bodenhausen & Lichtenstein, 1987; Bodenhausen & Wyer, 1985; Boetcher, 2009; Eberhardt et al., 2006; Esqueda, 1997; Gordon et al., 1988; Gordon, 1990, 1993; Jones & Kaplan, 2003; Mazzella & Feingold, 1994; Osborne & Davies, 2012; Skorinko & Spellman, 2013; Sommers & Ellsworth, 2000; Sweeney & Haney, 1992).
3. Legal-based approach: we organized the crimes selected through the reports-based and psychological literature-based approaches according to the taxonomy of the Portuguese Penal Code. This includes 23 subcategories organized in six categories (see Table 2), namely crimes against people (21 crimes), crimes against property (ten crimes), crimes against cultural identity and personal integrity (one crime), crimes against life in society (ten crimes), crimes against the state (12 crimes), and crimes against companion animals (one crime). All categories but one were represented through the crimes selected in the previous phases. For the category of crimes against domestic animals, we made sure to add one, namely the

crime of abandonment of domestic animals. This way, we ensured that this database would be more inclusive and extensive than the previous ones and with a larger sample size. Furthermore, because some crimes gathered in the previous steps did not fit in the Portuguese Penal Code’s taxonomy, we mimic the legal procedure that adds specific laws and thus extended it in eight additional crimes.

4. Parsimony criterium – We suppressed some of the selected crimes due to their similarity and probable difficulty in being distinguishable by lay people (e.g., simple or severe or qualified or privileged offense to physical integrity). In these cases, the criteria were to include only the less severe crime (in this case: simple offense to physical integrity).

Results

In the following sections, we present (1) the preliminary analysis concerning data exclusion criteria; (2) the crime classification with cluster analysis; (3) the crime-rating norms for White stereotypicality, Black stereotypicality, and severity (including (a) the degree of association, (b) uniqueness, (c) non-uniqueness, and (d) sociodemographic differences); (4) the analysis by general categories; and (5) the relationship between the dimensions.

The data files are freely available as supplemental material at osf.io/gkbrm. Database A contains the full list of crimes and a column with the respective cluster. Database B includes the mean values (M), standard deviations (SD), and 95% confidence intervals (CI) for White stereotypicality (WS), Black stereotypicality (BS), and severity (Sev) of each of the 63 crimes (i.e., the rating norms for the 63 crimes across the three evaluative dimensions). Database C consists of the raw database before being restructured (i.e., participant-level data). Each crime was evaluated by 54 participants on average (min = 46, max = 60).

Preliminary analyses

Only one participant did not respond to the entire set of questions. This incomplete survey was excluded from further analyses ($N = 343$). Participants were also excluded based on nationality. The application of this demographic exclusion criteria resulted in the exclusion of two participants from another nationality and one participant who did not answer ($N = 340$). We also defined that data would be eliminated from further analyses based on the response time (RT), to eliminate participants who did not seem to have engaged with the study (too short RT). This method-based outlier criteria revealed 0% of outliers.

Additionally, the preliminary analyses of the data showed no indication of systematic responses (i.e., participants using

Table 2 Organization of the included crimes (63) in six categories and 23 subcategories

Crime category	Crime subcategory	Crime	No. of entries	
Crimes against people	Crimes against life	Homicide	13	
		Homicide at the request of the victim	2	
		Homicide by negligence	5	
	Crimes against physical integrity	Assault/Offense against the physical integrity	16	
		Offense against the physical integrity by neglect	2	
		Domestic violence	4	
		Crimes against personal liberty	Threat	2
	Crimes against sexual freedom	Coercion	1	
		Stalking	1	
		False imprisonment	6	
		Kidnapping	2	
		Hostage	1	
		Sexual coercion	5	
		Rape	12	
	Crimes against sexual self-determination	Promoting prostitution	4	
		Sexual harassment	2	
		Child molestation	6	
	Crimes against honor	Child pornography	3	
	Crimes against privacy	Injury	1	
		Breach of secrecy	1	
	Crimes against property	Crimes against property	Misappropriation of secrecy	1
			Theft	15
			Motor vehicle theft	9
Robbery			18	
Vandalism			4	
Crimes against the heritage in general		Fraud/swindle	14	
		Insurance fraud	1	
		Internet hacking	2	
		Extortion	2	
Crimes against the public or cooperative sector aggravated by the status of the perpetrator		Unlawful appropriation	13	
		Maladministration/ mismanagement	14	
Crimes against cultural identity and personal integrity		Crimes against cultural identity and personal integrity	Hate crimes	2
Crimes against life in society		Crimes against family	Breach of maintenance obligation	1
			Forgery of documents	Forgery/plagiarism
		Counterfeiting currency, credit note, and stamped value	Identity theft	1
	Counterfeiting of currency		2	
	Circulation of counterfeit banknotes and coins		1	
	Crimes of common danger	Buildings and property fire	6	
		Forest fire	1	
	Crimes against the security of communications	Driving under the influence	8	
		Crimes of dangerous anti-sociality	Drunkenness	2
	Crimes against public peace	Gang-related crimes	4	

Table 2 (continued)

Crime category	Crime subcategory	Crime	No. of entries	
Crimes against the state	Crimes against the rule of law	Influence peddling	1	
		Resistance, disobedience and false declarations to public authority	1	
	Crimes against the execution of justice	Disobedience	3	
		Bribery	1	
		Money laundering	3	
	Corruption	Denial of justice and prevarication	1	
		Receiving an improper advantage	7	
		Passive corruption	7	
	Embezzlement	Active corruption	7	
		Embezzlement	14	
	Crimes against companion animals	Crimes against companion animals	Beneficial ownership in business	1
			Abuse of authority	1
	Specific laws	Crimes against companion animals	Abandonment of domestic animals	0
			Drug trafficking	13
Driving without a license			5	
Street gambling			3	
Illegally carrying and possessing weapons			5	
Tax evasion			5	
Aiding illegal immigration			1	
Illegally entering the country			2	
Welfare fraud			1	

Crime category = legal category according to the Portuguese Penal Code; Crime subcategory = specific category according to the Portuguese Penal Code; Crime = the set of 63 crimes/stimuli; No. of entries = number of times that each crime was referred during the selection phase (in official reports and psychological literature)

consistently the same value of the response scale across dimensions), and a small percentage of outliers (1.73%) based on the criterion of 2.5 standard deviations above or below the mean values of each stimulus in each dimension. Therefore, no responses were excluded from data analysis.

Crime typology: Grouping crimes with cluster analysis

We start by presenting the results of the cluster analysis performed with the data aggregated by crime. The aim of this analysis is to group the 63 crimes on the basis of its White stereotypicality, Black stereotypicality, and severity. The results that emerged from this analysis revealed a three-cluster classification as the best solution for the data considered in the current study according to AIC and BIC changes (see Table 3). The silhouette measure of cohesion and separation showed a fair to good cluster quality.

According to Fig. 1, the first cluster ($n = 23$, 36.5%) includes the crimes that are high in White stereotypicality, low in Black stereotypicality, and around the mean in severity.

The second cluster ($n = 22$, 34.9%) exhibits the opposite pattern, containing the crimes that are higher in Black stereotypicality than in White stereotypicality while being similar in terms of severity. Finally, the last cluster ($n = 18$, 28.6%) represents those crimes that are extremely severe and near the mean for Black and White stereotypicality.

In Fig. 2, we present the representation in 3D of this crime typology. In White, there is the cluster that stands out for its higher severity (that includes the most severe crimes, such as murder, rape, child molestation, child pornography, sexual coercion, sexual harassment, promoting prostitution, domestic violence, kidnapping, hostage, the two types of arson—forest fire and buildings and property fire); in Black, the cluster that primes for being high in White stereotypicality and low in Black stereotypicality (that includes crimes such as money laundering, fraud, Internet hacking, insurance fraud, passive and active corruption, tax evasion, welfare fraud, embezzlement, bribery, forgery, counterfeiting, beneficial ownership in business, abuse of authority); and in grey, the cluster that comprises those crimes that are higher in Black stereotypicality than in White stereotypicality (such as theft, robbery,

Table 3 Results of two-step cluster analysis: Schwarz's Bayesian information criterion (BIC), BIC change, Akaike's information criterion (AIC), and AIC change for different clusters' solutions

Number of clusters	BIC	BIC change ^a	AIC	AIC change ^b
1	154.36		141.50	
2	141.16	– 13.20	115.44	– 26.06
3	140.36	– 0.80	101.78	– 13.66
4	155.48	15.13	104.05	2.27
5	172.96	17.48	108.67	4.62
6	192.19	19.23	115.04	6.37
7	211.47	19.28	121.46	6.42
8	231.18	19.71	128.31	6.85
9	251.89	20.71	136.16	7.85
10	273.20	21.31	144.61	8.45
11	295.21	22.01	153.76	9.15
12	317.51	22.30	163.21	9.44
13	339.99	22.48	172.83	9.62
14	363.18	23.18	183.15	10.33
15	386.83	23.65	193.94	10.79

The table shows the change in information criterion between different clusters' solutions

^a The changes are from the previous number of clusters in the table for BIC

^b The changes are from the previous number of clusters in the table for AIC

assault, vehicle theft, vandalism, threat, coercion, drug trafficking, gang activity, aiding illegal immigration, illegally entering the country, assault on police, disobedience, street gambling, illegally carrying and possessing weapons).¹

This analysis gives us a global understanding of the structuring of the 63 crimes according to their conjoint configuration in the three evaluative dimensions. In the next section, we turn to the analysis of these variables individually (i.e., the subjective rating norms) by exploring the degree of association between each crime and each dimension separately and also the existence of unique and non-unique crimes.

Crime-rating norms

Degree of association

We computed means, standard deviations, confidence intervals at 95%, and frequencies (number of ratings) for each crime on each dimension. The CrISSD dataset of norms is provided as supplemental material (see Database B). Based on the results, crimes were categorized as low, moderate, or

¹ For a more detailed look, consult the “Database A – Clusters” in OSF repository and see column “Cluster number”.

high in each dimension (for an identical procedure, see Prada et al., 2016; Rodrigues et al., 2018). When the CI included the response scale's midpoint (i.e., 4.00) crimes were categorized as “moderate” in a given dimension; when the upper bound of the CI was below the scale's midpoint crimes were considered to be “low”; and when the lower bound of the CI was above the scale's midpoint crimes were considered “high”.²

Figure 3 presents the frequency distributions observed for each level (low, moderate, and high) on each of the three dimensions. Examples of crimes for each grouping are presented in the text below.

It was possible to verify the existence of an asymmetry between the 63 crimes regarding White stereotypicality (58 high, four moderate, one low) and crime severity (61 high, two moderate, 0 low). The variability of the ratings for Black stereotypicality was higher (23 high, 33 moderate, seven low). Most crimes were rated as highly severe (96.83%; e.g., homicide, rape, child molestation), highly stereotypical of White (92.06%; e.g., Internet hacking, money laundering, bribery), and moderately stereotypical of Black (52.38%; e.g., driving under the influence, sexual harassment, aiding illegal immigration) or highly stereotypical of Black (36.51%; e.g., theft, illegally carrying and possessing weapons, vandalism). A smaller percentage was considered as moderate on severity (3.17%; illegally entering the country and street gambling) or as lowly severe (0%), as moderate on White stereotypicality (6.35%; e.g., aiding illegal immigration, disobedience, illegally carrying and possessing weapons) or as lowly stereotypical of White (1.59%; illegally entering the country) and as lowly stereotypical of Black (11.11%; e.g., passive corruption, active corruption, forest fire).³

Table 4 shows the intersection between levels of the dimensions. It shows, once again, the very small number of crimes classified as low in each dimension (1 in WS; 7 in BS; 0 in Sev). Moreover, it shows that none of the crimes were categorized as low in two dimensions simultaneously (i.e., low in both severity and White stereotypicality, severity and Black stereotypicality, or White and Black stereotypicality). Concerning the stereotypicality dimensions, there is only an intersection of seven crimes that were classified as low in BS and high in WS at the same time, and just one that was classified with the reverse pattern (as simultaneously low in WS and high in BS).

To fully capture whether a crime is stereotypical of a particular group, we can look at the association between

² Nevertheless, if the CI reaches or slightly overlaps the scale midpoint, the *p* value can still be significant, making it important to test for significance (Tan & Tan, 2010). Database B (available at osf.io/gkbrm) also contains the *t* test against the scale midpoint and respective *p* values.

³ For more details consult Database B at OSF and sort by the dimension of interest.



Fig. 1 Clusters' comparisons in the three evaluative dimensions. *Note.* This figure presents the comparisons between the three crime clusters in each dimension (Black stereotypicality, White stereotypicality, and severity)

separately, according to the clusters' distribution in each variable. Cluster 1 = "White stereotyped crimes", Cluster 2 = "Black stereotyped crimes", Cluster 3 = "High severity crimes"

that crime and a given group, but we should also look at the intergroup differences to find the extent to which this association differs by group (Skorinko & Spellman, 2013).

Uniqueness: Stereotypical crimes

Although the former analysis shows how strongly crimes are associated with each racial group, they do not provide an intergroup comparison. Following the between-groups approach adopted by Skorinko and Spellman (2013), we looked at crimes' uniqueness (i.e., the difference in the race-crime associations from one group to another). To know if the White and Black stereotypicality of a given crime differ significantly, 95% CI for the difference between these two dimensions were computed in order to check whether the difference includes the value 0 or not (see Table 5).⁴

⁴ When comparing the CIs of White stereotypicality and Black stereotypicality of a given crime, if the upper limit of the 95% CI of one measure does not reach the lower limit of the 95% CI of the other measure one can infer that there is a statistically significant difference between those two measures. However, it is important to keep in mind that when the upper limit of the 95% CI of one measure slightly overlaps the lower limit of the 95% CI of the other measure, the p value may still be less than .05 and, thereby, one cannot infer that there is no statistically significant difference between the two measures (Tan & Tan, 2010). This way, CIs allow us to identify which crimes certainly exhibit significant differences between dimensions (when their CIs do not touch), but do not allow us to identify which crimes do not exhibit significant differences between dimensions (when their CIs just touch or slightly overlap). To reach that conclusion, one must compute the 95% CI for the difference between White and Black stereotypicality for each crime (see Table 5). If that CI contains the value 0 it means that the p value will be greater than 0.05. In opposition, if the 95% CI does not contain the value 0, then the p value will be strictly less than 0.05.

Looking between groups, this analysis reveals a total of nine crimes that are unique to Black people. The crime of illegally entering the country exhibits the biggest BS-WS difference. Additionally, this analysis shows that crimes such as motor vehicle theft, illegally carrying and possessing weapons, disobedience, vandalism, theft, robbery, assault/offense to the physical integrity, and murder are actually significantly higher in Black stereotypicality (compared to White stereotypicality). Looking at the opposite pattern, Whites were more associated than Blacks with corruption, bribery, arson, Internet hacking, unlawful appropriation, influence peddling, money laundering, beneficial ownership in business, maladministration, embezzlement, tax evasion, fraud/swindle, credit fraud, insurance fraud, welfare fraud, forgery/plagiarism, child pornography, child molestation, hate crimes, DUI, street gambling, drunkenness, promoting prostitution, offense against the physical integrity by neglect and kidnapping.

For the visual representation of this, Fig. 4 presents the distribution of crimes in terms of White and Black stereotypicality. As demonstrated in Fig. 4, the mean scores for each crime are distributed along two axes expanding from the midpoint in White and Black stereotypicality toward the endpoints of the scales, allowing researchers to look for crimes that are stereotypical of both Black and White people, but also for crimes that are stereotypical of only Blacks or Whites.

Non-uniqueness: Equally stereotypical crimes

As could be seen in Table 4, there are no non-stereotyped crimes (i.e., 0 crimes categorized as low in both stereotypicality dimensions) and there is only one crime

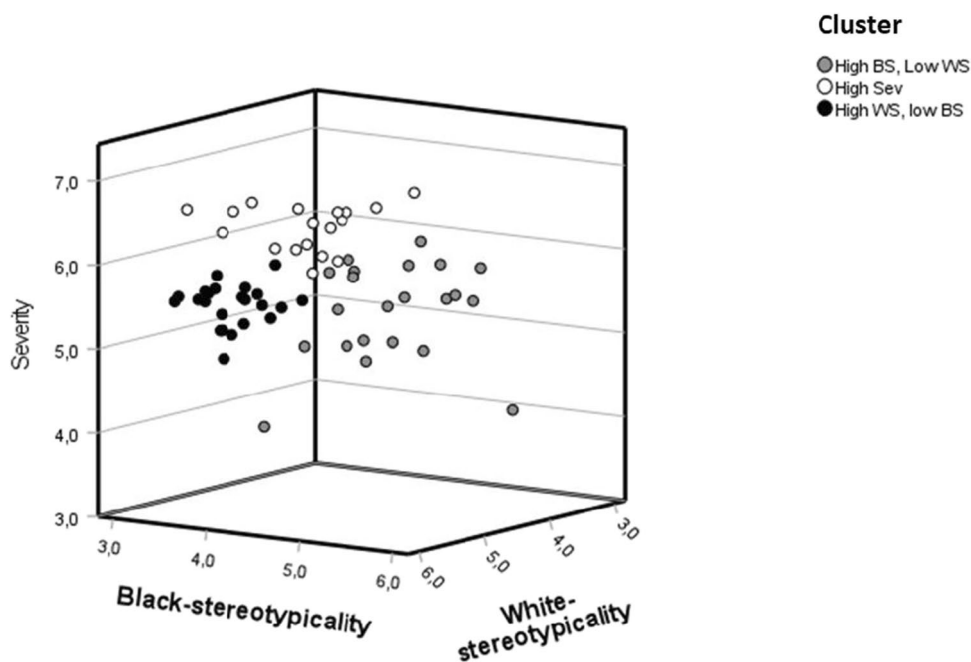


Fig. 2 Representation in 3D of the three crime clusters. *Note.* This figure presents the distribution of the crime clusters in 3D according to their conjoint levels in the three dimensions (Black stereotypicality, White stereotypicality, and severity) simultaneously

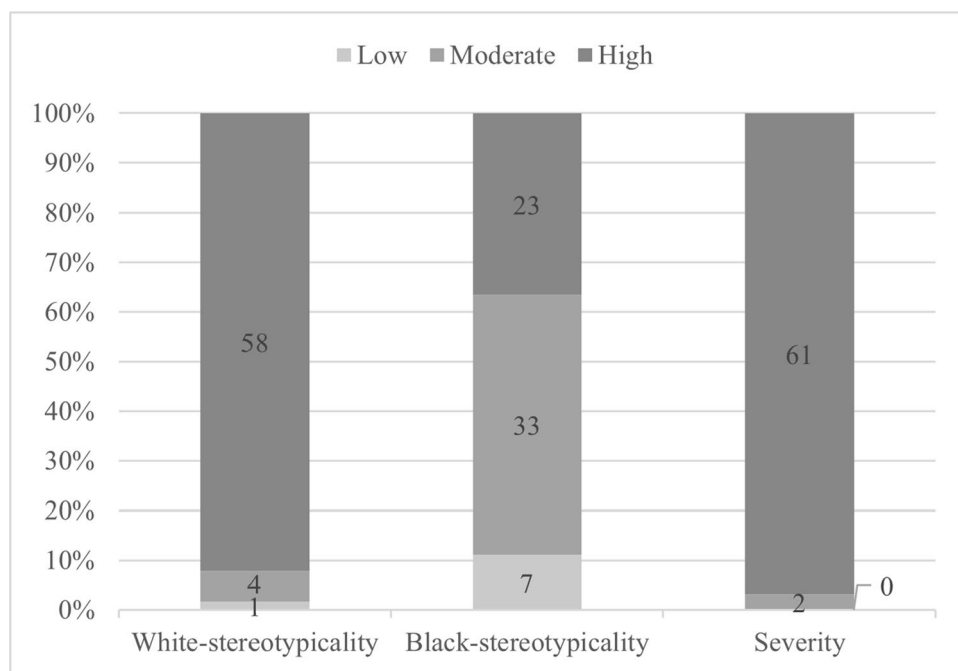


Fig. 3 Distribution of crimes across levels (low, moderate, and high) in each dimension. *Note.* This figure presents the frequency distribution of crimes with low, moderate, and high ratings in each evaluative dimension

classified as moderate in WS and BS (i.e., aiding illegal immigration). Nevertheless, this between-groups approach revealed the existence of crimes that, regardless of being high or moderate, proved to be equally typical of

both groups, such as rape, coercion, sexual coercion, drug trafficking, threat, assault on police, homicide by neglect, driving without a license, stalking, injury, identity theft, and gang-related crimes.

Table 4 Intersections between levels (low, moderate, high) of the three dimensions

	Black stereotypicality			Severity			Total
	L	M	H	L	M	H	
White stereotypicality							
Low	0	0	1	0	1	0	1
Moderate	0	1	3	0	0	4	4
High	7	32	19	0	1	57	58
Black stereotypicality							
Low	-	-	-	0	0	7	7
Moderate	-	-	-	0	1	32	33
High	-	-	-	0	1	22	23
Total				0	2	61	63

N = 63 crimes. Levels across dimensions: L = low, M = moderate, H = high

Differences in overall evaluations: Sociodemographic characteristics

Table 6 presents the participants' mean ratings across dimensions, for the full sample and by participants' sex. Results showed that participants (i.e., full sample) evaluated the crimes above the scale midpoint in all three evaluative dimensions, all p values ≤ 0.001 .⁵ To test for sex differences in participants' evaluations of crimes, the mean evaluations on each dimension were compared between men and women. Sex differences were found for Black stereotypicality and severity. As shown in Table 6, women assessed the crimes as more typical of Black people and as more severe than men.

Furthermore, we analyzed if crime ratings differed according to other sociodemographic characteristics. Results showed that age only correlated with severity ($r = 0.17$, $p = 0.002$), meaning that the older the participant the more severe the crimes were perceived to be. Finally, crime ratings did not differ much depending on participants' educational level. The only exception was for ratings of White stereotypicality ($r = 0.13$, $p = 0.02$), showing that the higher the participants' educational level the more they considered the crimes as typical of Whites, but not of Blacks or as more severe.

Comparisons between general crime categories

Complementarily, crimes were analyzed according to legal and conceptual differentiations. For the legal one, crimes were organized and combined according to the six general categories of the Penal Code, namely crimes

against people (e.g., homicide, assault, rape, sexual coercion, domestic violence, threat, kidnapping, child molestation, child pornography, injury), crimes against property (e.g., theft, motor vehicle theft, robbery, vandalism, fraud/swindle, Internet hacking, extortion), crimes against cultural identity and personal integrity (hate crime), crimes against life in society (e.g., forgery, credit fraud, arson, DUI, drunkenness), crimes against the state (e.g., influence peddling, assault on police, disobedience, bribery, money laundering, corruption, embezzlement), and crimes against companion animals (abandonment of domestic animals). For the conceptual differentiation, we combined the crimes in white-collar crimes (embezzlement, bribery, counterfeiting/forgery, swindle/fraud, credit fraud, money laundering, tax evasion), violent or personal crimes (homicide, negligent homicide, assault, robbery, assault on police, rape, child molestation, wife beating), and property crimes (arson, auto theft, theft, burglary, vandalism, welfare fraud) (Esqueda, 1997; Rosenmerkel, 2001; Sinden, 1980).

Descriptive statistics are presented in Tables 7 and 8. We highlight the fact that White stereotypicality presents higher mean values for the legal categories of crimes against cultural identity and crimes against the state and the conceptual category of white-collar crimes. On the other hand, Black stereotypicality exhibits higher mean values for crimes against people and violent/personal crimes, which are two legal and conceptual categories that share several crimes. With regard to severity perceptions, we stress the high mean value of the crimes against people general category and its difference from the rates in other categories, such as crimes against property, crimes against life in society, and crimes against the state. Additionally, the conceptual classification revealed differences between the rates for violent/personal crimes and both white-collar and property crimes.

⁵ We compared crime ratings against the scale midpoint (i.e., 4.00) in the three dimensions.

Table 5 Difference between White and Black stereotypicality, 95% CI for the difference, and respective direction when statistically significant, for each crime

Crime	n	White stereotypicality		Black stereotypicality		Difference	LL	UL	Direction
		M	Level	M	Level				
Homicide	50	4.920	H	5.360	H	-0.440	-0.799	-0.081	BS > WS
Homicide at the request of the victim	52	4.481	H	4.346	M	0.135	-0.313	0.583	-
Homicide by negligence	56	4.750	H	4.339	M	0.411	-0.007	0.828	-
Assault/Offense against the physical integrity	53	4.604	H	5.208	H	-0.604	-1.070	-0.138	BS > WS
Offense against the physical integrity by neglect	57	5.281	H	4.789	H	0.491	0.037	0.946	WS > BS
Domestic violence	57	5.211	H	4.316	M	0.895	0.461	1.328	WS > BS
Threat	56	4.911	H	5.250	H	-0.339	-0.716	0.037	-
Coercion	53	4.717	H	4.302	M	0.415	-0.061	0.891	-
Stalking	58	4.828	H	4.655	H	0.172	-0.203	0.548	-
False imprisonment	56	5.018	H	4.339	M	0.679	0.245	1.112	WS > BS
Kidnapping	53	5.208	H	4.736	H	0.472	0.011	0.932	WS > BS
Hostage	56	4.929	H	4.589	H	0.339	-0.057	0.736	-
Sexual coercion	56	4.911	H	4.625	H	0.286	-0.019	0.591	-
Rape	53	5.415	H	5.302	H	0.113	-0.227	0.454	-
Promoting prostitution	56	5.107	H	4.500	H	0.607	0.216	0.998	WS > BS
Sexual harassment	57	5.228	H	4.421	M	0.807	0.369	1.245	WS > BS
Child molestation	57	5.491	H	4.018	M	1.474	0.998	1.950	WS > BS
Child pornography	53	5.698	H	3.962	M	1.736	1.240	2.232	WS > BS
Injury	58	5.017	H	4.914	H	0.103	-0.302	0.509	-
Breach of secrecy	57	5.070	H	3.421	L	1.649	1.134	2.164	WS > BS

Table 5 (continued)

Crime	<i>n</i>	White stereotypicality		Black stereotypicality		Difference	LL	UL	Direction
		<i>M</i>	Level	<i>M</i>	Level				
Misappropriation of secrecy	52	5.173	H	3.577	L	1.596	1.131	2.062	WS > BS
Theft	53	4.509	H	5.509	H	-1.000	-1.439	-0.561	BS > WS
Motor vehicle theft	52	3.962	M	5.327	H	-1.365	-1.865	-0.866	BS > WS
Robbery	54	4.537	H	5.370	H	-0.833	-1.273	-0.394	BS > WS
Vandalism	53	4.509	H	5.415	H	-0.906	-1.244	-0.567	BS > WS
Fraud/swindle	57	5.614	H	4.000	M	1.614	1.150	2.078	WS > BS
Insurance fraud	54	5.167	H	3.704	M	1.463	0.958	1.968	WS > BS
Internet hacking	54	6.000	H	3.796	M	2.204	1.647	2.761	WS > BS
Extortion	54	4.963	H	4.296	M	0.667	0.164	1.170	WS > BS
Unlawful appropriation	46	5.630	H	3.609	M	2.022	1.332	2.712	WS > BS
Maladministration/ mismanagement	50	5.540	H	3.980	M	1.560	0.804	2.316	WS > BS
Hate crimes	52	5.385	H	4.192	M	1.192	0.571	1.814	WS > BS
Breach of maintenance obligation	47	4.723	H	4.043	M	0.681	0.157	1.204	WS > BS
Forgery/plagiarism	52	5.000	H	4.212	M	0.788	0.228	1.349	WS > BS
Identity theft	55	4.655	H	4.891	H	-0.236	-0.749	0.276	-
Counterfeiting of currency	54	5.370	H	3.593	M	1.778	1.262	2.294	WS > BS
Circulation of counterfeit banknotes and coins	54	5.204	H	3.926	M	1.278	0.768	1.787	WS > BS
Buildings and property fire	56	5.179	H	3.482	L	1.696	1.173	2.220	WS > BS
Forest fire	57	5.561	H	3.368	L	2.193	1.570	2.816	WS > BS
Driving under the influence	54	5.426	H	4.444	M	0.981	0.469	1.494	WS > BS
Drunkenness	52	5.385	H	4.962	H	0.423	0.040	0.806	WS > BS

Table 5 (continued)

Crime	n	White stereotypicality		Black stereotypicality		Difference	LL	UL	Direction
		M	Level	M	Level				
Gang-related crimes	55	4.673	H	5.127	H	-0.455	-0.922	0.013	-
Influence peddling	54	5.556	H	3.593	M	1.963	1.404	2.521	WS > BS
Assault on police	47	4.851	H	4.660	H	0.191	-0.481	0.864	-
Disobedience	55	4.345	M	5.055	H	-0.709	-1.124	-0.294	BS > WS
Bribery	54	5.630	H	3.611	L	2.019	1.477	2.561	WS > BS
Money laundering	53	5.736	H	3.811	M	1.925	1.288	2.561	WS > BS
Denial of justice and prevarication	50	5.500	H	3.700	M	1.800	1.240	2.360	WS > BS
Receiving an improper advantage	53	5.491	H	3.698	M	1.792	1.232	2.353	WS > BS
Passive corruption	57	5.526	H	3.211	L	2.316	1.762	2.870	WS > BS
Active corruption	54	5.722	H	3.389	L	2.333	1.755	2.912	WS > BS
Embezzlement	51	5.098	H	4.059	M	1.039	0.447	1.632	WS > BS
Beneficial ownership in business	56	5.625	H	3.714	M	1.911	1.462	2.360	WS > BS
Abuse of authority	53	5.245	H	3.774	M	1.472	0.849	2.094	WS > BS
Abandonment of domestic animals	52	5.192	H	4.058	M	1.135	0.677	1.593	WS > BS
Drug trafficking	56	5.143	H	5.286	H	-0.143	-0.604	0.318	-
Driving without a license	52	4.731	H	4.404	M	0.327	-0.140	0.794	-
Street gambling	51	4.941	H	3.765	M	1.176	0.694	1.659	WS > BS
Illegally carrying and possessing weapons	57	3.982	M	5.421	H	-1.439	-1.867	-1.010	BS > WS
Tax evasion	55	5.564	H	4.127	M	1.436	0.891	1.981	WS > BS

Table 5 (continued)

Crime	<i>n</i>	White stereotypicality		Black stereotypicality		Difference	LL	UL	Direction
		<i>M</i>	Level	<i>M</i>	Level				
Aiding illegal immigration	55	4.345	M	4.418	M	-0.073	-0.703	0.558	-
Illegally entering the country	60	3.417	L	5.367	H	-1.950	-2.506	-1.394	BS > WS
Welfare fraud	53	5.208	H	4.019	M	1.189	0.558	1.819	WS > BS

n = frequency of evaluations per crime. *M* = Mean. Level categorization: H = High; M = Moderate; L = Low. Difference = difference between White stereotypicality and Black stereotypicality. LL and UL represent the lower-limit and upper-limit of the 95% confidence interval around the difference, respectively. Direction = the direction of the difference when it is statistically significant

Stereotypicality dimensions predicting perceived crime severity

Using the participant-level database, we adopted a mixed-models approach and restructured the database from wide to long format, so that the structure reflected aggregated repeated measures across participants. Thus, level 1 units refer to the repeated measures, i.e., the White stereotypicality, Black stereotypicality, and perceived severity for the 63 crimes. The individuals and crimes represent the level 2 units. We further performed regression analysis with White stereotypicality and Black stereotypicality as predictors of perceived crime severity. Results show that both White stereotypicality ($\beta = 0.14$, $SE = 0.01$, $p < 0.001$) and Black stereotypicality ($\beta = 0.06$, $SE = 0.01$, $p < 0.001$) are significant predictors of severity, meaning that as the stereotypicality of the crimes increases, the perception of severity increases too.

Discussion

The construction of normative measures is of great importance for the progress of scientific research. The current study systematically and extensively compiled stimuli and provided up-to-date normative measures for a total of 63 crimes regarding their White stereotypicality, Black stereotypicality, and perceived severity. The CriSSD includes a vast set of crimes spanning different legal and conceptual categories, with normative data on three measures and using an adequately powered sample size. The selection of crimes followed a systematic, impartial selection procedure and was based on the Portuguese Penal Code's framework. To the best of our knowledge, this article presents the first normative dataset norming criminal behaviors in both stereotypicality and severity in the European context.

This normative study was based on the literature on crime-related racial stereotypes. Research has demonstrated that people tend to associate certain racial groups with particular crimes. However, some of the past findings are limited due to the chosen methodological paradigm (e.g., forced-choice, single-variable). For instance, a single variable can lead to a lack of disentanglement regarding the stereotypicality of an offense. If a crime is rated in the middle point of the scale, we do not know if it is perceived as not stereotypical of either group (Blacks and Whites), or as highly stereotypical of both. Here, we chose to measure the association to White and Black people separately, to better disentangle these race–crime pairings. In addition, this study adds to previous research by assessing not only crime stereotypes but also severity perceptions, whose impact on criminal-sentencing decisions has been previously documented (e.g., Gordon & Anderson, 1995; Gordon et al., 1988).

As we highlighted across the article, there are various approaches to analyzing the data in order to fully capture crime stereotypicality (and severity perceptions). The

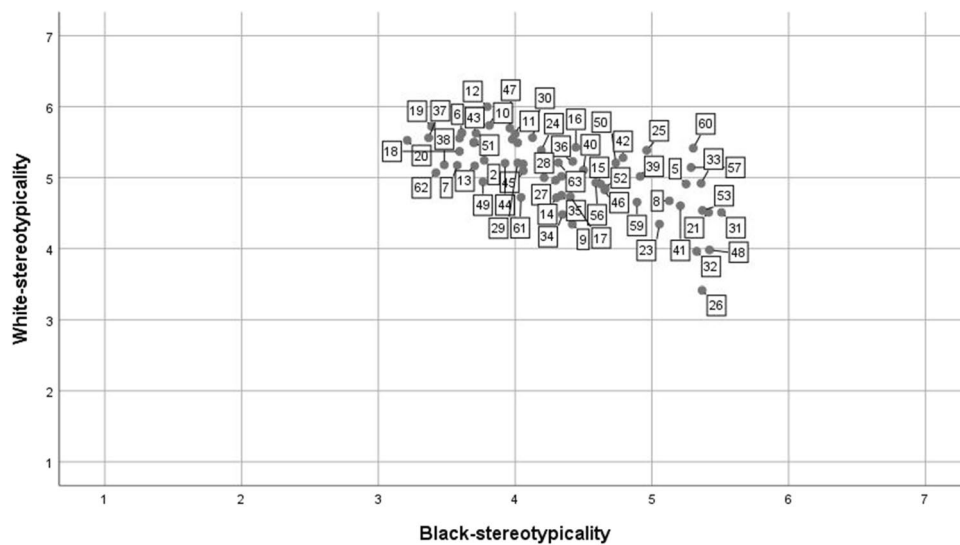


Fig. 4 Distribution of overall mean values for the 63 crimes in White stereotypicality and Black stereotypicality. *Note.* 1=Homicide; 2=Homicide at the request of the victim; 3=Homicide by negligence; 4=Assault/Offense against the physical integrity; 5=Offense against the physical integrity by neglect; 6=Domestic violence; 7=Threat; 8=Coercion; 9=Stalking; 10=False imprisonment; 11=Kidnapping; 12=Hostage; 13=Sexual coercion; 14=Rape; 15=Promoting prostitution; 16=Sexual harassment; 17=Child molestation; 18=Child pornography; 19=Injury; 20=Breach of secrecy; 21=Misappropriation of secrecy; 22=Theft; 23=Motor vehicle theft; 24=Robbery; 25=Vandalism; 26=Fraud/swindle; 27=Insurance fraud; 28=Internet hacking; 29=Extortion; 30=Unlawful appropriation; 31=Maladministration/ mismanagement; 32=Hate crimes; 33=Breach of maintenance obligation;

34=Forgery/plagiarism; 35=Identity theft; 36=Counterfeiting of currency; 37=Circulation of counterfeit banknotes and coins; 38=Buildings and property fire; 39=Forest fire; 40=Driving under the influence; 41=Drunkenness; 42=Gang-related crimes; 43=Influence peddling; 44=Assault on police; 45=Disobedience; 46=Bribery; 47=Money laundering; 48=Denial of justice and prevarication; 49=Receiving an improper advantage; 50=Passive corruption; 51=Active corruption; 52=Embezzlement; 53=Beneficial ownership in business; 54=Abuse of authority; 55=Abandonment of domestic animals; 56=Drug trafficking; 57=Driving without a license; 58=Street gambling; 59=Illegally carrying and possessing weapons; 60=Tax evasion; 61=Aiding illegal immigration; 62=Illegally entering the country; 63=Welfare fraud

Table 6 Evaluations (means and standard deviations) of the three dimensions for the full sample and for men and women separately, with mean difference test results for participants' sex

Dimensions	Full Sample (n = 340)		Women (n = 247)		Men (n = 92)		Difference test		
	M	SD	M	SD	M	SD	t	p	d
White stereotypicality	5.07*	1.03	5.14	0.93	4.90	1.27	1.68	.096	0.24
Black stereotypicality	4.34*	1.05	4.42	1.00	4.14	1.17	2.20	.029	0.27
Severity	5.76*	0.80	5.82	0.74	5.59	0.95	2.15	.034	0.29

* Significantly different from the scale midpoint (i.e., 4), all p values < .001

combination of all analyses gives us an integrated knowledge of the crimes' characteristics. Cluster analysis provides an understanding of the crimes' categorization as a function of their behavior in the three-dimensional variables. Subjective rating norms allow for a deeper look at the data, looking at (1) the degree of association between crimes and racial groups (or the severity dimension) and (2) the exploration of unique White/Black crimes. A final approach permits the analysis of differences by general crime types (both legal and theory-driven categories). The optimal approach is to combine these different bottom-up and top-down analytical

strategies by looking first at the total configuration (i.e., clusters) and then at each dimension separately (i.e., crime norms).

Cluster analyses aim to organize objects in different groups in a way that objects within the same group are as similar as possible and that the distinct clusters are as different as possible in their structure (Kassambara, 2017). As such, cluster analyses aggregate objects (and not variables) based on distances taking into account the overall configuration according to the three variables (i.e., White stereotypicality, Black stereotypicality, and crime severity),

Table 7 Descriptive data for the legal categorization of crimes

Crime category	Against people		Against property		Against cultural ident		Against life in society		Against the state		Against companies, animals	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
White stereotypicality	5,046	0,296	5,167	0,533	5,385	1,549	4,993	0,494	5,360	0,414	5,192	1,597
Black stereotypicality	4,522	0,524	4,361	0,762	4,192	1,657	4,345	0,718	3,856	0,519	4,058	1,662
Severity	6,175	0,634	5,645	0,216	6,231	0,899	5,694	0,566	5,551	0,279	5,981	1,260

The crime categories are crimes against people, crimes against property, crimes against cultural identity and personal integrity, crimes against life in society, crimes against the state, and crimes against companion animals. M=Mean values, SD=Standard deviations

Table 8 Descriptive data for the conceptual categorization of crimes

Crime category	White-collar		Violent/ personal		Against property	
	M	SD	M	SD	M	SD
White stereotypicality	5,402	0,275	4,972	0,361	4,673	0,525
Black stereotypicality	3,917	0,229	4,822	0,552	4,750	0,935
Severity	5,578	0,225	6,481	0,404	5,682	0,363

The crime categories are white-collar crimes, violent or personal crimes, and crimes against property. M=Mean values, SD=Standard deviations

therefore revealing occasionally slightly different results from an analysis that examines the individual distribution in each dimension separately (i.e., subjective rating norms for each *individual* crime in each *individual* dimension).⁶ It is important to grasp which crimes reveal a consistent profile in order to rigorously select material for future experimental studies.

The cluster analysis allowed us to identify three clusters of crimes that seem to have substantial agreement with previous literature regarding White stereotyped crimes, such as fraud, Internet fraud, insurance fraud, tax evasion, embezzlement, bribery, forgery and counterfeiting, and Black stereotyped crimes, such as robbery, vehicle theft, gang activity, assault, and assault on police (Boetcher, 2009; Esqueda, 1997; Gordon et al., 1996; Jones & Kaplan, 2003; Osborne & Davies, 2012; Skorinko & Spellman, 2013; Sunnafrank & Fontes, 1983). The third cluster stands out for its higher severity levels compared to the other two, suggesting that high severity crimes are rather disconnected from stereotypicality.

Data further showed a significant agreement with the crime-rating norms. We not only found consensus between the cluster analysis and the between-group comparisons for the previously mentioned crimes, but also for new ones. Hence, this database includes new crimes to the crime stereotypes' line of research. To our knowledge, crimes such as influence peddling, unlawful appropriation, maladministration/ mismanagement,

money laundering, beneficial ownership in business, three types of corruption,⁷ two specific types of credit fraud,⁸ abuse of authority, and abandonment of domestic animals were not assessed in previous research and seem to be stereotypical of Whites. The data further allowed us to discover new Black stereotyped crimes, such as vandalism, disobedience, and illegally carrying and possessing weapons, amongst other crimes that were studied for the first time in this study.

Nevertheless, some contrasting results were found. The crime of illegally entering the country, for example, was portrayed in the literature as stereotypical of Hispanics (Boetcher, 2009), while in the context of this database it is perceived as a stereotypically Black crime. Although that result is not that surprising considering the fact that Hispanics do not constitute a prevalent immigrant group in European countries, while Black people do. Also, theft has been pointed out as being a non-stereotypical crime of Whites or Blacks in the USA context (Gordon et al., 1996), but is consistently seen as stereotypical of Black people across both analyses in this study. The opposite also happened. For instance, previous evidence concerning gang-related crimes (Osborne & Davies, 2012; Skorinko & Spellman, 2013) and assault on police (Esqueda, 1997; Sunnafrank & Fontes, 1983) described these crimes as Black stereotyped ones, while in the Portuguese context no significant between-group differences were found. In addition, welfare fraud revealed to be a

⁶ Caution when using drunkenness and street gambling as material in experimental studies, as they revealed inconsistencies.

⁷ Receiving an improper advantage, passive corruption, and active corruption.

⁸ Counterfeiting of currency and circulation of counterfeit banknotes and coins.

White stereotyped crime, while literature coming from the USA referred to this crime as being typical of Hispanics (Boetcher, 2009). Another example was the case of stalking. Past research described it as being typical of Whites (Skorinko & Spellman, 2013), while in this study the between-groups comparison revealed no differences, showing it to be equally high for Black and White people. The same happens for the crime of identity theft (e.g., Osborne & Davies, 2012). Finally, data portrayed the crime of promoting prostitution as a White stereotyped crime, going in line with results from Esqueda (1997), but not of others (Osborne & Davies, 2012; Sunnafrank & Fontes, 1983).

Overall, we found several divergences from previous research, suggesting that geographical and cultural differences between US and Europe may be a factor that influences crime stereotypes. For example, aside from differentiated nationality compositions, it is plausible that cultural characteristics (e.g., crime rates, ethical concepts of right and wrong, understanding of facts or evidence-based proof, religious beliefs) may influence crime perceptions. In fact, studies have shown the existence of differences in crime rates between the United States and European countries (e.g., both property and violent crimes are more widespread in Europe than in the United States; Buonanno et al., 2011, 2018). Additional broader differences between United States and Portugal lie on the marked discrepancies in the endorsement of several cultural values (e.g., Basabe & Ros, 2005; Schwartz, 2006, 2008; Yeganeh & May, 2011). Cross-cultural research has found that Portuguese people, like the people on other European countries (see results from European Values Study, 2022), tend to be highly committed to egalitarianism like social justice and equality, even more than people from other countries outside Europe, such as the U.S. Additionally, Americans hold stronger individualistic values, in that they tend to prioritize the individual self, achievements, and personal independence, while the Portuguese usually hold more collectivistic values, such as being more likely to maintain social harmony (again, in line with other European countries, with some notable exceptions).

One explanation for differences found in our ratings may lie in the fact that race and ethnicity stereotypes vary across cultures. As Fiske (2017) illustrated, there is much cultural variability of race/ethnicity stereotypes, in contrast to the shared gender and age stereotypes across cultures. This author emphasized the cultural-context-driven nature of race/ethnicity encoding, arguing that racial and ethnic relations are inevitably shaped by cultural and historical contexts. Although we did not measure stereotype contents such as warmth and competence, we measured race stereotypes associated with crimes that can also be culture-specific. The different findings in Portugal and the United States may also in part arise from the different immigration histories (Outten et al., 2018), which translate into the distinct intergroup relations between Whites and Blacks in these countries in terms of dynamics and longevity (Dovidio et al., 2010). For instance, whereas Black–White relations

have been a part of the United States history for centuries, much of the expressive presence of Black people in Portugal is the result of relatively more recent immigration flows of African people after the 1974 Portuguese revolution and the resultant decolonization process (Gaertner et al., 2008; Guerra et al., 2010; Outten et al., 2018). White Americans represent approximately 62% of the U.S. population and are projected to decrease to 44% by the year 2060 (Colby & Ortman, 2015). Unlike the U.S., the Portuguese government does not breakdown population statistics by race, but rather countries of origin. In 1980, ethnic Portuguese people accounted for 99.5% of the total population of the country. Today, according to the report of the Portuguese Immigration and Borders Service [SEF], the percentage of foreign citizens residing in Portugal is of roughly 6,75%. From these, just 15.4% are originally from African countries (SEF, 2022). By 2060 ethnic Portuguese people are expected to make-up 70% of the population (European Commission, 2011) becoming a more diverse society but still a numerical majority. Thus, these statistics and our conflicting findings suggest the importance of recognizing the cultural backgrounds and the historical relations between different racial groups for understanding crime stereotypes.

The fact that this study was conducted with a Portuguese-only sample imposes certain limitations, as it is not representative of all the European nations and does not allow for generalizations. Furthermore, the participants' race was not measured. However, in Portugal, the link between race and nationality is so direct that nationality is often used as a proxy for race, in the sense that being Portuguese carries an overwhelming odd of someone meaning a White/Caucasian person (with natural exceptions). To be clear, even though this variable has not been measured, considering that we only included Portuguese citizens as participants, there is no doubt that we are *grosso modo* referring to a sample of White participants. Additionally, given the strong colonial past common to many European countries, we believe that many of the European Union states share views regarding crime stereotypes and severity. For instance, previous research found a great deal of agreement from subgroup to subgroup (i.e., Blacks and Whites, males and females, high and low socioeconomic levels, and among levels of educational attainment) concerning crime severity ratings, and also between individuals and the total sample of the studies (e.g., Rossi et al., 1974). Still, one should be cautious of the historical and cultural influence on crime perceptions when making assumptions, as this study can only give us clues and can only allow us to speculate about the European context more generally. Future normative studies should be conducted in other European countries.

Concerning the severity perceptions, the crime of murder was perceived as the most serious crime, as would be expected, along with rape, child molestation, kidnapping, child pornography, domestic violence, and sexual coercion. In line with previous research, results indicated that perceived severity was higher for crimes against people (i.e., violent crimes which

cause bodily harm) than for property crimes (Evans & Scott, 1984; Herzog, 2003; Rossi & Henry, 1980; Rossi et al., 1974; Sellin & Wolfgang, 1964; Stylianou, 2003; Warr, 1989; Wolfgang et al., 1985). Results also go in line with evidence showing that violent or personal crimes are perceived as more serious than white-collar crimes. However, white-collar crimes were not rated as more severe than property crimes. When looking at the racial variables, it seems that certain crime types might be racialized, in the sense that some groups are more strongly associated with specific categories. White stereotypicality dimension, for example, presented a higher mean value for the category of white-collar crimes, whereas Black stereotypicality appeared to be more associated with violent or personal crimes, which in a certain way validates this database.

Furthermore, there are some crimes that have displayed mixed results across the literature and with the cluster analysis we showed that they fit in the third cluster (i.e., murder, rape, and promoting prostitution). This suggests that their most relevant variable is indeed their perceived severity and that these crimes are rather disconnected from stereotypicality. Actually, the relationship between stereotypicality and severity could be better represented by a sigmoid function in the positive domain, meaning that crimes with lower and middle values of severity are significantly and positively related to stereotypicality, but not crimes with high levels of severity. We call attention to the fact that these high severity crimes should probably not be chosen as material for future research on stereotypicality. The relationship between stereotypicality and severity holds for crimes with lower and middle values of severity, which means that independently of the racial group as the stereotypicality of the crimes increases so does the perceptions of severity. In a way, this shows that the racial groups are secondary and that stereotypicality is a cognitive process that impacts legal reasoning regardless of the target. This can be related to the fact that people process more extensively the evidence that is consistent with the stereotype than the evidence that is inconsistent, as has been shown by Bodenhausen (1988). In fact, this result goes in line with past research showing that crime stereotypes affect severity perceptions which, in turn, affect punishment recommendations (Gordon & Anderson, 1995), meaning that it replicates the first path of this mediation model between perceived crime typicality and punishment recommendations. Research also shows that crimes that are consistent with the stereotype are attributed to more stable factors and receive harsher punishment recommendations than non-stereotypic crimes (Bodenhausen & Wyer, 1985). Future studies should expand these crime-rating norms to accommodate the behavior attributions based on the theory of causal attribution (Kelley, 1973). Further studies should also expand these subjective norms for additional dimensions, such as gender stereotypes associated with crimes.

Results from our study showed that crimes were disproportionately White. We acknowledge that we are obviously referring to a system that is Eurocentric (see Nunn, 1997). The Portuguese legal system is inherently White-referenced, as laws/codes (as the Penal Code, for example) are made mostly by White males and people of power. This may be perpetuated in perceptions and lead to the invisibility of BIPOC people. However, it is important to note that it does not protect Black people from being over-represented in penal institutions, as we witness a concentration of the stereotyping effect in a few crimes.

Developing subjective normative ratings for crimes remains pressing, as there is a lack of available normative data from countries other than the USA. Studies that have previously provided crime normative measures have done so with an insufficient number of participants (translating in low statistical power) and/or for a small number of crimes (grouping crimes in more general offenses instead of specific ones), as well as have employed different procedures such as forced-choice methodological paradigms, making it difficult to compare cross-nationally. Hence, the CriSSD constitutes the first crime database in the European context, being the largest database to date with a proper sample size, in the domain of experimental social psychology. The subjective rating norms of crimes presented in CriSSD provide a valuable contribution for experimental research in several research domains (i.e., legal psychology, criminal justice, criminology, cognitive studies). It also facilitates the selection of crimes for future studies on the influence of extralegal factors (i.e., gender, sexual orientation, religion/faith, disability, social status) having race and crime severity experimentally controlled.

In sum, in the present study we provide up-to-date normative data on an extensive set of crimes, across a wide range of crime classification, with an appropriate sample size, in the Portuguese context, allowing for speculations about the European reality. This normative data is completely available and allows researchers to select crimes according to their objectives and questions, controlling for the specific dimensions of crime “Whiteness”, “Blackness” and severity. Therefore, we consider that the CriSSD offers an important contribution for researchers to precisely grasp the psychological factors, processes, and mechanisms underlying criminal-sentencing decisions and, in the long run, to help better understand the legal system.

Open practices statement

In accordance with an open-data policy, the research materials as well as the normative and raw data are freely available at the OSF repository (osf.io/gkbrm).

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