

Neuropsychology and the Criminal Responsibility of Psychopaths: Reconsidering the Evidence

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Abstract Recently it has been argued that certain neuropsychological findings on the decision-making, instrumental learning, and moral understanding in psychopathic offenders offer reasons to consider them not criminally responsible, due to certain epistemic and volitional impairments. We reply to this family of arguments, that collectively we call the *irresponsibility of the psychopath argument* (IPA for short). This type of argument has a premise that describes or prescribes the deficiencies that grant or should grant partial or complete criminal exculpation. The other premise contends that neuropsychological evidence shows that psychopaths have incapacitates that are sufficient to ascribe complete or partially exculpatory deficiencies. The focus of our criticism is this latter premise. We argue that it requires that psychopathy should correlate significantly with certain rational incapacities that manifest across contexts. We show that the available neuropsychological data do not support the claim that psychopaths have such general exculpatory incapacities.

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1 Introduction

Psychopathy is a personality disorder that has a serious legal and economic impact. This condition is characterized by specific emotional, interpersonal and lifestyle traits that, beside environmental factors, appear to have a genetic basis (Glenn and Raine 2014). Robert Hare's Psychopathy Checklist-Revised (PCL-R) is the widespread tool for diagnosing psychopathy, especially in the forensic settings (Hare 2003; for alternative measures of psychopathy, see Fowler and Lilienfeld 2013). Psychopaths as measured by the PCL-R are much more likely to enter in contact with the legal system and to violently recidivate. Kiehl and Hoffman (2011, p. 355) estimate that "approximately 93% of adult male psychopaths in the United States are in prison, jail, parole, or probation". In addition, psychopathy presents a social problem that is salient across cultures (Cooke 1998).

The social impact of psychopathy has raised legitimate concerns and debates on the proper legal response to psychopathic offenders (Felthouse and Saß 2008; Häkkänen-Nyholm and Nyholm 2012; Kiehl and Sinnott-Armstrong 2013; Malatesti and McMillan 2010). Moreover, these debates untangle implicit assumptions and promote views that are practically significant. In fact, how courts decide on the responsibility of psychopathic offenders seems to be influenced by implicit views on the culpability, purposes of punishment, the presence of neuropsychological abnormalities, and so on. For instance, Aspinwall et al. (2012) suggest that judges in the US, in assessing a hypothetical case of a psychopathic offender, tend to treat the introduction of neurobiological data and psychological explanations of the typical behavior of psychopathic offenders as mitigating factors.

In this paper, our aim is to investigate whether and how currently available neuropsychological evidence related to a classification of psychopathy should impact judgments concerning the accountability of psychopathic offenders. Some authors and the practice of many courts consider psychopathy not an exculpatory factor (see Maibom 2008; Pillsbury 2013) and, even, an aggravating one (Luna 2013; Nair and Weinstock 2008). In recent years, however, some have maintained that current neuropsychological evidence shows a significant correlation between psychopathy and impairments in epistemic and volitional capacities that are severe enough to diminish or totally undermine criminal responsibility (Focquaert et al. 2015; Glenn et al. 2011; Morse 2008; Sifferd and Hirstein 2013).

A central difficulty in these debates derives from several fundamental and, so far, unsettled interdisciplinary issues. We think that progress can be made by carefully delimiting the problems under investigation and explicating and assessing the relevant assumptions. Many of the arguments for the partial or total legal exculpation of psychopathic offenders share a general logical structure. We will call such a family of arguments the *irresponsibility of the psychopath argument* (from now on *IPA*). This line of reasoning involves two types of principal premises.

The first premise, that is formulated within the domain of legal practice or philosophy of law, might have a descriptive or normative form. This premise conceptualizes psychological deficiencies that warrant or, in the normative form, *should* warrant an exculpation for violent crimes. A normative instance of the

premise is well illustrated in this quote: “the criminal law should accommodate increasing psychological and neuroscientific evidence that emotional capacity is an important factor for translating factual knowledge about right and wrong into moral behavior” (Glenn et al. 2011). The second premise, on the other hand, *bridges* the preferred conceptualization of the psychological grounds for exculpation with the burgeoning scientific study of psychopathy. The claim is that there is compelling neuropsychological evidence that relates psychopathy with characteristic legally relevant incapacities. Thus, for instance, Glenn, Raine, and Laufer maintain that the neuropsychological evidence shows “that psychopathic individuals have deficits primarily in this [emotional] domain” (2011, p. 302).

In this paper, we do not engage with the first premise of the *IPA*. This would require addressing the difficult and fundamental problems of describing or prescribing the nature and extent of the psychological deficiencies required by different types of criminal exculpation. We, instead, will survey, by signaling the relevant differences, the dominant views concerning the cognitive and volitional deficiencies that are prominent in the formulations of the *IPA*.

The target of this paper is the second, *bridging*, premise in the *IPA*.¹ Independently from the specific nature of the exculpating deficiencies, we maintain that to support this premise the adduced neuropsychological evidence should satisfy at least two requirements. First, and trivially, the evidence should minimally testify probabilistically relevant correlations between satisfying the diagnosis of psychopathy and incapacities that imply the deficiencies required for exculpation. Second, the neuropsychological evidence should support the conclusion that psychopathy correlates significantly with incapacities that are general enough across contexts to render informative the diagnosis of psychopathy in judging whether, in relation to a specific criminal act, the subject suffered some exculpatory deficit.

We argue that the current neuropsychological data do not offer satisfactory evidence to support prominent versions of the *IPA*. We maintain that some neuropsychological evidence concerning the impaired moral understanding or self-control of psychopaths, that many authors assume to be relevant for ascriptions of criminal responsibility, has not been replicated. Thus, in this case, the first requirement above is not satisfied. In addition, we argue that further neuropsychological evidence might support the existence of context-dependent deficits that are not substantial enough to undermine moral understanding and voluntary control as required by the *IPA*. Thus, in this case, the second requirement stated above is not satisfied.

We proceed as follows. In the following section, we describe the diagnosis of psychopathy by means of PCL-R. Next, we survey some dominant views on epistemic and volitional psychological capacities that different legal systems deem necessary for criminal responsibility. In the same section, we explicate assumptions on how neuropsychological data can indicate impairments of these capacities. Then, we argue that neuropsychological evidence does not show that psychopaths lack the epistemic capacity for moral understanding as required by some influential versions

¹ For a general discussion of the problem of interfacing neurocognitive and legal constructs, see Buckholtz et al. (forthcoming).

Table 1 PCL-R items (Hare 2003)

Factor 1	Factor 2
<i>Facet 1 Interpersonal traits</i>	<i>Facet 3 Lifestyle traits</i>
1. Glibness/Superficial charm	3. Need for stimulation
2. Grandiose sense of self-worth	9. Parasitic lifestyle
4. Pathological lying	13. Lack of realistic, long-term goals
5. Conning/Manipulative	14. Impulsivity
	15. Irresponsibility
<i>Facet 2 Affective traits</i>	<i>Facet 4 Antisocial traits</i>
6. Lack of remorse or guilt	10. Poor behavioral controls
7. Shallow affect	12. Early behavioral problems
8. Callous/Lack of empathy	18. Juvenile delinquency
16. Failure to accept responsibility	19. Revocation of conditional release
	20. Criminal versatility
<i>Items that do not fall under any factor</i>	
11. Promiscuous sexual behavior	
17. Many short-term marital relationships	

of the *IPA*. In the remaining section, we argue that current neuropsychological evidence also does not show that psychopaths lack general capacities for control that have been invoked in other, more recent, versions of this argument. Following some recent proposals, we maintain that certain executive functions plausibly underpin the volitional capacities in the legal requirements for criminal responsibility. Nevertheless, we indicate that the available neuropsychological evidence does not show that executive functions in psychopaths are so impaired to undermine their criminal responsibility.

2 Psychopathy

Most of the neuropsychological evidence that is mentioned in the discussion of the criminal responsibility of psychopathic offenders relies on Hare's (2003) Psychopathy Checklist Revised (PCL-R). The PCL-R is used by trained clinicians to diagnose psychopathy by means of semi-structured interviews and intensive study of the subject's history (mostly based on criminal records). PCL-R contains 20 items that, on the basis of how similar scores in the items tend to correlate, are divided in two principal factors (see Table 1).²

Each item receives between 0 and 2 points. While 0 indicates the absence of a trait, 2 indicates its full and 1 moderate presence. The maximum total score is 40 points. In the USA and Canada, the cut-off value for the diagnosis of psychopathy is 30 or more points. In Europe, a score of 25 is often used as the cut-off value.

² While we use such a factorization for illustrative purposes, it is important to mention that specialists are divided on the exact factorization of the construct as diagnosed by PCL-R (see, e.g., Cooke and Michie 2001).

Although, it was originally devised for prison and institutional settings, now there are versions of the PCL-R that are used for diagnosing psychopathy in general populations (see Hare 2003).

The PCL-R has proved to be reliable for measuring psychopathy, thus it has become a unifying diagnostic tool for a wide range of scientific investigations and forensic applications (see Patrick 2006). In particular, PCL-R is most commonly used for devising behavioral and neuropsychological experiments and devising neuropsychological explanations of the condition (see Blair et al. 2005). Therefore, it is important to stress that most of the studies used in the discussions of the instances of the *IPA* concern the notion of psychopathy as measured by PCL-R as opposed to other conceptualizations. Let us now move to clarify the premises of this type of argument.

3 The Argument for the Irresponsibility of Psychopaths

One premise of the *IPA* describes or prescribes the type of psychological deficiencies that justify or should justify legal exculpation. Given that this premise is not the target of our criticism, we limit ourselves to survey some dominant views and debates on the deficiencies that grant or should grant exculpation.

Laws in western countries contemplate different types of psychological deficiencies that might mitigate or exclude punishment. Cognitive impairments constitute a significant class. The rules for insanity defenses, for instance, concern deficiencies that affect relevant types of knowledge or awareness. According to the M’Naghten rule, a very influential formulation of the standard for criminal responsibility, a defense by insanity is applicable when:

(...) the party accused acted under such a defect of reason, from a disease of the mind, as not to know the nature and the quality of the act he was doing, or if he did know it, he did not know he was doing what was wrong. (...) If the accused was conscious that the act was one which he ought not to do, and if that act was at the same time contrary to the law of the land, he is punishable.
(Cited in Bartlett 2010, p. 28)

This rule addresses two main classes of cognitive deficiencies that require, in turn, further clarification and interpretations.

There are different views on the deficiencies concerning the knowledge or awareness of the “quality and nature of the act” that are contemplated by the M’Naghten rule (see Yannoulidis 2012, pp. 14–16). This requirement covers paradigmatically cases of agents that are deluded about the superficial features of their action, and, thus, do not know what they are doing. For instance, a psychotic person who kills another when under the delusion that the victim is a dangerous devil would satisfy this epistemic requirement. However, at least in certain jurisdictions, the requirement involves a “deeper level of knowledge” of the nature of the action (Yannoulidis 2012, p. 15). Thus, the rule would apply to someone who, despite knowing that she is choking another person, is not aware that this would lead to the death of a person.

Similarly, views differ on the object and nature of the knowledge of the wrongness of an action. The English practice, for instance, stresses deficiencies in the knowledge or awareness of the legal wrongness of the act (see Yannoulidis 2012, p. 17). On the other hand, the Australian common law favors a “moral wrongness” reading. The rule should thus be applied to individuals with a defective knowledge or awareness of the reasons “which to ordinary people make that act right or wrong” (Yannoulidis 2012, p. 17; see, also, Fine and Kennett 2004). Similarly, while some regard the requirement as concerning knowledge that certain laws or norms are in place in society, others might require some “deeper” understanding of them (see Elliott 1992, pp. 203–205). These different interpretations might be motivated and refined under different philosophical views on punishment.³ For instance, those who place at the core of the practice of punishing also certain forms of communication, to satisfy a retributive requirement or even a rehabilitative one, might require that the agent is a competent moral interlocutor (Duff 2001). As we will see in the next section, some influential formulations of the *IPA* are based on the assumption that psychopaths lack some form of deep moral understanding.

Many legislative systems, that implement some version of the cognitive deficiency requirement, contemplate a *volitional* or *control condition* as well. North American and many European legislations require that a culpable agent, besides knowing her surroundings and the nature of her action, is capable of controlling her actions. The American Model Penal Code, for instance, states that a person might not be responsible for an action if:

at the time of such conduct as a result of mental disease or defect [the person] lacks substantial capacity either to appreciate the wrongfulness of his conduct or to conform his conduct to the requirements of the law. (American Law Institute 1962, section 4.01.)

Similar requirements for the insanity defense can be found across different countries in the Western Hemisphere (see Simon and Ahn-Redding 2006). For example, the German Criminal Code states that:

Any person who at the time of the commission of the offence is incapable of appreciating the unlawfulness of their actions or of acting in accordance with any such appreciation due to a pathological mental disorder, a profound consciousness disorder, debility or any other serious mental abnormality, shall be deemed to act without guilt. (The German criminal code 2008, section 20)

There are other types of defenses that, as the insanity defense, focus on the cognitive and volitional capacities of the defendant.

Consider, for instance, the diminished responsibility defense.⁴ While the successful insanity defense completely exonerates from punishment, the successful

³ For a recent and comprehensive discussion of these philosophical issues, with a focus on the culpability of psychopathic offenders, see Godman and Jefferson (2017).

⁴ Anglo-American legislations tend to apply diminished responsibility defense only to cases of murder to mitigate the offense charges, for instance, from first-degree murder to manslaughter. Legislations of continental Europe apply variants of diminished responsibility defense more broadly, and not just to cases

diminished responsibility defense can recommend mitigation. National legislations of various countries implement differently the diminished responsibility defense (Kröber and Lau 2000). Nevertheless, among the American and European countries that accept this defense, the underlying psychological conditions are similar to those of the insanity defense. For our purposes, the part of English and Welsh Homicide Act that refers to these capacities provides a good illustration:

A person (“D”) who kills or is a party to the killing of another is not to be convicted of murder if D was suffering from an abnormality of mental functioning which (...) substantially impaired D’s ability to do one or more (...) things (...).

Those things are:

- (a) to understand the nature of D’s conduct;
- (b) to form a rational judgment;
- (c) to exercise self-control. (Homicide Act 1957, section 2)

Having surveyed some current views and interpretative issues on the psychological deficiencies that are relevant for the first premise of the *IPA*, let us now explicate the assumptions that are pivotal to our criticism of different formulations of its second premise.

This premise states that psychopathy correlates significantly with neuropsychological incapacities that would support the conclusion that at the moment of committing a crime they have exculpating deficiencies. Let us consider an example of this premise:

[Neuropsychological] evidence provides empirical support for the recent argument by Morse (2008) who concludes that “severe” psychopaths are neither morally responsible nor deserving of blame and punishment because they do not understand the point of morality, lack a conscience and the capacity for moral understanding and rationality. (Glenn et al. 2011, p. 302)

The claim is that the diagnosis of psychopathy, in its severe forms, is relevant for exculpation, not just that *some* deficits that correlate with psychopathy sometimes might account for the exculpation or diminished responsibility. Thus, the second premise of the *IPA* is that general incapacities associated with severe forms of psychopathy are *sufficient* to determine an exculpating deficiency in relation to a specific criminal act. However, how can it be established on the basis of neuropsychological data that individuals who have “severe” psychopathy suffer general incapacities of this type?

There are difficulties in moving directly from neuropsychological evidence about certain incapacities to the legal requirements presupposed by criminal accountability (Eastman and Campbell 2006). The epistemic and control requirements that

Footnote 4 continued

of homicide (see, e.g., Kröber and Lau 2000). In any case, a successful diminished responsibility defense involves establishing partial responsibility for the crime, which deserves lesser punishment. However, it does not imply wholesale acquittal as in the case of the insanity defense.

underpin criminal responsibility are legal notions that are understood from the perspective of ordinary folk psychology. This understanding relies on notions such as belief, knowledge, desire, intention, choice, and so on (Glannon 2014; Morse 2008; Reznick 1997). The legal requirements that we have considered above do not indicate in detail the psychological capacities, and, even less, the neurological mechanisms, that underlie criminal responsibility (Glannon 2014). Moreover, these legal formulations do not establish how neuropsychological evidence could prove the presence or absence of these capacities. Therefore, relating neuropsychological data to legal requirements of criminal responsibility requires establishing which specific psychological capacities underlie, at least as necessary conditions, criminal accountability.

The notion of rationality offers a plausible *bridge* between the legal and neuropsychological domain. In fact, several authors have argued convincingly that rational psychological capacities are, at least, necessary for the cognitive and volitional competence required for criminal responsibility (cf. Aharoni et al. 2008; Duff 2010; Glannon 2011; Hirstein and Sifferd 2010; Morse 2008; Sifferd 2013). Stephen Morse gives a general and effective statement of this view:

Legally responsible agents are therefore people who have the general capacity to grasp and be guided by good reason in particular legal contexts. They must be capable of rational practical reasoning. (Morse 2000, p. 253)

These rational capacities are neither sufficient nor, probably, the only necessary ones for criminal liability (see Reznick 1997, pp. 173–200). In any case, as we will see in the next sections, several authors have adopted these capacities in their formulations of the *IPA*. Before engaging with these specific formulations, we should consider in some detail the notion of incapacity that characterizes this family of arguments.

Several conditions need to be satisfied to conclude that some neuropsychological evidence shows that an agent is incapacitated in a way that affects her criminal responsibility. First, it is a very important insight that a failure to perform in certain contexts is not a definitive sign of a diminished capacity or lack of it (see, for a classical statement, Glover 1970, p. 65). Therefore, experimental paradigms that measure, in a statistically relevant way, an impaired performance in a class of people cannot show that they lack a certain capacity. These experiments need to be supplemented with explanations of the performance that are based on peculiar underlying cognitive or neural mechanisms to support the existence of incapacities. Thus, neuropsychological evidence about psychopaths should combine data about experimental tasks and explanatory hypotheses to authorize the conclusion that they are impaired in practical rational capacities that are relevant for criminal exculpation.

To appreciate another constraint on the neuropsychological evidence required to exculpate psychopathic offenders, we need to distinguish between *general* and *specific* incapacities. The capacities that are explanatory of the crime at issue are those that specify what the person could do or could have done at the moment of committing it (Buchanan 2015, p. 3). Following Buchanan (2015) and Honoré (1999, Appendix), we distinguish between two senses of capacity that are relevant for determining criminal responsibility in the present context. A *general capacity* is

an ability to perform some action in a wide class of circumstances, but that need not be executed in every circumstance in which an agent acts. For instance, the capacity to drive is general insofar ascribing it to some subject leaves open a general class of situations where it could be manifested. These circumstances might include the different types of car she might be driving, terrain and weather conditions, and so on. However, we would not deny that a person is capable of driving a car, if she would not know how to drive at high speed on frozen roads. In that case, the person would lack the *specific* capacity to drive in such conditions. Logically, not having the general capacity implies not having the specific capacity. However, as the example shows, the reverse does not hold.

We maintain that the most plausible reading of the second premise in the *IPA* presupposes that neuropsychological studies show that psychopaths have general impairments in practical rationality that are *sufficient* for exculpation.⁵ In fact, as we have seen above, several proponents of the *IPA* conclude that psychopaths are partially or totally unaccountable, without further qualification.⁶ Moreover, such unqualified conclusions render the formulations of the argument relevant for judicial practice. As it is well known, it is difficult for the court to determine post hoc the specific psychological and environmental circumstances under which the defendant committed the crime. The *IPA*, if sound, would provide relevant information to exculpate psychopathic offenders, independently from finer grained details of the situations when their crimes take place. Let us now turn to the evaluation of the version of this argument that focus on the cognitive capacities of psychopaths.⁷

4 Criminal Responsibility and Normative Understanding in the Psychopath

There is agreement that psychopaths do not satisfy some of the epistemic requirements for the insanity or diminished responsibility defense. In fact, unlike psychotics, they appear to know the “superficial” nature of their actions (see, for

⁵ It is important to stress that generalized incapacities are not *necessary* for the exculpatory deficiencies (see Yannoulidis 2012, pp. 19–22). A “momentary” incapacity, as opposed to a general one can also be regarded as exculpatory. For instance, killing because of voices in the head might trigger the insanity defense, despite the fact that on numerous occasions in the past the defendant managed to disregard the voices. Thanks to an anonymous reviewer for the example.

⁶ In particular, Glenn et al. (2011) and Morse (2008) argue that the diagnosis of psychopathy should warrant the insanity defense. Sifferd and Hirstein (2013) defend the more nuanced conclusion that being a so-called unsuccessful psychopath should count as a mitigating factor (see Sect. 5 below).

⁷ A reviewer remarked correctly that we sidestep an important issue that underlies bridging psychological incapacities with exculpatory deficiencies in individual cases. In fact, how many times an agent has to manifest incapacity in the past before he commits the crime to grant exculpation? We also bypass the problem of how the law could rely on aggregations of probabilities about classes of individuals (such as their rate of reoffending) to infer something about a class member (see Eastman and Campbell 2006, p. 315; Glannon 2011, p. 77; for a discussion of this issue, see Scurich and John 2012). The authors that we engage with do not address these important practical problems. Their focus, instead, is on the neuropsychological evidence that renders the diagnosis of psychopathy, independently from the specific history of the defendant, a ground for exculpation. We are going to argue that the *IPA* is flawed in this respect.

instance, Hare 2003, p. 5). Similarly, it is widely accepted that psychopaths “understand that specific actions are against the law or violate social norms” (Glenn et al. 2011, p. 3012). Many legal scholars and philosophers, instead, advance versions of the *IPA* by maintaining that neuropsychological data reveal that psychopaths lack capacities underlying moral understanding that is deeper than the recognition that certain norms or laws apply in the society (see Fine and Kennett 2004; Levy 2007; Morse 2008).

Assessing the capacity to grasp moral reasons and, thus, to have moral understanding in psychopaths faces some difficulties. First of all, notoriously, there are extended and vigorous philosophical debates on what moral understanding is and which psychological capacities are its prerequisites (see, e.g., Tiberius 2015, ch. 6). A plausible way around these difficulties would be relying on a test that measures the manifestation of moral understanding without relying on controversial assumptions about the underlying psychological capacities.

Several philosophers and cognitive scientists, with different views on the nature and the psychological underpinnings of moral understanding, have assumed that the performance of psychopathic offenders in the so-called moral/conventional paradigm is relevant for the issue of their moral understanding.⁸ Based on initial results, James Blair (1995, 1997) concluded that the psychopathic participants treated all norm violations as moral, but when they justified their judgments, they were less likely to invoke considerations based on harm inflicted to people.

The performance of psychopaths in the moral/conventional paradigm experiments has been taken to show that they might lack or have impaired moral understanding that is relevant for moral or criminal responsibility (Fine and Kennett 2004; Levy 2007; Malatesti 2009; Shoemaker 2011). In particular, both supporters of rationalist and sentimentalist accounts of moral understanding have argued that this psychological evidence and neurological hypotheses would enable us to explain the performance of psychopaths in the moral/conventional task as the result of an incapacity to grasp moral considerations (for a survey, see Malatesti 2009). Some philosophers dispute the idea that moral/conventional task really measures moral competence (see, e.g., Kelly et al. 2007). We do not take stance on the issue. However, even if we grant the relevance of this and similar paradigms, there are now reasons to doubt the reported lines of argument.

More recent studies on the moral understanding in psychopaths cast doubt on the empirical robustness of Blair’s results.⁹ For example, Dolan and Fullam (2010), in a study on adolescent offenders with psychopathic personalities, already failed to replicate results from earlier studies that utilized the moral/conventional task. More recently, Aharoni et al. in two studies (2012, 2014), showed that when psychopathic

⁸ This paradigm classifies normative judgments by their permissibility, seriousness, authority-dependence, and justification (Nucci and Turiel 1978). People tend to classify certain violations, such as hitting a child, as more serious, authority independent, and justified by considerations of well-being. Thus, they are called moral. Other violations, such as talking in class without permission, are judged as depended on authority and are deemed less serious. Thus, they are called conventional.

⁹ Already Maibom (2008, pp. 169–173) compellingly criticised formulations of the *IPA* based on classical studies concerning moral understanding in the psychopath. Relying on more recent empirical literature, we further question the replicability or generality of the results of these classical studies.

individuals were explicitly forced to decide which norm violations are moral and which are conventional, they performed in the same manner as non-psychopathic control participants. Moreover, other tasks that are taken to probe how people think about moral issues did not show relevant differences between psychopaths and nonpsychopaths. For instance, psychopaths showed a normal pattern of judgments in trolley problem tasks (Cima et al. 2010).¹⁰

In their recent review of psychopaths' performance on different tasks that purport to measure aspects of moral understanding, Schaich Borg and Sinnott-Armstrong reach the conclusion that "the current literature (...) suggests that psychopaths might not have any specific deficits in moral cognition, despite their differences in moral action, emotion, and empathy" (Schaich Borg and Sinnott-Armstrong 2013, p. 124). Thus, it seems that the standard empirically based arguments for claiming that psychopaths lack moral understanding are not well grounded. In effect, they fail to warrant the claim that psychopaths should be excused from criminal responsibility under the M'Naghten and other similar rules (Aharoni et al. 2014). However, the evidence considered so far is not the only one used to advocate the exculpation of psychopathic offenders.

Some authors insist that there is sufficient neuropsychological evidence to argue that psychopaths lack or have severely diminished emotional capacities that are necessary for moral and criminal responsibility (Focquaert et al. 2015; Glenn et al. 2013; Morse 2008). The bottom line of their argument is that even though psychopaths standardly have knowledge of moral and legal norms, they cannot translate that knowledge into action (Focquaert et al. 2015, p. 116; Glenn et al. 2011, p. 302).

The claim of Glenn and colleagues that psychopaths cannot translate normative knowledge into action can be interpreted in different ways. One could be called the *mode of presentation* interpretation. According to this reading, psychopaths can verbally express the knowledge of the relevant norms, but these norms are not represented or grasped under the "right mode of presentation". The idea of a "mode of presentation" that is motivational can be illustrated with the case of a colorblind person.¹¹ This person could be able to know physical facts about colors, facts about how people judge similarities and differences between different colors, etc. However, she would not be able to use the direct visual perception of color to guide her action and make reasonable judgments, because her visual system does not

¹⁰ In these experiments, one needs to decide, for instance, whether it is all right to push a lever and thereby to kill one person, or to push a fat man off a bridge, and thereby kill him, in order to save five people towards which a runaway trolley is heading. A reviewer remarked that performance on the trolley problem task does not really measure moral understanding. First, it was not devised for this purpose. Second, it does not have an intuitively correct answer. We can countenance these points. As in the case of the moral/conventional paradigm, we do not claim that performance on this task differentiates people with *real* moral understanding from those who lack it. Here we limit ourselves to argue that, even if it is conceded that these tasks measure moral understanding or some capacities associated with normal moral competence, so far, their use in empirical studies does not show unusual patterns in moral judgments of psychopaths.

¹¹ The notion of "mode of presentation" is widely discussed in contemporary philosophy of language and mind. Our use of the expression is compatible with the general view, shared by many authors, that "modes of presentations" have a role in the psychological explanation of behavior.

represent objects as colored. In the case of psychopaths, the mode of presentation would be a way of apprehending norms that would be motivational. As Glenn and colleagues say, psychopaths lack the appropriate emotional capacities or “the feeling of what is right and wrong” (Glenn et al. 2011, p. 302).

The *appropriate mode of presentation* interpretation applies reasonably to Glenn and colleagues’ version of the *IPA*. In fact, they maintain that psychopaths have deficits in emotional empathy and the identification of emotions, which disables them from taking “the emotional perspective of others” (Focquaert et al. 2015, p. 112). According to some studies, psychopaths exhibit poorer recognition of fear and sadness in faces of other people (Blair 2007). According to these authors, this disability then accounts for their unempathic and disconcerting treatment of other people. In addition, they cite abnormalities in psychopaths’ brain regions, such as the amygdala, anterior cingulate, orbitofrontal (OFC) and the ventromedial frontal cortex (VM) that are supposed to underlie processing of emotional stimuli (see Blair et al. 2005). Walter Glannon gives an informative statement of this type of reasoning:

The OFC and the ventromedial and ventrolateral prefrontal cortex receive projections from and send projections to the amygdala. (...) The amygdala mediates the capacity for normal responses to fear-inducing stimuli, and the anterior cingulate cortex mediates the capacity for empathy. This enables us to recognize that others have needs and interests and to recognize wrongful and harmful actions. A normal empathic response to others and a normal fear response to threatening situations inhibit the performance of these actions. These responses enable persons to internalize moral norms and feel guilt and remorse for what they do or fail to do. (Glannon 2011, p. 60)

Relying on a similar reasoning, Glenn, Laufer, and Raine conclude that “these neurological deficits impair the ability of psychopaths to appreciate the wrongfulness of their actions at *the time of the criminal act* [...]” (2013, p. 426).

The neuropsychological evidence used by Glenn and colleagues, however, does not support the existence of a *general incapacity* that would warrant their conclusion. As we have argued in the section above, the *IPA* plausibly goes through if a correlation between psychopathy and exculpating deficiencies could be established across several types of circumstances. However, the deficits in affective processing and emotion recognition in psychopaths depend on a very specific setting of the task at hand (Hamilton et al. 2015). Hiatt et al. (2002), Kosson et al. (2002), and Glass and Newman (2006) already failed to replicate psychopathy-related deficits in recognition of emotions such as anger, fear, happiness, or sadness. Recently, Newman et al. (2010) and Baskin-Sommers et al. (2011) have shown that if psychopaths’ attention is directed towards certain face features, they recognize fearful stimuli normally, including the normal fear potentiated startle. Furthermore, Larson et al. (2013) have shown that even the normal activation of the amygdala can be elicited, once the psychopaths’ attention is suitably directed. A recent review study confirms that psychopaths do not show abnormal subjective experience of fear, rather they show contextual insensitivity to fear-related cues (Hoppenbrouwers et al. 2016). This indicates that if psychopaths have deficits in responding to moral

cues for which emotional processing is relevant, then those deficits must be sporadic and dependent on very specific contexts (Larson et al. 2013).

Joseph Newman's Response modulation hypothesis (RMH, see Hiatt and Newman 2006) offers a plausible account of these variable data. According to the RMH, psychopaths show deficits in modulating attention by bottom-up automatic processes. That is, they seem to have a tendency not to respond to secondary cues that are outside of their primary focus or goal-directed behavior.¹² Specifically, Baskin-Sommers et al. (2011) propose that the proximal mechanism for these deficits includes early attention bottleneck.

The rationale for the attention bottleneck stems from models that characterize early selective attention as a "fixed bottleneck" where information is processed in serial, and once the bottleneck is established, it blocks the processing of peripheral information that is not goal relevant. Such a bottleneck would confer an advantage for psychopaths in filtering potential distractors, but at the cost of undermining the ability to attend to multiple ongoing streams of information. Ultimately, this trade-off would result in a tendency to overlook potential threat and other important information unless it is directly related to their goal-directed focus of attention. Thus, according to the attention bottleneck model, psychopaths are insensitive to threat cues not because they are incapable of fear responses, but because their failure to reallocate attention to affective stimuli while engaged in goal-directed behavior renders them oblivious to these affective cues. (Larson et al. 2013, p. 758)

Nevertheless, top-down or effortful attentional processes may override these bottom-up deficits in attention modulation (cf. Blair et al. 2005, pp. 67–68). As studies seem to indicate, when psychopaths appropriately adjust their attention they recognize affectively valenced cues and respond to them according to the demands of the task (Koenigs and Newman 2013; for a neurobiological explanation of these data, see Moul et al. 2012).

It might be claimed that while these studies show that psychopaths do not lack the general capacity to consider morally relevant cues, still on particular occasions we can expect them to lack the specific capacity to recognize those cues. Thus, on those occasions they could be held nonculpable under the M'Naghten rule, for instance. We do not dispute that on specific occasions psychopaths may not recognize the relevant cues. What we question is that anything general can be concluded from knowing that someone is a psychopath to the conclusion that at the moment of the crime she lacked the specific capacity. Take for instance the following example. A psychopath goes into a convenience store, violently hurts the

¹² According to RMH and variants of it, psychopaths' tendency to disregard goal-irrelevant cues is not restricted to affect-laden stimuli. This feature of psychopaths' attention is exhibited on the Stroop task (see, e.g., Koenigs and Newman 2013, pp. 96–97). The task is to report the color of a word while disregarding the color it denotes. For instance, a word says "green" while it is colored in red. Normal subjects show interferences by having a prepotent reaction to report the color that is named. Psychopaths, on the other hand, perform better since their attention is not distracted by the color name which is irrelevant for the task.

cashier and steals the money. Could this act of goal-directed violence be attributed to a context-dependent and specific incapacity to recognize, for instance, fear in the face of the victim? The available empirical evidence does not settle the issue. The evidence does not indicate how often psychopaths pay attention or not to the relevant cues in ordinary life. Moreover, even if granted that in this particular situation the psychopath was not concentrated on the right features of the victim's face, there are a lot of other cues indicating that the victim is afraid and which the psychopath may notice. For instance, she raises her hands, she is submissive, offers money, she is crying, and so forth. Thus, the severity of the potential deficits and their relevance for the crime at issue would need to be tackled on a case by case basis.¹³

In addition, the evidence does not exclude that although psychopaths might show a diminished affective mode of presentation in certain circumstances, they have other capacities that might help them overcome this deficit and, thus, leave open the possibility of their criminal responsibility (in particular, see Sifferd and Hirstein 2013). Glenn et al. (2009) showed that psychopaths solve moral decision tasks by utilizing more cognitive brain areas, such as the dorsolateral prefrontal cortex. This indicates that they might access morally relevant facts via some other faculties. The fact that this would be enough to preserve their criminal responsibility can be illustrated with the example of a color-blind person. Sifferd and Hirstein (2013, pp. 132–133) compellingly argue that just because a colorblind person cannot perceive the red light on a standard traffic light, it does not follow, without further qualification, that she is not responsible for her action when she crosses the road while the light is red. She could be held responsible given that she has other cognitive resources to find out when the light is red (e.g., by knowing the standard pattern of activation of lights, watching other people, etc.). Of course, this does not imply that we would hold her responsible for crossing the red light in extremely unusual situations (e.g., if conventions in lighting patterns suddenly change without her knowing about it). However, the possibility of such unusual circumstances does not imply that as a general rule being color-blind would exculpate a person from jay walking. Given the availability of general capacities, exculpation or diminished responsibility should be standardly determined on a case by case basis, taking into consideration circumstances and the available resources at the moment of performing the action and the opportunities for incapacity remediation that the person might have had in the past. Similar considerations apply to psychopathy. Specifically, they seem to have a general capacity to appreciate moral considerations. In addition, there is no evidence that when they commit a crime the situation involves unusual factors that would be analogous to extremely unusual circumstances that would exculpate a color-blind person whom we normally hold responsible for her actions.

The studies and the explanatory hypotheses that we have mentioned so far put pressure on versions of the *IPA* that focus on psychopath's affective appreciation of moral reasons. Given the variability and context-dependency of the situations in which psychopaths exhibit abnormalities in processing emotional data, we cannot

¹³ Thanks to two anonymous reviewers for urging us to clarify this issue.

draw any general conclusion about their inability to appreciate the reasons for conforming their action to the rule of law. In particular, we cannot conclude that in any particular situation when a psychopath commits a particular crime, that crime was an effect of one of those emotional deficits. However, there is another plausible interpretation of the line of argument advanced by Glenn and colleagues that we have to consider.

Besides the *appropriate mode of presentation* interpretation of the claim that psychopaths are incapable to translate their knowledge of right and wrong into action, a *control* interpretation could be advanced.¹⁴ The extreme example of the inability to control oneself would be a person who acts under an irresistible desire to kill a friend, because the voices in her head are telling her to do that, for instance, while being fully aware that the act would be morally and legally wrong. Less extreme examples would include problems with revising and adjusting attitudes and actions in the light of changing circumstances and available reasons. For instance, Focquaert et al. (2015, pp. 113–115) argue that abnormalities in brain regions underlying cognitive and emotional processes might be responsible for poor planning and impulsive behavior that would hinder psychopaths from acting in accordance with the abstract normative knowledge. According to the control interpretation, the incapacity of psychopaths to translate their knowledge of right and wrong into action means that they have diminished ability to control their action in the light of that knowledge. We discuss this suggestion in the next section.

5 Control Capacities, Executive Functions, and Neuropsychological Data

Some authors formulate the *IPA* by maintaining that neuropsychological data show that psychopaths may have diminished rational capacities to control their behavior that would warrant an insanity or reduced responsibility defense (see, e.g., Focquaert et al. 2015; Glenn et al. 2013; Sifferd and Hirstein 2013). In particular, Sifferd and Hirstein (2013, pp. 134–135) argue that there might be a group of so-called unsuccessful psychopaths with rational self-control incapacities warranting legal exculpation or diminished responsibility. Generally, the distinction between successful and unsuccessful psychopaths is made in terms of their life histories and how they score on psychopathy measures. In particular, successful psychopaths would be those who score high on the Factor 1 traits of the PCL-R but do not have (or have little) incarceration histories. While, the unsuccessful psychopaths would be those who also have more pronounced Factor 2 traits indicating frequent encounters with the legal systems (as exhibited by their criminal records).

A version of the *IPA* that focuses on control conditions can be formulated by maintaining that psychopaths have impairments in executive functions (EF) that undermine their capacities for rational control. In fact, Sifferd and Hirstein (in

¹⁴ These two interpretations could be roughly mapped onto the difference, stated in the English Homicide act from 1957, between the incapacity to make rational judgments and that to exercise self-control. Following Fischer and Ravizza (1998), the difference could also be stated in terms of reasons-receptivity and reasons-reactivity (see, also, Glannon 2011, ch. 2).

particular, see their 2010) made an important advancement in the debate by interfacing the notion of rational capacities underlying the control condition with the neuropsychologically grounded notion of EF (Jurjako and Malatesti 2016a). Folk-psychologically, EF are capacities required to adapt behavior and revise attitudes in the light of reasons and norms that apply to them in a particular situation. Cognitive abilities underlying EF include attention, decision-making, reasoning, problem solving, memory, and inhibition of action (Hirstein and Sifferd 2010).

There is neurological evidence that seems to show that psychopaths have a characteristic EF profile. On different EF tasks, they manifest peculiar performances that have been correlated with unusual functioning in the neural areas underpinning EF. Brain scans and EEG studies on psychopaths have shown lowered activity in the amygdala, anterior cingulate cortex, ventromedial prefrontal cortex, orbitofrontal cortex, and the broader paralimbic brain areas (Hamilton et al. 2015).

However, differences in brain activations that underlie EF, leave open the issue whether they incapacitate psychopaths from acting responsibly (Glannon 2014; Sifferd 2013; Vincent 2008; Vitacco et al. 2013). A correlation between brain activation and personality traits does not directly imply that those neural differences have debilitating effects on the functional level of rational capacities that underlie criminal responsibility. In particular, some brain studies on a sample of psychopathic offenders and children with conduct disorder indicate their ability to perform normally on different EF tasks, while at the same time showing unusual neural activation patterns (Finger et al. 2008; Gregory et al. 2015). These studies confirm that brain differences do not necessarily lead to or are correlated with incapacity for adaptive responses at the functional or behavioral level.

It could be argued that, in addition to brain studies, psychopaths' poor performance on behavioral tasks, which measure their EF, shows something important about their capacity to rationally control their behavior. An instance of this argument has been advanced explicitly as pertaining to criminal or unsuccessful psychopaths (Sifferd and Hirstein 2013; see, also, Glenn et al. 2013).

The problem with these arguments, however, is that they do not pay enough attention to the discordant data on psychopaths' performance on different EF tasks. In fact, it seems that psychopaths' results on EF tasks vary depending on particular psychopathic traits, how they are measured, the task used, and the demographic population (Jurjako and Malatesti 2016a; see, also, Baskin-Sommers et al. 2015).¹⁵ Once this variability is taken into consideration, it is not clear that there is sufficient evidence indicating that psychopaths suffer from general impairments underlying the control capacities.

¹⁵ Sifferd and Hirstein (2013) propose to account for the discrepancy in terms of the distinction between successful and unsuccessful psychopaths. Unlike successful psychopaths, unsuccessful ones would be those who have poor EF, and thus would be liable to diminished responsibility. In our paper (Jurjako and Malatesti 2016a), we discuss in detail why the distinction in terms of successful and unsuccessful psychopathy constructs does not provide the most plausible explanation of the mixed results of psychopaths' EF performance. One of the important reasons is that successful and unsuccessful psychopaths seem to be more similar with respect to EF than it was thought by some researchers. For a review, see Maes and Brazil (2013).

We argue in another article that some of the variance in results can be accounted for by distinguishing between “cool” and “hot” EF (Jurjako and Malatesti 2016a). On the one hand, cool EF are measured by cognitive control tasks that lack motivational/emotional salience, and are underpinned by frontostriatal and frontoparietal neural circuits, which, most notably, involve connections between dorsolateral prefrontal cortex and basal ganglia. On the other hand, hot EF are measured by tasks tapping capacities that process motivational and emotional stimuli and that are underpinned by structural connections between orbital and ventromedial prefrontal cortex and their connections to the paralimbic areas of the brain (see Maes and Brazil 2013, p. 1267).

It seems that psychopaths do not show substantial impairments in cool EF (Maes and Brazil 2013). Relatively normal performance of psychopaths’ cool EF was confirmed in a recent study by Pera-Guardiola et al. (2016). They used the Wisconsin Card Sorting Task (WCST), which utilizes attention, working memory, and inhibition, to test how offenders with antisocial personality disorder with and without psychopathy perform in comparison to nonpsychopathic participants. In the WCST, participants learn to match cards according to a criterion, which changes every ten rounds. For instance, participants need to match cards by the exhibited number, shape, or color. Learning proceeds by receiving positive or negative signals, depending on the correctness of the choices made. Pera-Guardiola et al. (2016) found that offenders with high levels of psychopathic traits performed similarly to nonpsychopathic controls and better than offenders with lower psychopathic traits. These results concur with Ishikawa et al.’s (2001) seminal study, in which they also found that psychopaths with criminal history performed similarly to nonpsychopaths on the WCST.

On the other hand, there is some evidence that psychopaths show poorer performance on hot EF tasks (Bagshaw et al. 2014; Blair et al. 2005). Hot EF performance is normally measured by instrumental learning tasks.¹⁶ For example, the Iowa gambling task was devised, most notably, to test the activation pattern of the ventromedial prefrontal cortex (Bechara et al. 1994). In this task, participants choose cards from decks A, B, C, and D. Choosing from A and B brings high monetary rewards, but further in the game even higher losses. Thus, choosing solely from A and B brings net losses. Choosing from C and D, on the other hand, brings lower rewards but even lower losses. Thus, choosing from C and D brings net gain. The successful performance on the task involves inhibiting prepotent responses to choose from A and B, and learn to change responses towards C and D. Patients with lesions in the ventromedial prefrontal cortex tend to keep choosing cards from the bad decks (Bechara et al. 1994). In some studies, psychopaths exhibited similar risk-prone behavior in the Iowa gambling task and related tasks tapping hot EF (see, e.g., Blair et al. 2005).

However, psychopaths’ hot EF deficits do not amount to the global incapacities, across contexts that, as we have seen, are presupposed by the *IPA*. These deficits

¹⁶ Instrumental learning is an umbrella term for tasks tapping different behavioral and neurocognitive aspects of reinforcement learning. Examples involve passive avoidance, response-reversal, and gambling tasks. An overview of these tasks pertaining to the present discussion can be found in Jurjako and Malatesti (2016b).

have proven to be context depended (Brazil et al. 2013; Hamilton et al. 2015; Koenigs and Newman 2013). Several studies have failed to replicate the result that criminal psychopaths perform worse than nonpsychopaths on tasks such as the Iowa gambling task (Blair and Cipolotti 2000; Schmitt et al. 1999). Similar replication failures were reported by Lösel and Schmucker (2004). It seems that in general psychopaths' performance on hot EF tasks can be accounted for in terms of how much they are attentive to the task requirements (Koenigs and Newman 2013).

A recent cognitive remediation treatment study by Baskin-Sommers et al. (2015) puts further pressure on the idea that psychopathic offenders have significantly diminished mental capacities that underlie criminal responsibility. The study is based on the attention bottleneck hypothesis (see Sect. 4), and it showed that incarcerated psychopaths can overcome their poorer performance on hot EF tasks simply by focusing their attention to the contextually important task-information. The study showed that psychopaths' performance improved on trained and also on untrained tasks, which plausibly shows that they are able to appropriately adapt their behavior in accordance with the perceived reasons (i.e., cues), regardless of the underlying brain differences (see, also, Gregory et al. 2015). The success of this study depended on the knowledge of i) psychopaths' contextually bound performance on instrumental learning tasks, and ii) how to engage their already present executive capacities to plan and execute action (Baskin-Sommers et al. 2015).

Thus, one upshot of the present discussion is that the variability and narrow context-dependency of psychopaths' performance on different EF tasks put pressure on the formulation of the *IPA* that focuses on psychopaths' capacity for control. Using similar considerations, Arielle Baskin-Sommers and Joseph Newman reach a conclusion that "at this time there is no definitive evidence that individuals identified as psychopaths are in some way precluded from culpability" (Baskin-Sommers and Newman 2012, p. 89). We agree with this contention. In particular, the reviewed evidence indicates that psychopaths do not suffer from general incapacities underlying control.

It might be open for further discussion whether on a given occasion a psychopath commits a crime due to a specific incapacity related, for instance, to the focusing of his or her attention. However, as we have already indicated in section four, it is still not clear how much of psychopaths' criminal activity is due to sporadic deficits discovered in experimental settings or how extensive those deficits are. In addition, the experimental studies do not indicate which task is more important for testing real life performance. For instance, we saw that on the WCST psychopaths tend to perform as other normal people, while on some tasks measuring hot EF, there are circumstances under which they perform less well than other people.¹⁷ However, we have no sufficient reason to think that one type of experimental task indexes better than others the overall behavior and cognition in ordinary life (see, also, Buckholtz et al. forthcoming, p. 20). Thus, these issues should be determined on a case by case basis, without adopting a default rule pertaining to psychopathic offenders. Many promoters of versions of the *IPA* seem not to be sensitive enough to this point.

¹⁷ Which sometimes amounts just to being slower at solving the task (see, e.g., Brazil et al. 2013).

6 Conclusion

In this paper, we have argued that the neuropsychological evidence so far advanced does not show that psychopathy correlates with incapacities that can grant, without further qualification, diminished or lack of criminal responsibility. Therefore, courts, when deliberating on the criminal responsibility of a psychopathic offender, should exercise caution when considering supposed correlations between psychopathy and diminished moral understanding.

Of course, as it is recognized by many, there might be serious problems in using general statistical correlations between certain deficits and a class of individuals to judge the culpability of a specific individual within that class (Eastman and Campbell 2006). Nevertheless, we have stressed a deeper problem in the case of the exculpation of psychopathic offenders. We maintain that this general difficulty is made more acute by the significant context-specificity of the impairments of psychopaths in processing emotional and other goal relevant cues. Thus, the implications of these abnormalities for capacities underlying criminal responsibility remain unclear. Although we do not deny that there are several important neuropsychological findings about psychopaths, courts, if they would like to use these data, are left with a complex case-by-case decision. In fact, they would have to establish whether the circumstances of the crime of the psychopathic defendant have any reasonable similarity with the highly specific experimental conditions where the typical deficits of psychopaths are manifested.

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