THE DUAL PROCESS MODEL OF MORAL JUDGEMENT. A DIVIDED MIND OR A MYOPIC METHODOLOGY?*

PEDRO JESÚS PÉREZ ZAFRILLA
University of Valencia

ABSTRACT: In this article I analyse the dual process model of moral judgement. First, I set out Joshua Greene's and Jonathan Haidt's propositions, which represent two schools of thought on this theory. Next, I conduct a number of methodological reviews. On the one hand, I argue that the method used is tautological, while on the other, I show that the use of dilemmas is not an adequate tool with which to account for moral deliberation.

KEY WORDS: Dual process model; Jonathan Haidt; Joshua Greene; dilemmas.

El modelo del proceso dual del juicio moral. ¿Una mente dividida o una metodología miope?

RESUMEN: En este artículo analizo el modelo del proceso dual del juicio moral. En primer lugar, presentaré las propuestas de Joshua Greene y Jonathan Haidt como representantes de dos corrientes dentro de esta teoría. A continuación, realizaré varias críticas de carácter metodológico. Por un lado, defenderé el carácter tautológico de la metodología empleada. Por otro, argumentaré que el empleo de dilemas no es una herramienta adecuada para dar cuenta de la deliberación moral.

PALABRAS CLAVE: Modelo de proceso dual; Jonathan Haidt; Joshua Greene; dilemas.

INTRODUCTION

How do we form moral judgements? During the second half of the twentieth century, psychology responded to this question from a cognitivist perspective, considering moral judgements to be the result of a reflective process, the main proponents of this approach being Kohlberg and Turiel. Since the turn of the new century, however, an alternative model has gained momentum, where moral judgements emerge from two distinct psychological processes, one emotional in nature; the other, rational. This double origin of judgements has led this new approach to become known as the dual process model of moral judgement.

In this article I analyse this dual process model of moral judgement. To do so, I start from the main theses of two of its foremost representatives, Greene and Haidt, who come from two quite different schools of thought within this model. Finally, I critique the methodology of the model, specifically those aspects concerning the use of dilemmas. This will allow us to establish whether the dual process model can account for the way people make moral judgements.

1. THE DUAL PROCESS MODEL IN MORAL PSYCHOLOGY

1.1. Social intuitionism

Although Haidt is usually considered an emotivist author,[1] he should be included within the dual model of moral judgement[2]. For Haidt, cognition is more far-reaching than mere calm reasoning and includes two processes: on the one hand, intuition (which other authors call emotion, or System 1), which processes information automatically, rapidly and unconsciously; and on the other hand, reasoning (System 2), which processes information calmly and consciously[3].

In social intuitionism, intuition is a key factor since, according to Haidt, social setting exerts a continuous influence on both us and our brains. Consequently, the brain continuously generates intuitive evaluations of pleasure or displeasure with regard to our surroundings. This means that the vast majority of our moral judgements are intuitive. The influence of intuition also extends to the other form of cognition, reflection. Following the approaches of Margolis[4] and Kunda[5], Haidt states that the faculty of reason is often biased by a set of heuristics that undermine its objectivity. Thus, for example, the bias of motivated reasoning converts reason into a *post hoc* process aimed at confirming the attitudes and intuitive judgements which the subject has already formed on the topic[6]. In this way, reason is not actually the cause of moral judgements, but rather a means of justifying these *a posteriori*.

Nonetheless, according to Haidt, despite the primacy of the intuitive process, the faculty of reason can produce unbiased judgements. This occurs on those rare occasions when the context does not awaken affective responses in the subject, or when the cognitive effort of reflection is able to resist such influences. The former happens when reflecting on complex moral dilemmas, such as that of

---

[1] NARVAEZ, D., «Moral complexity: The Fatal Attraction Truthiness and the Importance of Mature Moral Functioning», *Perspectives on Psychological Science* 5/2 (2010) 163-181; J. GREENE, «The secret joke of Kant's soul», in ARMSTRONG, W. S. (ed.) Moral Psychology, (MIT Press, Cambridge, 2008) 36; GREENE, J., NYSTROM, L. E., ENGELL, A. D. and COHEN, J., «The Neural Bases of Cognitive Conflict and Control in Moral Judgment», *Neuron* 44/2 (2014), p. 389.

[2] CLARKE, S., «SIM and the City: Rationalism in Psychology and Philosophy and Haidt's Account of Moral Judgment», *Philosophical Psychology* 21/6 (2008) 805. Recently, Greene himself has had to acknowledge that his theory differs from that of Haidt in the importance the two give to reason in generating moral judgements. See GREENE, J., *Moral tribes. Emotion, reason and the gap between us and them* (London, Atlantic Books, 2013), p. 334.

[3] HAIDT, J., «The emotional dog and its rational tail. A social intuitionist approach to moral judgement», *Psychological Review*, 108 (2001), p. 815.

[4] MARGOLIS, H., *Patterns, thinking and cognition* (University of Chicago Press, Chicago, 1987).

[5] KUNDA, Z., «The case for motivated reasoning», *Psychological Bulletin*, 108, (1990), p. 482.

[6] HAIDT, J., «The emotional dog and its rational tail.», cit. p. 821.

Heinz; the latter, when philosophers elaborate their counterintuitive theories[7]. In conclusion, intuition and reason are two distinct cognitive processes which lead to moral judgements, although intuition dominates.

1.2. *The dual process theory of moral judgement*

Greene has a different perspective on the dual process theory. He formulates his proposition on the basis of experiments conducted using neuroimaging techniques, analysing subjects' responses to dilemmas such as the well-known trolley problem. According to Greene, the different responses to variations of the trolley problem result from the existence of two cognitive processes that lead to two distinct types of moral judgements[8]. On the one hand, there is the emotional process of alarm (also called «automatic mode»), which leads to intuitive judgements. On the other hand, there is the cognitive process (or «manual mode»), which is designed to maximise the utility of planned actions. This cognitive process is controlled by a cost-benefit calculation and thus results in the formulation of controlled judgements. Greene categorises these intuitive judgements as «deontological», and controlled judgements as «utilitarian». However, his use of philosophical concepts to refer to judgements resulting from psychological processes is inappropriate[9].

Greene argues that the two processes have a different cerebral base and evolutionary origin. In contrast to Haidt's approach, Greene claims that the psychological process which habitually regulates moral judgements is cognitive, unless emotional alarm arises in a specific context[10]. For Greene, the experiment with various dilemmas, such as the trolley problem, shows that the automatic mode is activated in cases in which an intentional personal strength is produced, and the motive is to use the subject as a means to avoid harm[11]. When only one of these conditions is present (for example, when pushing the man by involuntary contact), the emotional alarm is not activated. This is because the emotional alarm process is a myopic module, capable of noting

---

[7] HAIDT, J., «The emotional dog and its rational tail.», cit. 820; HAIDT, J. and BJORKLUND, F., «Social Intuitionists answer six questions about moral psychology», in W. SINNOTT-ARMSTRONG (ed.) *Moral Psychology*, vol.2, (The MIT Press, Massachusetts, 2007), p. 186.

[8] GREENE, J. and HAIDT, J., «How (and where) does moral judgment work?», *Trends in Cognitive Sciences* 6/12 (2002) 519; GREENE, J., *An fMRI* «Investigation of Emotional Engagement in Moral Judgment», *Science* 293 (2001) 1206; GREENE, J., NYSTROM, L. E., ENGELL, A. D. and COHEN, J., «The Neural Bases of Cognitive Conflict and Control Immoral Judgment», cit., 398; V. TIBERIOUS, *Moral psychology. A Contemporary Introduction* (Routledge, New York, 2015), p. 194.

[9] GRACIA, J., «¿Incurre la teoría del proceso dual del juicio moral de Joshua Greene en falacia naturalista?», *Pensamiento* 72/273, (2016), pp. 809-826.

[10] GREENE, J., *Moral tribes*, cit., p. 237.

[11] CUSHMAN, F. and GREENE, J., «Finding faults: How moral dilemmas illuminate cognitive structure», *Social Neuroscience*, 7/3 (2012) 270 and GREENE, J., *Moral tribes*, cit., p. 217.

only the harm that is planned as a means to an end[12], but not the secondary effects deriving from those actions[13]. The emotional process does not plan actions beyond the main purpose of the action[14]. The planning of complex actions is specific to the cognitive process. Hence, two cognitive systems exist as the sources of two kinds of moral judgement.

Nevertheless, emotional and cognitive processes do not always function separately. For Greene, there is a connection, as demonstrated by certain dilemmas, such as that of the crying baby. In these cases, although the contact is personal, significant activity is produced in the cognitive regions of the brain. This is because the subject observes that the consequence of not killing the baby is high-cost (the death of the mother, the baby, and all the hidden companions). Hence, the cost-benefit analysis impedes the activation of the emotional alarm[15]. In this sense, cognitive processes are able to compete with emotional ones in order to cause personal harm when the expected benefits of the harm outweigh the harm caused.

However, in the same way, the automatic mode also influences the manual mode. This does not consist merely of planning actions and making a cost-benefit calculation of the consequences, allowing the correct decision to be reached in complex circumstances. There is an additional function: that of rationalisation. Supported by earlier studies[16], Greene claims that people are confabulators, inasmuch as we require a rational explanation for our actions. This also applies to our moral behaviour, and specifically to moral judgements. Following Haidt on this point[17], Greene indicates that when people intuit whether or not something is correct, the cognitive process constructs a rational *post hoc* justification to fill in the gaps as to why this purely intuitive judgement is correct.

For Greene, this confabulatory process is characteristic of deontological philosophy. Deontology constructs rational justifications for intuition that is not moral in nature, but which stems from adaptive impulses developed over the course of evolution. For Greene, this is psychology hidden behind deontology, undermining the normative value of this philosophy in contrast to utilitarianism[18]. The philosophy of utilitarianism does indeed stem from reason and an evaluation of objective factors, such as an increase in wealth as

---

[12]   For example, throwing the man onto the track to stop the train in the scenario where the subject and the obese person are on the track (footbridge case).

[13]   GREENE, J., *Moral tribes*, cit., pp. 223-224.

[14]   It is understandable that automatic mode does not take into account secondary effects, given that they can be multiple, and it is not adaptive for a person, each time they perform an action, to have to reflect on the possible plans of action and consciously choose one.

[15]   GREENE, J., «The secret joke of Kant's soul», cit., p. 45.

[16]   GAZZANIGA, M. S. and LEDOUX, J. E., *The integrated mind*. (Plenum, New York, 1978); WILSON, T. D., *Strangers to ourselves: Discovering the adaptive unconscious*, (Harvard University Press, Cambridge, 2002).

[17]   GREENE, J., *Moral tribes*, cit., p. 300.

[18]   GREENE, J., «The secret joke of Kant's soul», cit., p. 40.

a result of one policy as opposed to another[19]. Thus, for Greene, there is both an appropriate and inappropriate way to use the cognitive process.

2. CRITIQUES

Numerous normative critiques have been made of the dual process model of moral judgement, among which the following are noteworthy: those emphasising the inability of the theory to take into account deontology[20]; and those underlining the impossibility of drawing normative conclusions from the descriptive approach typical of the neuroimaging techniques used[21]. Here, I present additional criticisms, which can be made at the methodological level, since the objective is to determine whether the dual process model constitutes a suitable methodology for studying moral judgement. Specifically, I analyse the extent to which the use of moral dilemmas and other hypothetical scenarios can be an adequate tool to explain the way we form moral judgements. I first analyse the types of dilemmas and hypothetical scenarios used in the various dual process theories, and then tackle the question of whether the use of moral dilemmas can, in itself, be an adequate tool to account for moral cognition.

2.1. *Methodological tautology*

The first criticism to be levelled is that the methodological approach used in the dual process model of moral judgement leads, in itself, to the thesis that moral judgement has two different sources in subjects[22]. More specifically, the conclusions reached by the various dual process theories of moral judgement are, in reality, a consequence of the different methodological approaches used. For example, the disparities between the theories of Haidt and Greene on the nature of moral judgement are a result of the different types of scenarios presented to the subjects in order to evaluate their responses. Thus, depending on the prototype scenarios analysed, the result of the studies will be a model of moral judgement that places greater emphasis on either reason or emotion.

Indeed, beginning with Haidt, the theory of social intuitionism attributes more importance to intuition than to reason in the formation of moral judgement. This is because of the method Haidt uses, characterised by three

---

[19]   GREENE, J., *Moral tribes*, cit., p. 304.

[20]   DEAN, R., «Does neuroscience undermine deontological theory?», *Neuroethics* 3/1 (2010) 43-60; GRACIA, J., «¿Conduce la neurociencia a una naturalización del deontologismo? "Juicios morales deontológicos" en perspectiva neuroética», *Pensamiento* 73/276, (2017), pp. 581-586.

[21]   BERKER, S., «The normative insignificance of neuroscience», *Philosophy and Public Affairs* 37/4, (2009), pp. 293-329.

[22]   MONIN, B., PIZARRO, D. A. and BEER, J. S., «Reason and emotion in moral judgment: different prototypes lead to different theories», in K. VOHS, D. (ed.). *Do emotions help or hurt decision making: a hedgefoxian perspective.* (Russell Sage Foundation, New York, 2007), pp. 219-244.

fundamental aspects. Firstly, Haidt does not present his subjects with dilemmas, but rather with a series of extreme, imaginary situations experienced by third persons (the family who eat their dog, the twins who commit incest, etc.). Secondly, therefore, Haidt puts the study subject in the shoes of a third person (subject observer) with regard to what another party does. Finally, his study asks the subject to morally evaluate the behaviour of that third person. Given these conditions, he limits himself to evaluating the reactions elicited in the study subject by the actions of another person. This explains the description Haidt gives of moral judgement as «the evaluation (good vs. bad) of the actions or character of a person»[23].

However, if we limit moral judgement to a reaction to the (extreme) action of a third person, emotions play the main role in the formation of moral judgement[24]. This is logical, since reducing moral judgement to a mere reaction to a specific scenario assumes that the scenario is separated from its global context, and when a scenario is separated from the context that gives it true meaning, then the possibility of including reason in the evaluation of the action is eliminated[25]. Moreover, judgement will not be directed by reason, but by cognitive bias and intuition forged through experience[26]. Most importantly, by removing reason, Haidt is actually studying reaction, rather than moral evaluation[27]. In short, according to social intuitionism, moral judgement consists of intuitive reaction (rapid, unconscious and effortless) to the actions of others.

For its part, the proposition of Greene's dual process theory is the clearest example of the influence of a methodological approach in obtaining specific results. Greene aims to articulate an intermediate model, somewhere between those of Haidt and Kohlberg[28]. He does this by recourse to dilemmatic scenarios that place the subjects in positions that Greene himself recognises

---

[23]   HAIDT, J., «The emotional dog and its rational tail», cit., p. 817.

[24]   Nevertheless, as we have seen, Haidt acknowledges the causal role of reflection in the formation of moral judgements by the person concerned. This would occur in a minority of cases, when no biases were present in the formation of the judgement, specifically in process 5 (process of reasoned judgment). Strangely, however, this process, unlike process 1, is characterised by placing the subject in the first person, evaluating the situation not as an observer, but as the protagonist.

[25]   HELION, C. and PIZARRO, D. A., «Beyond Dual-Process: The interplay of Reason and Emotion in Moral Judgment», in CLAUSEN, J. and LEVI, N. (eds.) *Handbook of Neuroethics* (Springer, Oxford, 2015) cit., p. 113.

[26]   This becomes more evident if the study uses extreme situations that will arouse revulsion or disgust, as Haidt's studies do. See HAIDT, J., HOLLERT, S. H. and DIAS, M., «Affect, culture and morality, or is it wrong to eat our dog?», *Journal of Personality and Social Psychology*, 65/4 (1993), pp. 613-628.

[27]   MONIN, B., PIZARRO, D. A. and BEER, J. S., «Deciding versus reacting: Conceptions of Moral» «Judgment and the Reason-Affect Debate», *Review of General Psychology* 11/2 (2007) 99-111; CORTINA, A., *Neuroética: presente y futuro*, in CORTINA, A. (ed.). *Guía Comares de neurofilosofía práctica*. (Granada: Comares, 2012), p. 20.

[28]   GREENE, J., NYSTROM, L. E., ENGELL, A. D. and COHEN, J., «The Neural Bases of Cognitive Conflict and Control in Moral Judgment», cit., p. 389.

to be quite distinct. Even though Greene makes the subject the first person in each dilemma[29], the selected scenarios vary. Some dilemmas have a «personal» nature and are characterised by provoking emotional responses (such as the footbridge case). Other dilemmas are impersonal and provoke responses that are less emotional and have a greater cognitive load, such as the switch case, in which the subject is next to the tracks and must decide whether or not to pull the lever to divert the train[30]. In other words, Greene places the subjects in scenarios created deliberately to elicit a specific type of response, which will be either emotional or cognitive, linked to the activation of different regions of the brain. He even acknowledges the possibility of creating a situation that is *a priori* emotional in order to convert it into one that is rational, such as when the train in the footbridge case is said to be carrying an atomic bomb[31]. Situations like this impede the awakening of the «alarm system» and will generate a rational judgement.

In this sense, if psychologists in their laboratories create *ex profeso* scenarios, either to provoke emotional reactions in the subjects, or to allow them the possibility of exercising reason, then we must conclude that their results are pure tautology: when the scenarios provoke emotional reactions, the subjects give an intuitive, System 1 judgement, and only when the scenarios allow the subject to reason, by placing them in the first person, facing impersonal situations, does the subject form deliberate judgements using System 2[32]. If an analysis uses scenarios that provoke emotional reactions, one will conclude that the judgements are mostly intuitive (Haidt). If one favours scenarios where the subject adopts a reflective role, one will infer that the judgements are cognitive (Kohlberg)[33]. Finally, anyone combining the two scenarios will say that some judgements are emotional and others cognitive (Greene). Hence, it is in fact the selected method itself that leads research towards conclusions on the nature of moral judgement. This fact should at least cause the discipline of moral psychology to reflect on one question: to what extent does the very existence of different methodologies affecting the influence of System 1 or System 2 (and which therefore produce different results) undermine the credibility of this academic discipline?

---

[29] GREENE, J., SOMMERVILLE, R. B., NYSTROM, L. E., DARLEY, J. M. and COHEN, J. D., «An fMRI Investigation of Emotional Engagement in Moral Judgment», cit., pp. 2.106.

[30] GREENE, J., NYSTROM, L. E., ENGELL, A. D. and COHEN, J., «The Neural Bases of Cognitive Conflict and Control in Moral Judgment», cit., p. 389.

[31] GREENE, J., «The secret joke of Kant's soul», cit., 45 and 65. Concerning the different versions of the trolley problem see also EDMONDS, D. E., *Would you kill the fat man?* (Princeton University Press, Princeton,2014).

[32] PAVA, M. L., «The exaggerated moral claims of evolutionary psychologists», *Journal of Business Ethics*, 85/3(2009) 391-401. On the tautology of neuroscientific methodology (in this case of Greene's) see also Guy KAHANE «Intuitive and counterintuitive morality», in Justin D'ARMS and Daniel JACOBSON (eds.) *Moral psychology and Human Agency*: *Philosophical Essays on the Science of Ethics*. (Oxford University Press, Oxford, 2014), pp. 9-39.

[33] It is well-known that Kohlberg is a proponent of the cognitivist paradigm and, as such, is therefore not involved in the dual process theory.

2.2. *The problematic nature of moral deliberation*

The methodological problems of the dual model do not end here, however. Recourse to dilemmatic situations, used by authors such as Greene, represents a methodological approach incapable of gaining a proper understanding of the way in which people form moral judgements. These dilemmas represent scenarios created artificially to address a few variables, preventing the subject from addressing other circumstances that might influence their judgement. The aim is to represent a tragic situation to which there are only two possible and incompatible solutions. The subject must choose one while rejecting the other; there is no room to suggest alternatives that might reduce the harm caused by either of the options presented[34]. It is no accident that the word «dilemma» comes from the Greek *lemma* meaning «that which one chooses», and the prefix *dis*, meaning «two». Thus, «dilemma» means «to choose between two»[35].

Yet the dilemmatic approach does not adequately represent the way in which individuals morally judge reality. The dilemmas take into account only a few variables and are limited to studying the subjects' reactions to those variables. However, not all the dimensions of practical reason are technically measurable. In order to change our moral judgement of something, it is not enough simply to receive a quantifiable emotional impulse. We must recognise the moral value of that newly apparent variable. In order to do so, the moral significance of that variable must be evaluated in context[36]. In other words, the emotional impulse may constitute almost a neuronal basis for our change in judgement, but it is not its foundation[37].

Above all, the subjects make moral valuations based on their evaluation of the circumstances present in the case. As Aristotle showed, moral judgements are made using *phrónesis* or practical wisdom; that is, on the basis of reasoned valuation of the circumstances. Depending on the elements to be considered, either one judgement or the other will be made. In the same way, a change in the circumstances to be taken into account will change the judgement. Moreover, our reaction to emotional impulses is always moderated by our beliefs[38]. This is because moral judgement is always made within a considered rational context.

In particular, a key aspect individuals appraise when making moral judgements is the aim of the action. They judge not only the result of specific

---

[34] For example, either push the obese person, who will die stopping the train, or do not push them, in which case five other people will be run over by the train.

[35] Gracia, D., «La deliberación moral. El papel de las metodologías en la ética clínica», in Feito, L., Gracia, D. and Sánchez, M. (eds.). *Bioética: el estado de la cuestión*. (Tricastela, Madrid, 2000), pp. 101-153.

[36] Saltzstein, H. D., and Kasachkoff, T., «Haidt's moral intuitionist theory: A psychological and philosophical critique», *General Review of Psychology* 8/4 (2004), p. 276.

[37] Cortina, A., *Neuroética y neuropolítica* (Tecnos, Madrid, 2011), p. 47.

[38] Pizarro, D. A. and Bloom, P., «The intelligence of moral intuitions: Comment on Haidt (2001)», *Psychological Review*, 110/1(2003), p. 194.

actions, but also whether or not the person carrying out the action was acting intentionally. Because only insofar as we can attribute intentionality to the subject of the action can we say their action is moral or immoral, and this requires, in addition, the exercise of reflection on the context of the action. This is why Aristotle distinguishes between voluntary, involuntary, and non-voluntary actions[39].

This opening up of the subject to the consideration of different elements in moral assessment reflects the fact that moral judgement is not dilemmatic in nature but «problematic»[40]. In other words, in reality people do not face laboratory-based dilemmas but moral problems. Problems are always open to some extent, and their solution is not pre-ordained. Problems exist because we have not yet found a solution to them, and there is no guarantee that a solution will be found. The answer to a problem does not come from choosing between two given options. The answer must be sought in light of reflection on the elements present in the case. Moreover, in contrast to dilemmas with few variables, in real life a fuller knowledge of reality is needed in order to find the best solution to problems, because the solution will be that which the subject considers best-suited to the circumstances they have taken into account in their valuation. Reality is rich in nuance and cannot be restricted to a few variables, still less so if those variables have been dissected in a laboratory.

For example, if the footbridge case were to occur in reality, the person would not be presented with a dilemma, but with a problem. Firstly, there might be various motivations leading the person to make a decision. For example, the decision whether or not to throw the obese person onto the track would not be determined by physical contact with the intent of harm. Other variables, not considered in Greene's dilemma, would be influential, such as the person's fear of being accused of murder, the fact the person might be weak and fearful of the obese person turning and throwing them off first, or, perhaps, available knowledge about the obese person or the workers on the track. All these are factors the subject may take into account before reaching a decision[41]. Above all, it is untrue that the only available alternatives are to either throw the obese person off, using them as a means of saving five lives, or not throw them, thus allowing the other five to die. Other intermediate options are available. It is perfectly possible for the person and the obese man to warn the persons on the track of the approaching danger, by waving or shouting in unison.

---

[39]   ARISTÓTELES, *Ética a Nicómaco,* (Gredos, Madrid, 2000) 111a 20.

[40]   CORTINA, A., «Neuroética: ¿Las bases cerebrales de una ética universal con relevancia política?» *Isegoría. Revista de Filosofía Moral y Política* 42 (2010) 144; GRACIA, D., «La deliberación moral. El papel de las metodologías en la ética clínica», cit., 101-153; PALLARÉS DOMÍNGUEZ, D. V., «Críticas y orientaciones para el estudio en neuroéica», *Recerca. Revista de pensament i anàlisi* 13 (2013), p. 98.

[41]   PAVA, M. L., «The exaggerated claims», cit., p. 397.

For this reason, the neuroscientific method does not adequately reflect the way in which people make moral valuations in real life, because they do so within a context, responding to variables presented to the subject. Not even Greene himself considers the possibility that the subjects of his studies might find alternative solutions to those he suggests (throwing the obese man or not throwing him). Nevertheless, as I have just shown, not only is it possible to find alternative forms of action, but it is also the most normal thing to do. Because when making moral valuations, people face problems with no pre-set solutions, and the objective is to find one based on the elements the subject considers to be relevant in the case. It would therefore seem reasonable to conclude that this methodology of moral psychology prevents the discipline from providing an adequate explanation of moral valuation.

3. CONCLUSION

This analysis of the methodology used in the field of moral psychology reveals that the division of moral cognition into System 1 and System 2 is an inadequate means of accounting for the way in which people form moral judgements. On the one hand, this is because the method is, in itself, tautological, as the conclusions of each theory reflect the reactions caused by the scenarios chosen to analyse the judgements. But fundamentally, the dual process model is a myopic approach to the formation of moral judgements in reality. Dilemmas are characterised by considering only a few, artificially created, variables, which the researcher changes at will. In contrast to this, real life moral judgements are the consequence of a reflective process in which the person weighs up various aspects of reality, which are impossible to include in dilemmatic formulations.

Moreover, the dilemmatic method splits moral judgement into two sources, System 1 and System 2. This approach is incapable of recognising that moral deliberation is holistic in nature. We cannot distinguish between one intuitive part and another, controlled by practical reason, because practical reason includes both. Indeed, we make moral valuations by applying discernment, which allows us to acknowledge certain aspects of reality as being of value, while others are not. However, this recognition of value is not involved in the calculation of reason, as seems to be understood with System 2. As Cortina shows, reason has a cordial dimension that allows moral value to be understood on the basis of certain moral emotions, such as compassion or indignation[42]. This idea of cordial reason allows, moreover, for the integration of the two dimensions of cognition that have been revealed by neuro-ethics. It is not

---

[42]   CORTINA, A., *Ética de la razón cordial*. (Nobel, Oviedo, 2007) 192; CORTINA, A., *Neuroética y neuropolítica cit.*, 144; CORTINA, A., *¿Para qué sirve realmente la ética?* (Paidós, Barcelona, 2013), p. 122.

necessary, therefore, to split the human mind into two cognitive systems. On the contrary, the way forward should be to integrate reason and emotion, because only in this way will we be better able to recognise situations of injustice, and demand their resolution.

University of Valencia (Spain)   PEDRO JESÚS PÉREZ ZAFRILLA.
Department of Philosophy.
p.jesus.perez@uv.es