era of democratic backsliding and authoritarian resurgence (Inglehart & Norris, 2017). Recognizing conflicts between our moral intuitions and liberal ideals, and refining our understanding of the situational and ecological contexts in which puritanical intuitions are more readily indulged, may improve our grasp of the conditions that enable our authoritarian impulses and those that reign them in.

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References

Barclay, P. (2013). Strategies for cooperation in biological markets, especially for humans. Evolution and Human Behavior, 34(3), 164–175. https://doi.org/10.1016/j.evolhumbehav.2013.02.002

Celniker, J. B., Gregory, A., Koo, H. J., Piff, P. K., Ditto, P. H., & Shariff, A. F. (2023). The moralization of effort. *Journal of Experimental Psychology: General*, 152(1), 60– 79. https://doi.org/10.1037/xge0001259

Fukuyama, F. (1989). The end of history? *The National Interest*, 16, 3–18. http://www.jstor.org/stable/24027184

Geoffroy, F., Baumard, N., & André, J. B. (2019). Why cooperation is not running away. Journal of Evolutionary Biology, 32(10), 1069–1081. https://doi.org/10.1111/jeb.13508Inglehart, R., & Norris, P. (2017). Trump and the populist authoritarian parties: The silent revolution in reverse. Perspectives on Politics, 15(2), 443–454. doi: 10.1017/ \$1537592717000111

Janoff-Bulman, R., Sheikh, S., & Hepp, S. (2009). Proscriptive versus prescriptive morality: Two faces of moral regulation. *Journal of Personality and Social Psychology*, 96(3), 521–537. https://doi.org/10.1037/a0013779

Markovits, D. (2019). The meritocracy trap: How America's foundational myth feeds inequality, dismantles the middle class, and devours the elite. Penguin.

A broader theory of cooperation can better explain "purity"

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Abstract

Self-control provides one cooperative explanation for "purity." Other types of cooperation provide additional explanations. For example, individuals compete for status by displaying high-value social and sexual traits, which are moralised because they reduce the mutual costs of conflict. As this theory predicts, sexually unattractive traits are perceived as morally bad, aside from self-control. Moral psychology will advance more quickly by drawing on all theories of cooperation.

"Purity" - a heterogeneous set of phenomena encompassing health, sexuality, and self-control - has been an anomaly for

cooperative theories of morality (Gray, DiMaggio, Schein, & Kachanoff, 2022). Hence, Fitouchi et al. have done a great service in providing a cooperative explanation.

According to their account, many aspects of "purity" can be understood as cues of self-control, and self-control is moralised because it predicts a person's likelihood of reciprocating in a social dilemma (whereas *impurity* can be understood as a cue of *a lack of* self-control, which predicts a person's likelihood of *cheating* in a social dilemma). We agree.

However, social dilemmas are not the only type of cooperative problem, and reciprocity is not the only solution. There are other types of cooperation (kin altruism, mutualism, conflict resolution), that explain other types of morality (family values, solidarity, heroism, deference, fairness, and property rights) (Curry, 2016; Curry, Mullins, & Whitehouse, 2019). These other types of cooperation may explain other aspects of "purity" that are not explained by Fitouchi et al.'s self-control theory.

Take conflict resolution. Organisms often come into conflict over food, territory, mates, and other resources (Huntingford & Turner, 1987). Contestants have a common interest in minimising the mutual costs of conflict – time, energy, injury – hence these interactions are modelled as non-zero-sum hawk–dove games (Maynard Smith & Price, 1973). One strategy for minimising costs is to engage in "ritual contests": contestants display conflict-winning traits (that indicate their probability of winning the conflict were it to escalate); contestants with inferior traits defer to those with superior traits, and withdraw from the contest (Maynard Smith, & Parker, 1976). In stable social groups, these contests lead to the formation of dominance hierarchies (Preuschoft & van Schaik, 2000).

Many organisms, including humans, engage in such contests and form hierarchies (Mazur, 2005). The traits humans display in contests include: strength, health, beauty, bravery, generosity, intelligence, skill, industriousness, and coalition size (Buss et al., 2020; Gintis, Smith, & Bowles, 2001; Riechert, 1998). Emotions are important regulatory mechanisms in these contests. For example, people are *proud* of, and motivated to display, superior traits; and they are *ashamed* of, and motivated to conceal, inferior traits (Sznycer et al., 2016, 2017). (One function of shame, then, is to motivate people to withdraw from contests they have little chance of winning.)

This conflict-resolution theory predicts that these superior and inferior traits will be moralised because they help to solve a cooperative problem – they help to minimise or forestall conflict – quite apart from any other function they might perform (Curry, 2007). This theory predicts that superior traits will be considered morally good – honourable virtues, worthy of respect. And inferior traits will be considered morally bad – dishonourable vices that *degrade* those who possess them by lowering their social value in the eyes of others.

This theory can explain why, for example, cues of high and low mate-value have been considered morally good and bad, "pure" and "impure." People compete for mates by signalling cues of high mate-value that are attractive to the opposite sex (such as fertility, fidelity, chastity, beauty, industry), and concealing cues of low mate-value that are unattractive (such as infertility, infidelity, promiscuity, poor health, a history of failed relationships). Sexually attractive traits will be considered morally good, sexually unattractive traits will be considered morally bad.

As an initial test of this hypothesis, we asked an online sample in the United States (MTurk; n = 98; 66% male; mean age = 33 years) to rate the degree to which 20 "impure" traits (including promiscuity, masturbation, laziness, and drinking alcohol): (1) indicate a lack of self-control; (2) are sexually unattractive; and (3) are morally bad (1–100). We regressed "moral badness" onto "lack of self-control" and "sexual unattractiveness" using a mixed model, with traits nested within participants. (All materials, data and analysis are available on OSF: https://osf.io/g52w6/.)

Both "lack of self-control" (β = 0.26) and "sexual unattractiveness" (β = 0.25) predicted the "moral badness" of the traits (marginal R^2 = 0.24). The two predictors together explained more variance in moral badness than either do alone.

These results support the *self-control* theory; and they also support the *conflict-resolution* theory. They show that a *broader* cooperative theory of morality can better explain why traits are moralised. Future research should develop and test predictions from all available theories of cooperation when attempting to explain moral psychology. Advancing in this way, cooperation may provide a comprehensive explanation of moral phenomena, including those previously labelled "purity."

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References

Buss, D. M., Durkee, P. K., Shackelford, T. K., Bowdle, B. F., Schmitt, D. P., Brase, G. L., ... Trofimova, I. (2020). Human status criteria: Sex differences and similarities across 14 nations. *Journal of Personality and Social Psychology*, 119(5), 979–998. https://doi.org/10.1037/pspa0000206

Curry, O. S. (2007). The conflict-resolution theory of virtue. In W. P. Sinnott-Armstrong (Ed.), Moral psychology (Vol. I, pp. 251–261). MIT Press. https://mitpress.mit.edu/books/moral-psychology-volume-1

Curry, O. S. (2016). Morality as cooperation: A problem-centred approach. In T. K. Shackelford & R. D. Hansen (Eds.), *The evolution of morality* (pp. 27–51). Springer. https://doi.org/10.1007/978-3-319-19671-8_2

Curry, O. S., Mullins, D. A., & Whitehouse, H. (2019). Is it good to cooperate? Testing the theory of morality-as-cooperation in 60 societies. *Current Anthropology*, 60(1), 47-69. https://doi.org/10.1086/701478

Gintis, H., Smith, E. A., & Bowles, S. (2001). Costly signaling and cooperation. Journal of Theoretical Biology, 213, 103–119. https://doi.org/10.1006/jtbi.2001.2406

Gray, K., DiMaggio, N., Schein, C., & Kachanoff, F. (2022). The problem of purity in moral psychology. Personality and Social Psychology Review, 0(0), 108886832211247 41. https://doi.org/10.1177/10888683221124741

Huntingford, F. A., & Turner, A. K. (1987). Animal conflict. Chapman & Hall.

Maynard Smith, J., & Parker, G. A. (1976). The logic of asymmetric contests. Animal Behaviour, 24, 159–175. https://doi.org/10.1016/S0003-3472(76)80110-8

Maynard Smith, J., & Price, G. R. (1973). The logic of animal conflict. *Nature*, 246, 15–18.

Mazur, A. (2005). Biosociology of dominance and deference. Rowan & Littlefield.

Preuschoft, S., & van Schaik, C. P. (2000). Dominance and communication: Conflict management in various social settings. In F. Aureli & F. B. M. de Waal (Eds.), *Natural conflict resolution* (pp. 77–105). University of California Press.

Riechert, S. E. (1998). Game theory and animal contests. In L. A. Dugatkin & H. K. Reeve (Eds.), Game theory and animal behavior (pp. 64–93). Oxford University Press.

Sznycer, D., Al-Shawaf, L., Bereby-Meyer, Y., Curry, O. S., De Smet, D., Ermer, E., ... Tooby, J. (2017). Cross-cultural regularities in the cognitive architecture of pride. Proceedings of the National Academy of Sciences, 114(8), 1874. https://doi.org/10. 1073/pnas.1614389114

Sznycer, D., Tooby, J., Cosmides, L., Porat, R., Shalvi, S., & Halperin, E. (2016). Shame closely tracks the threat of devaluation by others, even across cultures. *Proceedings* of the National Academy of Sciences, 113(10), 2625–2630. https://doi.org/10.1073/ pnas.1514699113

Moralistic punishment is not for cooperation

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Abstract

The theory proposed by Fitouchi et al. misses the core of puritanical morality: Cruel punishment for harmless actions. Punishment is mutually harmful, unlike cooperation which is mutually beneficial. Theories of moral judgment should not obscure this fundamental distinction.

One pleasant Sunday, you gather firewood in the morning, discuss whether God exists over lunch, and later, under the stars, share a romantic kiss with your spouse in public. When word of these misdeeds gets out, the Puritans bind your hands and feet, walk you to the gallows, and put a noose over your head in front of a crowd. Then they whip you until your flesh is torn and bleeding. Then they bring a hot iron to bore a hole in your tongue.

Under Puritan rule in seventeenth-century Massachusetts, you committed several crimes and received an ordinary punishment (Merrill, 1945). But why do these tormentors punish harmless actions so cruelly?

According to Fitouchi et al., your tormentors want to cooperate. The authors propose that "puritanical morality is no exception to the cooperative function of moral cognition." Burning a hole in your tongue is a Puritan's way of saying they want to cooperate with you. The hot iron is meant to help you control yourself, particularly in obedience to Puritan rules.

We do not think the authors' explanation works. We accept their first point that cooperation requires self-control. So do many other social behaviors, including obedience to authority, loyalty to coalitions, stealth warfare – even skillful lying, theft, and murder. Cooperation is not special but it depends on self-control too.

We partly accept their second point that puritan offenses show impulsiveness. Some do and some do not. Drugs obviously impair self-control and cooperation. On the other hand, actions such as masturbation and oral sex could be impulsive or deliberate, and might appear impulsive only to those who moralize them. Homosexuality seems unconnected to self-control, yet it is a frequent target of puritanical wrath. Using contraception is rather controlled and yet still condemned by sexual puritans like the Catholic Church. Other offenses such as blasphemy, atheism, and gathering wood on Sunday are more remote yet from self-control.

However, the authors' theory does not explain the core of puritanical morality – punishment. Despite the reference to "disciplining" in the title, they barely discuss punishment, using the words *punish* and *punishment* only three times in the article. The authors' main points, cooperation and self-control, do not