

Affect in Public Choice

Frans van Winden

Emeritus Professor

Amsterdam School of Economics

University of Amsterdam

f.a.m.vanwinden@uva.nl

ABSTRACT

Key to the methodology of Public Choice is the application of the same approach for the explanation and prediction of political behavior as standard economic theory applies to the study of behavior in the market domain. This approach assumes rational and selfish behavior (*homo economicus*), and typically focuses on the individual (methodological individualism). However, important political phenomena turn out to be difficult to explain this way. A prime example regards collective action. Even though people are frequently observed to participate in large-scale elections, political demonstrations like tax revolts or, more generally, the voluntary provision of a public good – that benefits a group of people but where the impact of an individual's contribution is often too small to make it beneficial from a selfish point of view – a *homo economicus* would be predicted to abstain. Referring to controlled, experimental and model-based evidence I will argue here in contrast that *affect* and, in particular, *affective relationships* (or bonding) between people are important motivators of actual human behavior in such cases, challenging the *homo economicus* assumption. The importance of affective relationships, furthermore, motivates to question the nature of the relevant agent in Public Choice issues, as it seems to plead for a greater role of a group (affective network) frame of reference, in comparison to the traditional focus on the individual.

Acknowledgment

Helpful comments by an anonymous reviewer are gratefully acknowledged.

May, 2023

1. Introduction

Key to the methodology of Public Choice is the application of the same approach for the explanation and prediction of political behavior as standard economic theory applies to the study of behavior in the market domain.¹⁻³ This approach assumes rational and selfish behavior (*homo economicus*), and typically focuses on the individual (methodological individualism). However, important political phenomena turn out to be difficult to explain this way. A prime example regards collective action. Even though people are frequently observed to participate in large-scale elections, political demonstrations like tax revolts or, more generally, the voluntary provision of a public good – that benefits a group of people but where the impact of an individual's contribution is often too small to make it beneficial from a selfish point of view – a *homo economicus* would be predicted to abstain.⁴ Referring to controlled, experimental and model-based evidence I will argue here in contrast that *affect* and, in particular, *affective relationships* (or bonding) between people are important motivators of actual human behavior in such cases, challenging the *homo economicus* assumption. The importance of affective relationships, furthermore, motivates to question the nature of the relevant agent in Public Choice issues, as it seems to plead for a greater role of a group (affective network) frame of reference, in comparison to the traditional focus on the individual. For later reference, I start with some theory.

Affect is a general term for emotions (typically short-lived body-mind perturbations), moods (more enduring than emotion), sentiments (attitudes prompted by feelings), or feelings (conscious experiences). The focus here will be on emotions and sentiments related to affective relationships. More specifically, an emotion occurs when an event is appraised as relevant to an individual's interests. Emotions have a direct hedonic quality, and involve autonomic (physiological and bodily) processes that cannot be directly controlled. Central to an emotion is an action tendency, whereas deviations from expectations or set-points form an important trigger.⁵⁻⁷ In an *affective relationship* an individual cares for – attaches a weight to the utility (welfare) of – another individual. Characteristic for such relationships is that they are dynamic, develop via emotional experiences in social interactions, and generalize across contexts (spread) and time (persistence). Existing economic models typically miss out on one or more of these characteristics, particularly, by assuming fixed social preferences (utility weights). An exception is the *Affective Tie Mechanism* model (henceforth, ATM model).^{8,9} In this model the weight attached to an interaction partner's utility – representing the affective relationship or tie – changes through *impulses*, that is, interaction experiences determined by the interaction partner's behavior compared to a reference behavior. Impulses trigger affective processes at the autonomic level (beyond direct control). Given the thus adapted weight attached to the other's utility, the standard assumption is maintained that (extended, total weighted) utility is maximized. Whereas a positive weight – or tie value – represents a positive (liking) relationship, a negative tie value stands for a negative (antagonistic) relationship. Moreover, ties developed in a certain context are assumed to influence – via generalization – the weight an individual attaches to the utility of a stranger (not interacted with before) in that same context as well as strangers in a new context to the extent these contexts are perceived as similar; this weight is labeled a *generalized tie value* (GTV). The well-known sociopsychological measure of *social value orientation* (SVO) – measuring the distributional preferences of individuals by having them choose between alternative payoff allocations to themselves and an unknown, generalized other – can be seen as a practical measure of an individual's GTV. Substantial evidence coming from economic experiments as well as neuro-psychology and evolutionary biology appears to support the ATM model (see also below).¹⁰

Interestingly, well-known precursors in (political) economics like Spinoza, Hobbes, Bentham, Smith, Edgeworth, Marshall, and Schumpeter already suggested the importance of emotions and

sentiments. More recently, as further detailed below, an increasing number of studies and several surveys have provided empirical support to that effect.^{11,12} However, lack of adequate data and control of relevant factors has thwarted field studies regarding the role of emotions. For evidence, I will rely mostly on recent lab experiments, therefore. Lab experimentation is widely regarded as an important complementary methodology for the social sciences, allowing for a controlled environment and replication. Participants in lab experiments perceive their behavior as relevant, experience real emotions, and take decisions with real consequences.¹³ Lab experimental results can be stable¹⁴ and robust across participant pools.¹⁵ Moreover, they have been found to show similarity with field data in various contexts, like corruption¹⁶ and tax compliance¹⁷, suggesting external validity, which makes them potentially policy relevant (more generally on this issue, see 18).

Below, I will concentrate attention on the following important issues in Public Choice: taxation, collective action, rent-seeking and political contests. In view of the available evidence, furthermore, emotions will be focused at that are directly related to the relevant decision process – so-called integral emotions, like regretting a choice – in contrast with incidental emotions that are more general and should not count objectively or normatively for the decision at hand.^{19,20} An example of the latter would be fear triggered by an impending war or a general distrust in political institutions.

2. Taxation

Taxation concerns forced payments to a tax authority (or taker). In tax theory, also subsidies or tax expenditures (as negative taxes) and regulation (taxation by regulation) are included. More generally, one could argue that it involves the coercive control of people's capabilities or life space (including such components as freedom of speech). Suggestive examples of emotional responses to taxation in the form of tax revolts or otherwise abound.^{21,11} Although such protests appear to be largely driven by emotions, part of it, such as protest leadership, may be based on calculative strategic behavior (see also below).²¹⁻²³ Because of the material and non-material (psychological) costs involved it is important to learn the driving factors of such emotional responses to taxation, which may run from negative (avoidance/evasion ('flight') and resistance ('fight')) to positive (compliance or even active support). As further discussed below, behavioral predictions by standard expected utility theory fail in this respect, due to its neglect of emotions.

More specifically, regarding types of emotions, someone subject to taxation may experience anger in case of an excise tax (Adam Smith referred to 'vexation' as a kind of additional expense²⁴) but joy in case of a tax return or a subsidy (negative tax). Furthermore, triggered by social norms, a taxpayer may experience or anticipate guilt or shame when evading taxes (or pride in case of compliance), while a tax authority may feel ashamed when confronted with enraged taxpayers. Anticipating such emotions – or moral sentiments – may inhibit the related behavior because of the expected hedonic cost.^{25,26} Feelings are more generally regarded as a source of morality²⁷⁻³⁰ If the underlying brain mechanisms are underdeveloped in people³¹ or if the relevant norms are insufficiently internalized via the sanctions of (valued) educators these emotions cannot bite. In that event people will feel less inhibited to evade taxes or to practice excessive (grabbing hand) taxation.

As discussed above, for controlled evidence concerning the role of emotions and affective relationships in a context of taxation one has to rely mostly on laboratory experiments, to which I now turn.

The Power-To-Take (PTT) game captures a simple case of appropriation that is arguably related to taxation.³² In the basic version of this two-player game one player – the taker – can claim any part

(including 0%) of the resources of another player – the responder – who can subsequently destroy any part of her or his *own* resources (players start out with equal resources). A homo-economicus responder would be willing to accept any take rate, because any destruction will lead to fewer (or at best the same) after-the-take resources, inducing a homo-economicus taker to claim everything. In sharp contrast, experimental findings show the following. On average, takers claim about 60%, while responders destroy about 20%. And, remarkably, destruction is not only (positively) related to the take rate, but also (negatively) to the expected take rate. The latter is hard to explain with extant models, where typically the experienced take rate would matter; the more so, because no evidence is found of a relationship with (self-reported) fairness³³, a normative expectation. Emotions offer a natural explanation, though, as the gap between experience and expectation impacts emotional intensity. And, indeed, mediation analysis suggests that the influence of the take rate on destruction is fully mediated by, in particular, anger-type emotions.³⁴ (See also below on the success of the ATM model in predicting destruction in the PTT game.)

Interestingly, if the game is repeated with a new randomly chosen responder, emotions affect the taker's behavior in the new round, where the experience of (no) destruction in the first round appears to be key and fairness beliefs play a role now.³⁵ Not experiencing destruction induces takers to increase their claim to the extent that they report regret. Experiencing destruction, on the other hand, induces them to lower the take rate to the extent that they feel shame and guilt, where the intensity of these emotions is modulated by the difference between their previously chosen take rate and what they consider fair.

Further evidence that emotions matter relates to the following additional findings: (i) sunk-cost of effort in acquiring the resources boosts the emotional arousal (intensity) at destruction, which is likely due to a stronger ego-involvement³⁶; (ii) takers seem subject to a hot-cold empathy gap for not anticipating this effort effect on responders³⁷; (iii) destruction is related to an increase in skin conductance responses (a measure of emotional arousal), which in turn are correlated with self-reported anger (the latter again being related to destruction)³⁸; (iv) increasing the stake size tenfold to an amount equivalent to several weeks of local average net income (in China) does neither significantly affect the take rate nor the destruction rate, and again – as in the other experiments run in various European countries – emotions appear to drive destruction and mediate the impact of the take rate³⁴; and (v) having groups of (three) takers and responders separately discuss and decide does not lead to a different take rate and destruction rate.³⁹

An interesting related finding concerns a modified ultimatum game experiment. In the standard ultimatum game a player (proposer) can make a payoff allocation proposal regarding an amount of money to a second player (responder), and the latter can only accept or reject, in which case both get nothing. In this case, however, the ultimatum game is modified such that the proposer cannot be affected by rejection (only the responder is) and is not informed about the responder's decision. Nevertheless, the results show that responders still reject, where negative emotions are referred to for explanation.⁴⁰

These experiments suggest that an *emotional hazard* exists in taxation that may influence both tax policies and tax compliance. The hazard is that emotional arousal triggered by a tax scheme may reach an intensity inducing behavioral responses leading to additional costs on top of the tax burden (an excess burden), such as through the destruction of a tax base by enraged taxpayers. Thus, emotional responses may lead to direct welfare losses, making standard lump-sum taxation (mimicked in the PTT game) no longer a guaranteed efficient tool. Interestingly, empirical evidence suggests that, more so than electoral outcomes, the threat of emotion-driven political unrest is what makes politicians reluctant to engage in budgetary consolidations.²¹ Furthermore, as discussed

above, the uncertain bite of emotions like shame and guilt – triggered by social norms (like fairness) instilled by valued educators – induces a moral hazard that may affect both tax policies and tax compliance, with potentially substantial consequences for social welfare. Consequently, a better understanding regarding the dynamics of emotional responses to alternative tax schemes would be helpful. Laboratory experimentation can be instrumental in this respect, as it allows the study of the potential effects of policy innovations, without having to implement them.

3. Collective action

The above refers to individual action influenced by emotional responses. Another important theme in Public Choice concerns collective action, where choices are aimed at a good shared by a group – a public good. A sufficiently small individual effect will induce a homo economicus to abstain from contributing (cooperation), creating a free-riding problem for the good's voluntary provision, as may happen with political revolts or electoral support (like voting), for instance.⁴¹ A positive SVO (GTV) and the development of affective ties in repeated interaction can help explain why cooperation in a public good setting is, nevertheless, frequently observed.^{42,43}

This is confirmed by recent experimental studies, providing substantial support for the ATM model.^{9,10,44} Among the main findings are the following. As predicted by this model, interaction impacts one-shot (non-strategic) helping or hurting behavior towards specific others interacted with, mediated by emotions dependent on the success or failure of the interaction. Model estimation, furthermore, suggests that selfish behavior is taken as reference behavior, while an individual's SVO measure appears to capture her or his initial disposition towards a generalized other in this setting (the GTV). Moreover, on average more or less equal weights appear to be attached to the existing tie value and new interaction experiences (impulses) with a specific other. Spill-over effects of tie value development with specific others in one context are observed in other related contexts, while SVO (GTV) adaptation concerning generalized others (strangers) in related contexts occurs as well.^{45,46} Thus, context (inter-)dependency is observed.^{47,48} Finally, attention is predicted to play a role.¹⁰

Additional experimental findings suggest that, given sufficient room for negative action (hurting instead of helping), also negative relationships with stable negative tie values may develop.⁴⁴ Interestingly, they seem less likely though than stable positive relationships. Also, in contrast to studies related to the 'minimal group paradigm' and social identity theory – suggesting that bonds encouraging social cohesion form easily, even if groups are formed by non-relevant labels like colors⁴⁹ – a great variety in affective tie patterns across groups is observed, facilitated by substantial individual diversity in SVO (GTV) and response patterns resulting in complex group dynamics.^{43,50}

Affective ties may support collective action in other ways too: first, in an indirect way to the extent that the utilities of friends of friends are taken into account⁵¹, with the resulting affective networks boosting the benefit of cooperation for a public good; second, as discussed above, through the spill-over effects of tie value development to related contexts; and, finally, because affective networks generated in local public good provision may be embedded in more general (overarching) public good settings, facilitating the provision of the latter¹². Infrastructure, architecture and technology can play an important additional role because they may encourage (or thwart) social interaction and thereby tie formation. Regarding the former, think of the outlay and architecture of cities and neighborhoods, while concerning technology social media like Facebook (used for grass roots involvement) come to mind.

Two other emotion-related mechanisms that may be involved in collective action, not further discussed here, are norm compliance and emotional contagion, that is, the tendency to automatically mimic and synchronize expressions and movements of another person and to converge emotionally.⁵² Internalized social norms and related moral emotions (see above) can be extremely helpful, especially, for the collective action of larger groups. Their maintenance depends on the sanctioning of violations (norm sending). Affective networks are instrumental in this respect because a violation negatively affects one's utility not only directly but also indirectly via the affective ties with those who comply to the same norm.¹² Emotional contagion has been proposed as mechanism for explaining 'ripple effects', such as panics, in social groups.⁵³ It misses the goal-directed aspect of collective action, though, which may complicate the achievement of a common objective.

The ATM model appears to be helpful also in explaining responses to taxation or appropriation. For example, by assuming that the take rate generates an impulse in the interaction between take authority and responder, the parameter estimates of this model (estimated on data from a public good game experiment) help explain why full destruction starts at a take rate of around 80% in the PTT game (as well as in the ultimatum game, for that matter).¹² In addition, it clarifies why befriended responders retaliate stronger (destroy more) than responders who are strangers to each other, because the consequences for friends are incorporated.⁵⁴

Although these experiments are mostly run with dyads or small groups, the ATM model is also relevant for large groups with emotional (like charismatic) leadership due to bonding between leader and follower; see below.

4. Rent-seeking and political contests

As discussed, by neglecting emotional hazard, even lump-sum taxation may lead to substantial social welfare losses. Regardless of such potential losses, it can be an attractive activity to vie for the position of tax authority or to acquire political access and influence, even though this activity in itself may cause additional welfare losses at the social level. For example, positive ties with policymakers – which may be established through even small gifts – may distort allocative decisions by encouraging favoritism, such as providing greater access and influence to befriended lobbyists or rent-seekers.⁵⁵ Affective ties provide an additional explanation for regulatory capture as well as for the Tullock paradox that rent-seekers appear to pay relatively little.⁵⁶ Experimental evidence of rent-seeking and its consequences comes from an adjusted PTT game, labeled the Contested-PTT game.⁵⁷ At the first stage of this two-stage two-player game, players can spend resources to improve their probability of becoming the taker, while at the second stage the winner subsequently decides how much to take from the left-over resources of the defeated. Players can avoid the second stage, though, if both spend zero resources at the first stage. If the defeated player has no option to respond to taking, standard economic theory predicts that 50% of the resources will be spent (and, thus, wasted) on the contest, and take rates of 100%, even though the efficient outcome entails no spending at all. Although the latter prediction is indeed experimentally approximated (with take rates of 98%, on average), a lot more is wasted (63%). Moreover, contest expenditures escalate over time. As a result, takers are left with only 73% of their initial resources and their counterparts with only 1%. Although, in the absence of an option to retaliate (destroy) in response, there is no direct welfare loss associated with taking, the contest for the power to take now generates an enormous and increasing welfare loss, leaving both players worse off. Interestingly, adding the option to destroy (as in the original PTT game) leads to a Pareto welfare improvement, with 20 percentage points lower contest expenditures and higher final earnings for all. The explanation is that now the emotional hazard of destruction lowers the take rate and consequently

the attractiveness of spending on the contest. Nevertheless, both players leave the contest with less than their initial resources (80% and 14%, respectively). In this case, the contestants met repeatedly a different counterpart, like strangers. Remarkably different results are obtained if the same contestants meet repeatedly, like partners. In that case, contest expenditures become about 40% lower, which is mostly due to a sizable minority (a bit more than 1/3) that stops investing in the contest altogether, after some initial spending. The ATM model – but not so easily another extant model – helps explain why this type of selfless behavior facilitates the cooperative efficient outcome. The reason is that it fosters the development of a positive tie that de-escalates the conflict among the rent-seekers.

The importance of leading-by-example and emotional leadership in case of rent-seeking groups is suggested by a repeated Contested-PTT game experiment with fixed groups of four players as contestants, where a leader can spend on the contest first, and the other three players simultaneously follow. Here standard economic theory predicts that leaders will spend nothing while followers will spend about 25% of their (equal) resources, as they all try to free-ride on each other (neglecting external effects of their behavior). Consequently, now ‘only’ 20% of all resources is predicted to be wasted on the contest. In fact, the experimental results show that twice as much (40%) is wasted and that leaders lead-by-example by spending 15% more than their followers (instead of 0). By taking affect into account, the ATM model and, for that matter, a psychological preferences model assuming guilt-aversion⁵⁸ can explain the positive expenditure correlation between leader and followers. In the former this positive relation would be due to affective bonds generated by the contribution of the leader, whereas in the latter the contribution of the leader is assumed to set a norm that followers prefer to follow because of their guilt aversion. Note that a leader may strategically take into account these affective mechanisms, and/or contribute her- or himself because of a positive SVO (GTV) internalizing the effects for followers.

The emotional display of leaders has previously been found to significantly influence the behavior of followers, and managing the emotions of group members is considered to be a key leadership function.^{59,60} In one treatment of the just discussed group contest experiment this was tested by having leaders repeatedly choose an emotion (fixed for the next three rounds) which was then induced in their followers through specially selected video clips. Also in this case, emotional leadership was found to have a significant effect.⁶¹

5. Concluding discussion

The observed behavioral importance of emotions and affective ties challenges the aforementioned two key ingredients of the standard Public Choice approach: the assumption of rational and selfish behavior, and methodological individualism. Regarding the latter, the role of affective ties and networks questions the nature of the relevant agent – how the ‘individual’ should be defined in a particular case – and seems to plead for a greater role of a group or affective network frame of reference.^{62,63} It also pleads for greater attention to be paid to related concepts such as community, as a ‘third pillar’ next to the market and the state that are typically focused on and counterposed.⁶⁴ One important reason is that (positive) affective networks foster social trust that in turn widely affects economic and political behavior as well as institutional outcomes.⁶⁵ From a more policy related perspective, finally, the above discussion is suggestive for the importance of improving our knowledge of the dynamics of affect (e.g., to avoid welfare losses due to emotional hazard in the power to take). It is also suggestive, furthermore, for the role of technology (think of social media influencing affective networks and social norms), infrastructure and architecture (mediating

interaction opportunities), and education (for the buildup of social norms, social value orientation and affective networks) as drivers and potential policy instruments of affect in Public Choice.

References

1. Buchanan, J.M., & Tullock, G. (1962). *The Calculus of Consent*. Ann Arbor: University of Michigan Press.
2. Downs, A. (1957). *An Economic Theory of Democracy*. New York: Harper & Row.
3. Mueller, D.C. (1989). *Public Choice III*. Cambridge: Cambridge University Press.
4. Olson, M. (1971). *The Logic of Collective Action*. Cambridge: Harvard University Press.
5. Frijda, N. H. (1986). *The emotions*. Cambridge: Cambridge University Press.
6. Oatley, K., & Jenkins, J. M. (1996). *Understanding emotions*. Oxford: Blackwell
7. Damasio, A. (2018). *The strange order of things*. New York: Vintage Books.
8. van Dijk, F., & van Winden, F. (1997). Dynamics of social ties and local public good provision. *Journal of Public Economics*, 64, 323–341.
9. Bault, N., Fahrenfort, J. J., Pelloux, B., Ridderinkhof, K. R., & van Winden, F. (2017). An affective social tie mechanism: Theory, evidence, and implications. *Journal of Economic Psychology*, 61, 152–175.
10. van Winden, F. (2023). The informational affective tie mechanism: on the role of uncertainty, context, and attention in caring. *Journal of Economic Psychology*, 97, 102625.
11. van Winden, F. (2007). Affective public choice. In: Casas, J., Schwartz, P. (Eds.), *Public Choice and the Challenges of Democracy*. Cheltenham: Edward Elgar.
12. van Winden, F. (2015). Political economy with affect: on the role of emotions and relationships in political economics. *European Journal of Political Economy*, 40, 298–311.
13. Falk, A., & Heckman, J.J. (2009). Lab experiments are a major source of knowledge in the social sciences. *SCIENCE*, 326, 535-538.
14. DellaVigna, S., & Pope, D. (2022). Stability of experimental results: forecasts and evidence. *American Economic Journal: Microeconomics*, 14, 889-925.
15. Snowberg, E., & Yariv, L. (2021). Testing the waters: behavior across participant tools. *American Economic Review*, 111, 687-719.
16. Armantier, O., & Boly, A. (2013). Comparing corruption in the laboratory and in the field in Burkina Faso and in Canada. *Economic Journal*, 123, 1168-1187.
17. Alm, J., Bloomquist, K.M., & McKee, M. (2015). *Economic Inquiry*, 53, 1170-1186.
18. Bardsley, N., Cubitt, R., Loomes, G., Moffatt, P., Starmer, C., & Sugden, R. (2010). *Experimental Economics*. Princeton: Princeton University Press.
19. Rick, S., & Loewenstein, G. (2008). The role of emotion in economic behavior. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (pp. 138–156). The Guilford Press.
20. van Well, S., O’Doherty, J.P., & van Winden, F. (2019). Relief from incidental fear evokes exuberant risk taking. *PLoS ONE*, 14(1), e0211018.
21. Passarelli, F., & Tabellini, G. (2017). Emotions and political unrest. *Journal of Political Economy*, 125, 103–946.
22. Kuran, T., & Sunstein, C. (1999). Availability cascades and risk regulation. *Stanford Law Review*, 51, 683–768.
23. Schram, A., & van Winden, F. (1991). Why people vote, free riding and the production and consumption of social pressure. *Journal of Economic Psychology*, 12, 575–620.
24. Smith, A. (1971 [1776]). *The Wealth of Nations*. Book V. London: Dent.
25. Erard, B., & Feinstein, J. (1994). The role of moral sentiments and audit perceptions in tax compliance. *Public Finance*, 49 (Supplement), 70–89.
26. Coricelli, G., Joffily, M., Montmarquette, C., & Villeval, M. (2010). Cheating, emotions, and rationality: an experiment on tax evasion. *Experimental Economics*, 13, 226–247.

27. Smith, A. (1982 [1759]). *The Theory of Moral Sentiments*. Indianapolis: Liberty Fund.
28. Rawls, J. (1983). *A Theory of Justice*. Oxford: Oxford University Press.
29. van Winden, F., & Ash, E. (2012). On the behavioral economics of crime. *Review of Law & Economics*, 8, 181–213.
30. Nussbaum, M. (2013). *Political Emotions: Why Love Matters for Justice*. Cambridge: Harvard University Press.
31. Adolphs, R. (2003). Cognitive neuroscience of human social behaviour. *Nature Reviews. Neuroscience*, 4, 165–178.
32. Bosman, R., & van Winden, F. (2002). Emotional hazard in a power-to-take experiment. *Economic Journal*, 112, 147–169.
33. Reuben, E., & van Winden, F. (2008). Social ties and coordination on negative reciprocity: the role of affect. *Journal of Public Economics*, 92, 34–53.
34. Bosman, R., Hennig-Schmidt, H., & van Winden, F. (2017). Emotion at stake – the role of stake size and emotions in a power-to-take game experiment in China with a comparison to Europe. *Games*, 8, 17 (doi:10.3390/g8010017), 1-22.
35. Reuben, E., & van Winden, F. (2010). Fairness perceptions and prosocial emotions in the power to take. *Journal of Economic Psychology*, 31, 908–922.
36. Bosman, R., Sutter, M., & van Winden, F. (2005). The impact of real effort and emotions in the power-to-take game. *Journal of Economic Psychology*, 26, 407–429.
37. Loewenstein, G. (2000). Emotions in economic theory and economic behavior. *American Economic Review*, 90, 426–432.
38. Ben-Shakhar, G., Bornstein, G., Bosman, R., & van Winden, F. (2007). Reciprocity and emotions in bargaining, using physiological and self-report measures. *Journal of Economic Psychology*, 28, 314–323.
39. Bosman, R., Hennig-Schmidt, H., & van Winden, F. (2006). Exploring group decision making in a power-to-take experiment. *Experimental Economics*, 9, 35–51.
40. Yamagishi, T., Horita, Y., Mifune, N., Hashimoto, H., Li, Y., Shinada, M., Miura, A., Inukai, K., Takagishi, H., & Simunovic, D. (2012). Rejection of unfair offers in the ultimatum game is no evidence of strong reciprocity. *PNAS*, 109, 20364–20368.
41. Olson, M. (1965). *The Logic of Collective Action*. Cambridge: Harvard University Press.
42. Balliet, D., Parks, C., & Joireman, J. (2009). Social value orientation and cooperation in social dilemmas: a meta-analysis. *Group Processes & Intergroup Relations*, 12(4), 533-547.
43. Goette, L., Huffman, D., & Meier, S. (2012). The impact of social ties on group interactions: evidence from minimal groups and randomly assigned real groups. *American Economic Journal: Microeconomics*, 4(1), 101-115.
44. Loerakker, B., Bault, N., Hoyer, M. & van Winden, F. (2022). *On the development of cooperative and antagonistic relationships in public good environments. A model-based experimental study*. Working paper, CREED, University of Amsterdam.
45. Brandts, J., Riedl, A., & van Winden, F. (2009). Competitive rivalry, social disposition, and subjective well-being: An experiment. *Journal of Public Economics*, 93, 1158–1167.
46. Ackermann, K. A., & Murphy, R. O. (2019). Explaining cooperative behavior in public goods games: How preferences and beliefs affect contribution levels. *Games*, 10, 15, 1-32.
47. Bogaert, S., Boone, C., & Declerck, C. (2008). Social value orientation and cooperation in social dilemmas: A review and conceptual model. *British Journal of Social Psychology*, 47, 453–480.
48. Greiff, M., Ackermann, K. A., and Murphy, R. (2016). *The influences of social context on the measurement of distributional preferences*. MAGKS Joint Discussion Paper Series in Economics, No. 06-2016.

49. Tajfel, H., & Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel & L. W. Austin (Eds.), *Psychology of Intergroup Relations*. Chicago: Nelson-Hall.
50. Sonnemans, J., van Dijk, F., & van Winden, F. (2006). On the dynamics of social ties structures in groups. *Journal of Economic Psychology*, 27, 187–204.
51. Liang, P., & Meng, J. (2022). Paying it forward: an experimental study on social connections and indirect reciprocity. *Review of Economic Design*, <https://doi.org/10.1007/s10058-022-00298-3>.
52. Hatfield, E., Cacioppo, J., & Rapson, R. (1993). Emotional contagion. *Current Directions in Psychological Science*, 2, 96–99.
53. Barsade, S. (2002). The ripple effect: emotional contagion and its influence on group behaviour. *Administrative Science Quarterly*, 47, 644–675.
54. Reuben, E., van Winden, F. (2008). Social ties and coordination on negative reciprocity: the role of affect. *Journal of Public Economics*, 92, 34–53.
55. Malmendier, U., & Schmidt, K. (2017). You Owe Me. *American Economic Review*, 2017, 107(2), 493–526.
56. Ansolabehere, S., de Figueiredo, J.M., & Snyder, J.M. (2003). Why is there so little money in U.S. politics? *Journal of Economic Perspectives*, 17(1), 105-130.
57. Lacombe, J., Lagos, F., Reuben, E., & van Winden, F. (2014). On the escalation and de-escalation of conflict. *Games and Economic Behavior*, 86, 40–57.
58. Dufwenberg, M., Gächter, S., & Hennig-Schmidt, H. (2011). The framing of games and the psychology of play. *Games and Economic Behavior*, 73(2), 459–478.
59. Humphrey, R. H. (2002). The many faces of emotional leadership. *The Leadership Quarterly*, 13(5), 493–504.
60. Walzer, M. (2004). *Politics and Passion*. New Haven: Yale University Press.
61. Loerakker, B., & van Winden, F. (2017). Emotional leadership in an intergroup conflict game experiment. *Journal of Economic Psychology*, 63, 143–167.
62. van Winden, F. (1993). Some reflections on the next 25 years of Public Choice. *Public Choice*, 77, 213-223.
63. van Winden, F. (1999). On the economic theory of interest groups: towards a group frame of reference in political economics. *Public Choice*, 100, 1–29.
64. Rajan, R. (2019). *The Third Pillar*. London: William Collins.
65. Castro, M.F., Guccio, C. (2020). Birds of a feather flock together: trust in government, political selection and electoral punishment. *Public Choice*, 184, 263-287.