Priming anti-coordination with social expectations

Pietro Guarnieri[*]   Lorenzo Spadoni[†]

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Extended Abstract

Anti-coordination issues are extremely relevant in our (post)pandemic and climate change world. The capability of human communities to manage the coordination in the access to a scarce resource - such as public spaces or a source of energy subject to limitation (e.g. electricity) – has suddenly become a pressing problem also in developed countries. In this regard, social norms appear crucial and social expectations could be used as policy tools. However, their functioning is worth investigating given the idiosyncratic nature of the anti-coordination issues that require that individuals do not follow the same rule of behavior. How do social norms and expectations work when social cooperation consists in not-coordinating?

While coordination and social dilemmas issues are typically solved by descriptive and social norms, rule-following appears not straightforward in the case of anti-coordination. Indeed, rational individuals should not conform to the descriptive norm in order to maximize their payoff. Moreover, they may feel reluctant to commit themselves to an injunctive norm dictating or preventing one of the possible actions, and revolve themselves towards their own intrinsic convictions. This kind of normative social dilemma rises a series of relevant questions concerning the relationships and the possible conflict between social expectations ,- i.e., empirical expectations and normative expectations (Bicchieri, 2006, 2016) – and between these and personal normative beliefs – i.e., normative preferences independent on the expectations on others behaviors or beliefs.

In this paper, we investigate anti-coordination experimentally by using the the El Farol Bar Game (see e.g. Gintis 2009). Specifically, we consider a game with 3 players ($n = 3$), each with strategy set $s_i \in H, B$. The utility from playing H is α regardless what other

[*]Department of Economics and Management, University of Pisa, Via Cosimo Ridolfi 10, 56124, Pisa, Italy. `pietro.guarnieri@ec.unipi.it`., ORCID: 0000-0001-5107-7305.

[†]Department of Economics and Law, University of Cassino and Southern Lazio, Via S. Angelo, Loc. Folcara, 03043 Cassino (FR), Italy, email: `lorenzo.spadoni@unicas.it`, ORCID: 0000-0002-1208-2897.

players do, and the utility from playing B is either β if $\sum_{i=1}^{n} s_i \leq 2$ or γ if $\sum_{i=1}^{n} s_i = 3$. Assuming $\gamma < \alpha < \beta$, there are three pure-strategy Nash equilibria (PSNE), each with two players choosing B and one choosing H. The unique symmetric mixed-strategy Nash equilibrium (MSNE) is the probability for player i to play H, $m_i^* = \sqrt{\frac{\beta - \alpha}{\beta - \gamma}}$, with $0 < m_i^* < 1$. The payoff matrix is represented in the following table.

s_i/s_{-i}	H,H	H,B	B,H	B,B
H	α	α	α	α
B	β	β	β	γ

Our pre-registered online experiment involves two interdependent studies. In Study 1, we elicit (incentivized) social expectations and we make subjects play the El Farol Bar Game afterward. In particular, we respectively ask to two separate sample (N=162*2) a) which action the majority of subjects are playing (empirical expectations) and b) which option is believed as the right thing to do by the majority of other participants (normative expectations). This information is used to prime decisions in the El Farol Bar game Task in Study 2. More precisely, subjects in Study 2 play two different rounds of the El Farol Bar Game, receiving a different prime in each of the two rounds – except for the first round of the Baseline treatment where no priming is implemented. All the treatments of Study 2 are summarised in the following table:

TREATMENTS	*First round*	*Second round*
Baseline (N=162*2)	No priming	Priming ee/ne (p = 0.5)
P-ee (N=162*2)	Priming ee	Priming ne
P-ne (N=162*2)	Priming ne	Priming ee

As in Bicchieri and Chavez (2010), we refer to the specific results of the sections of Study 1 to make the priming vary not only with respect to the type of social expectation (empirical vs normative) but also with respect to their content (staying home vs going out), so that we are able to measure the impact on decisions of all the possible combinations of priming in the first and the second round of Study 2.

Concerning Study 1, we observe that *i*) once empirical expectations are elicited the majority of subjects aspects others to stay home; *ii*) normative expectations do not signal a dominant opinion concerning what is the shared belief about what ought to be done; *iii*)

personal normative beliefs, in line with empirical expectations, reveal that the majority of subjects thinks that staying home is the right thing to do; iv) eliciting empirical expectations have a significant impact on decisions mainly *via* conformism (even when following what others do is costly in terms of payoffs) and makes the majority of people stay home; v) eliciting normative expectations have no significant impact on decisions.

Concerning Study 2, our findings are that a) priming with the empirical expectations stating that the majority of experimental subjects are expected to go home makes subjects act strategically and diminishes the percentage of them going out; b) priming with the normative expectations stating that the majority of people considers staying home what is expected as the norm to be followed in their community makes subjects compliant to this norm and diminishes people going out; c) both these priming make decisions close to the empirical expectations and the normative beliefs elicited in Study 1, thus revealing that a potential channel of the effect of priming on decisions could be the increased salience of those expectations and normative preferences; d) people sometime switch decisions after being primed a second time, but the percentage of switching is constant across treatments; e) as far as welfare implications are concerned, nudging a prudential norm with normative expectations enhances security to the detriment of efficiency, while nudging the same behaviour with empirical expectations increases efficiency, but with social risk.

Overall, our experiment let us single out some take-home that seem relevant in terms of policy implications. Norm nudging in the case of anti-coordination problem similar to ours could only be able to foster the more prosocial/cautious behaviour (staying home), but not the riskier one (going out). This effect appears channeled by the increased salience of the relevant normative expectations and beliefs and is stable after a second contrasting priming. Finally, nudging security is not efficient, but aiming at efficiency risks to maximise inefficiency.