

Alma Mater Studiorum Università di Bologna
Archivio istituzionale della ricerca

Household crowding can have political effects : An empirical study on support for anti-democratic political systems during the COVID-19 lockdown in Italy

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Cavazza N., Russo S., Colloca P., Roccato M. (2021). Household crowding can have political effects : An empirical study on support for anti-democratic political systems during the COVID-19 lockdown in Italy. JOURNAL OF ENVIRONMENTAL PSYCHOLOGY, 76, 1-5 [10.1016/j.jenvp.2021.101628].

Availability:

This version is available at: <https://hdl.handle.net/11585/829562> since: 2021-08-08

Published:

DOI: <http://doi.org/10.1016/j.jenvp.2021.101628>

Terms of use:

Some rights reserved. The terms and conditions for the reuse of this version of the manuscript are specified in the publishing policy. For all terms of use and more information see the publisher's website.

This item was downloaded from IRIS Università di Bologna (<https://cris.unibo.it/>).
When citing, please refer to the published version.

(Article begins on next page)

This is the final peer-reviewed accepted manuscript of:

Nicoletta Cavazza, Silvia Russo, Pasquale Colloca, Michele Roccato, Household crowding can have political effects: An empirical study on support for anti-democratic political systems during the COVID-19 lockdown in Italy, *Journal of Environmental Psychology*, Volume 76, 2021, 101628, ISSN 0272-4944

The final published version is available online at:
<https://doi.org/10.1016/j.jenvp.2021.101628>

Terms of use:

Some rights reserved. The terms and conditions for the reuse of this version of the manuscript are specified in the publishing policy. For all terms of use and more information see the publisher's website.

This item was downloaded from IRIS Università di Bologna (<https://cris.unibo.it/>)

When citing, please refer to the published version.

Household crowding can have political effects: An empirical study on support for anti-democratic political systems during the COVID-19 lockdown in Italy

Abstract

We analysed some political consequences of household crowding during the 2020 COVID-19 lockdown across a wide quota sample of the Italian adult population, stratified as concerns gender, age, level of education, geographical area of residence, and size of area of residence, interviewed before (May–June 2019) and during (April 2020) the lockdown ($N = 1,047$, 51.2% women, $M_{\text{age}} = 50.44$, $SD = 14.36$). Path analysis showed that household crowding during the lockdown was positively associated with support for anti-democratic political systems, through the partial mediation of the perceived relative impact of COVID-19 on one's family and of expectations of future lifestyle restrictions due to the pandemic. These associations did not depend on participants' pre-pandemic socio-economic status and predisposition to strong political leaders. Strengths, limitations, and possible developments of the study are discussed.

Keywords: household crowding, lockdown, COVID-19, authoritarianism

Word count: 3008

1. Introduction

The COVID-19 pandemic and the lockdown measures taken by governments to limit the spread of the virus uncover the possibility that the discomfort people have frequently felt since the pandemic's outbreak (e.g., Codagnone et al., 2020) has depended, at least in part, on the housing conditions in which they live. Under lockdown conditions, everyone has suffered the limitation of personal freedom, but it is plausible that being stuck indoors in cramped living conditions could have magnified this suffering. In addition, living in overcrowded houses could reinforce concern regarding the need for isolation in case of infection. What are the consequences of such an experience?

A few investigations examining the effects of living density are useful to answer this question. The great majority of studies have focused on psychological effects, reporting a positive relationship between overcrowding and psychological distress, anxiety, and even mental illness (Cable & Sacker, 2019; Chan et al., 2020; Evans et al., 2001, 2002, 2003; Gillis et al., 1986; Gover & Hughes, 1983). Household crowding effects even prevail over those of community density, in that an optimal household density counteracts the deleterious impact of community density in terms of psychological distress and residential satisfaction (Gomez-Jacinto & Hombrados-Mendieta, 2002). Evans et al. (2000) found cultural differences in the perception of household crowding, as Vietnamese and Mexican Americans were more tolerant of overcrowding than African- and Anglo-Americans. However, these cultural differences did not emerge in terms of the psychological distress induced by the actual density (i.e., people per room), which was similar across ethnic groups. This indicates the robustness of this psychological impact.

The negative psychological consequences induced by living density also spill over into physical health. Early studies on this matter, performed on rats and mice, found that cage density fosters heightened blood pressure, reduced reproductive capacity, enhanced mortality, and other negative health outcomes (e.g., Calhoun, 1962; Christian & Davis, 1964). Similar effects were observed in humans. For example, Schaeffer et al. (1988) compared prisoners living in three

housing types that varied in terms of privacy and crowding, finding both self-report and biochemical evidence of increased illnesses as a function of social density. Less attention has been paid to the relational and social impact of living density. Early studies performed on rats (e.g., Calhoun, 1962; Christian, 1963) showed that cage density leads to social pathologies such as cannibalism and hyper-sexuality due to the increased competition for resources. As far as humans are concerned, a couple of studies recently did not show significant association between the negative emotional states provoked by household overcrowding and an increased probability of a relationship break-up (Krapf & Wagner, 2020; van Damme, 2020). However, this does not definitely exclude the possibility that other relational and social effects could be observed due to household overcrowding.

Several explanations of the detrimental effects of household crowding have been proposed. In particular, Evans and Lepore (1992) suggested three mechanisms through which high living density could lead to adverse consequences: (a) it increases social competition and reduces access to valued resources, interfering with goal attainment; (b) it weakens perceived control over, and predictability of, the environment; and (c) it induces excessive stimulation, causing overload and unpleasant over-arousal. Moreover, high social density is associated with a decline of perceived social support, which mediates the psychological effects illustrated above (Lepore et al., 1991).

However, previous studies did not engage in an extension of the possible consequences, beyond a state of psychological distress, of the perceived social competition entailed by living density, including consequences for socio-political attitudes. Overall, we reasoned that the stronger social competition associated with household overcrowding (and, in particular, its salience provoked by the COVID-19 restrictions) could affect the way people perceive their social environment, which may orientate their political preferences. More specifically, we aimed at exploring whether living 24/7 in a crowded household, as happens under lockdown conditions, may foster negative socio-political effects, due to the heightened competition experienced within the household.

2. The Present Study

For nearly two months, from March 11 to May 3, 2020, Italy was under severe lockdown measures due to the dramatic spread of COVID-19. The Italian government tackled the pandemic by forbidding people from leaving their homes, except to shop for food and medical supplies close to their homes, unless they were key workers. These lockdown measures forced people to stay indoors 24/7 with their cohabitants. In this study, we analysed the association between household crowding during the lockdown and the support for anti-democratic political systems, via the mediation of perceived social competition. According to De Dreu (2010), perceived social competition is strongly associated with relative deprivation – i.e., from comparisons that lead people to believe that other people or groups have something they deserve and cannot have, or that they are losing, or have already lost, something they had and they still deserve. Consistent with this, we operationalised perceived social competition as the relative impact of COVID-19 on one's own family and as expectations of future lifestyle restrictions.

In particular, although there are scant empirical grounds on which to base specific hypotheses, based on the above-illustrated empirical evidence, we predicted that living in an overcrowded household could entail high perceived social competition in terms of relative impact of COVID-19 on one's own family (H1) and expectations of future lifestyle restrictions (H2). These factors are positively associated with authoritarian attitudes and behaviours (e.g., Urbanska & Guimond, 2018), as well as some variables strongly associated with the preference for anti-democratic political systems, such as perceived in-group superiority and the perceived illegitimacy of political authorities (e.g., Doosje et al., 2012). Thus, we expected them to show a positive association with support for anti-democratic political systems (H3 and H4, respectively).

3. Method

3.1. Participants and procedure

We pursued our research goals by analysing data from the longitudinal dataset developed within the CoCo (Consequences of Covid-19) project (data available at

https://osf.io/64sda/?view_only=0654e018dcda4d4dbcf02621bad29e09). The CoCo dataset includes data from a wide quota sample of the Italian adult population, periodically surveyed from Spring 2019 onwards. Although the data of the first wave has been collected to study the Italians' political opinions and behaviours, and not *ad hoc* for this study, it contains valuable information to address our research question. The data of the subsequent waves have been collected *ad hoc* to study the social-psychological consequences of the COVID-19. The data collection was carried out in accordance with the ethical standards of the Italian Association of Psychology.

In this study, we have used data from the second wave, collected in April 2020, at the peak of the first wave of the pandemic, and during the lockdown (the control variables are from the first wave instead). A total of 1,047 people (51.2% women, $M_{\text{age}} = 50.44$, $SD = 14.36$) had valid responses on all the variables we used. Only one member of each household is included in the sample, selected according to the frequencies of gender, age, level of education, geographical area of residence, and size of area of residence: this ensures the statistical independence of responses and a good representation of the Italian adult population.

3.2. Measures

Support for anti-democratic political systems. Two items asked participants to report how good or bad the following political systems would be for governing Italy in a period such as that in which the data have been collected: (a) a strong leader who does not have to bother with parliament and elections; and (b) a military government. Responses were given on four-category scales (1 = awful system, 4 = excellent system). Based on $r = .51$, $p < .001$, we computed a mean index for these items, with higher scores indicating support for anti-democratic political systems (cf. Roccato et al., 2020).

Household crowding during the lockdown. Following Lepore and colleagues (1991), household crowding has been operationalised as the ratio between the number of people living in a house (including the respondent) and the number of available rooms.

Perceived social competition. Perceived social competition has been operationalised as the perceived relative impact of COVID-19 on a respondent's family (respondents evaluated the relative impact of COVID-19 on their family on a three-point scale: 1 = less than on other families, 2 = like on other families, 3 = more than on other families) and as expectations of facing future restrictions in eight lifestyle domains (e.g., “buying fresh food”; “reducing use of car”), on a four-point scale from 1 (definitely not) to 4 (definitely yes). The eight scale items have been adapted from the Life in Transition Survey II (LiTS II, see <https://www.ebrd.com/>) questionnaire, and we computed a mean index for these eight items ($\alpha = .87$), with higher scores indicating higher expectations of future lifestyle restrictions.

Control Variables. We controlled for participants' gender (0 = man, 1 = woman), age, years of education, and size of the place of residence. Moreover, as household crowding could be a proxy of socio-economic status, we controlled for participants' pre-pandemic perceived economic situation, i.e., whether the present income allows them to live comfortably (1 = living comfortably on present income, 2 = coping on present income, 3 = finding it difficult on present income, or 4 = finding it very difficult on present income, cf. European Social Survey, www.europeansocialsurvey.org). In addition, to disentangle the effect of household crowding on people's preference for anti-democratic political systems in “normal times” from that induced by the lockdown restrictions, we controlled for participants' pre-pandemic orientation toward a strong leader using the combination of responses to two five-category items, taken from Roccato et al.'s (2019) POPOR scale ($r = .30$, $p < .001$).

The Italian version of the questions used in this study and their English translations are available in the Supplementary material online.

4. Results

Table 1 illustrates means and intercorrelations among the variables we used. A path analysis model, tested using Process (Hayes, 2018), showed that, net of the effects of the control variables and consistently with H1 and H2, living in an overcrowded household was positively associated

with perceiving a higher impact of COVID-19 on one's own family relative to families of others ($R^2 = .06$, Cohen's $f^2 = .06$) and with expecting to face restrictions on one's future lifestyle ($R^2 = .16$, Cohen's $f^2 = .19$). In line with H3 and H4, these perceptions, in turn, were positively associated with support for anti-democratic systems ($R^2 = .21$, Cohen's $f^2 = .27$), even controlling for any previous leanings towards a strong leader (see Figure 1). The association of household crowding with support for anti-democratic systems was partially mediated by the perceived relative impact of COVID-19 on one's own family, $IE = .01$, $SE = .01$, 95% CI [.00, .03], and with the expectation of future lifestyle restrictions, $IE = .03$, $SE = .01$, 95% CI [.01, .05].¹

Table 1. Descriptives statistics and intercorrelations

	<i>M (SD)</i>	2	3	4	5	6	7	8	9
1.Age (range: 19-92)	49.85 (14.61)	-.26***	.02	.05	.01	-.20***	-.04	-.07*	-.10***
2.Year of education (range: 5-21)	13.86 (3.59)		-.18***	.12***	-.15***	.03	-.06*	-.07*	-.14***
3.Perceived economic threat (range: 1-4)	3.65 (.66)			-.09***	.03	.05	.19***	.33***	.03
4.Size of place of residence (range: 1-4)	2.65 (1.15)				-.01	.05	-.00	-.02	-.01
5.Pre-orientation toward a strong leader (range: 1-5)	3.11 (1.00)					.06	.08	.04	.37***
6.Household crowding (range: .17-7)	1.05 (.66)						.14***	.20***	.19***
7.Relative impact of COVID-19 on the family (range: 1-3)	1.97 (.58)							.32***	.17***
8.Expectations of lifestyle restrictions (range: 1-4)	2.08 (.65)								.22***
9.Support for anti-democratic systems (range: 1-4)	1.92 (.82)								

Note: * $p < .05$; *** $p < .001$

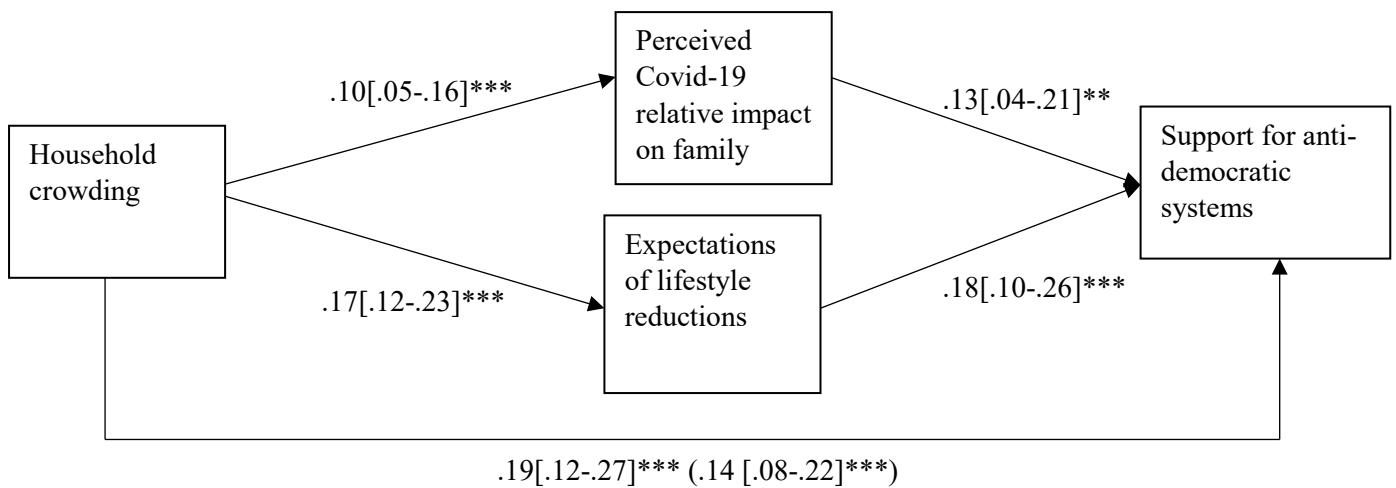


Figure 1. The tested model.

Note: Unstandardized coefficients, 95% confidence intervals in square brackets. $^{***}p < .001$, $^{**}p < .01$.

5. Discussion

The studies examining the effects of living density performed on rats and mice in cages (e.g., Paulus, 2012) and those performed on human participants, both among prisoners (e.g., Schaeffer et al., 1988) and among people living in wider society (e.g., Chan et al., 2020), converge and show relevant deleterious effects of living density on psychological well-being and physical health. However, a discussion of whether living in an overcrowded household could also entail socio-political consequences is missing. In this study, we aimed at expanding the literature on household crowding in two directions. First, we focused on unexplored effects of living density – namely, its political consequences. Second, by focusing on the lockdown experience during the COVID-19 pandemic, we uncovered the effects of an unprecedented large-scale enforced 24/7 cohabitation. Our results showed a positive association between living density and support for anti-democratic political systems, via the partial mediation of two variables operationalising perceived social competition – i.e., perceived relative impact of the COVID-19 emergency on the respondent's family and expectations of future lifestyle restrictions. Thus, we have shown that the lockdown

necessitated by the COVID-19 pandemic made it evident that household crowding may have important socio-political consequences for ordinary people, going beyond the well-studied impacts in terms of psychological and physical well-being.

Importantly, these effects did not depend on participants' social status or on the household's density *per se*. Indeed, the paths we have analysed reached statistical significance even controlling both for social status indicators and a pre-lockdown predisposition toward strong political leaders. This indicates that our findings point out a specific consequence of living in a dense environment 24/7, as happens under severe lockdown measures. It is plausible that the lockdown, forcing the constant presence of family members at home, has exacerbated the discomfort derived from living in a dense household, and that this exacerbation has reflected itself in the development of authoritarian attitudes.

Unfortunately, we could not empirically test this idea because we did not have the basic information to do so. The use of data not directly collected to pursue our research goal was undoubtedly the main limitation of our study. Advantages and drawbacks of secondary analyses are well known (e.g., Kiekolt & Nathan, 1985). In our case, we had to use plausibly sub-optimal variables of perceived social competition. Moreover, we could not extend our model to other mediators and dependent variables. Sound candidates for other interesting outcomes could be voting for extreme-right-wing parties and negative attitudes toward immigrants, as these are possible consequences of perceived social competition (e.g., Meuleman et al., 2020; Schneider, 2008; Urbanska & Guimond, 2018). It could be argued that another limitation of this study is its exclusive focus on the Italian situation. However, we believe that this is not a severe problem, because previous research showed that the negative effects of household crowding are stable across ethnic groups (Evans et al., 2000). Thus, we believe that our results could be generalised to other contexts. However, a cross-cultural replication of this study, aimed at analysing whether household crowding interact with the wider sociopolitical context in influencing individuals' political orientation, could be interesting. Finally, we focused on short-term effects only. Another interesting development of

this research could consist in the replication and extension of our analysis to other points in time, in subsequent waves, aimed at studying the length of the effect we have detected.

On the positive side, this study allowed us to expand the literature on the consequences of living in an overcrowded environment, showing that it can possibly have relevant socio-political consequences. Moreover, our study helped extend the flourishing literature on the consequences of COVID-19 to an unexplored dimension. Much is known about the psychological (e.g., Codagnone et al., 2020) and relational (e.g., Brooks et al., 2020) effects of the pandemic, but our study is the first to show possible socio-political consequences of the household overcrowding due to lockdown. From an applied point of view, given the chance of future lockdowns, our study highlights the need to support people in disadvantaged neighbourhoods, where many families live in overcrowded households. Such support could include, for example, investments for affordable homes where individuals could self-isolate and assistance to find safe and suitable temporary accommodations or spaces where children or adolescents can spend part of the day.

From the methodological point of view, our use of secondary analysis allowed us to use a wide dataset, with a much higher representativeness than that of the standard psychological research, often distorted by the student sample bias (Meloan, 1993). Moreover, the possibility of measuring the control variables before the onset of the effects upon which we have focused is definitely another plus of our study, in that it allowed us to discard the alternative interpretation that our results depended on pre-pandemic social status or on pre-existing favourable predispositions toward a strong leader. This is why, notwithstanding the above limitations, we believe that our findings complement previous contributions on the effect of household crowding and of the COVID-19 pandemic, extending the analyses to socio-political variables.

Footnote

1. Supplementary analyses (results available from the corresponding author) showed that pre-pandemic social status and pre-existing favourable predispositions toward a strong leader did not moderate the associations between household crowding and perceived relative COVID-19 impact on the one hand and lifestyle reductions expectations on the other. The same held true as concerns the associations between perceived relative COVID-19 impact and lifestyle reductions expectations on the one hand and support for antidemocratic systems on the other.

References

- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet*, 395, 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Cable, N., & Sacker, A. (2019). Validating overcrowding measures using the UK Household Longitudinal Study. *SSM-Population Health*, 8, 100439. <https://doi.org/10.1016/j.ssmph.2019.100439>
- Calhoun, J. B. (1962). Population density and social pathology. *Scientific American*, 206, 139-149. <https://doi.org/10.1038/scientificamerican0262-139>
- Codagnone, C., Bogliacino, F., Gómez, M., Charris, R. A., Monteanegre, F., Liva, G., Lupiáñez-Villónueva, F., Folkvord, F., & Veltri, G. A. (2020). Assessing concerns for the economic consequences of the COVID-19 response and mental health problems associated with economic vulnerability and negative economic shock in Italy, Spain, and the United Kingdom. *Plos One*. <https://doi.org/10.1371/journal.pone.0240876>
- Chan, S. M., Wong, H., Chung, R. Y. N., & Au-Yeung, T. C. (2020). Association of living density with anxiety and stress: A cross-sectional population study in Hong Kong. *Health & Social Care in the Community*. <https://doi.org/10.1111/hsc.13136>
- Christian, J. J. (1963). The pathology of overpopulation. *Military Medicine*, 128, 571-603. <https://doi.org/10.1093/milmed/128.7.571>
- Christian, J. J., & Davis, D. E. (1964). Endocrines, behavior, and population. *Science*, 146, 1550-1560. <https://doi.org/10.1126/science.146.3651.1550>
- De Dreu, C. K. W. (2010). Social conflict: The emergence and consequence of struggle and negotiation. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (Vol. 2., pp. 983-1023). Wiley.
- Evans, G. W., & Lepore, S. J. (1992). Conceptual and analytic issues in crowding research. *Journal of Environmental Psychology*, 12, 163-173. [https://doi.org/10.1016/S0272-4944\(05\)80068-4](https://doi.org/10.1016/S0272-4944(05)80068-4)

- Evans, G. W., Lepore, S. J., & Allen, K. M. (2000). Cross-cultural differences in tolerance for crowding: Fact or fiction? *Journal of Personality and Social Psychology*, 79, 204-210.
<https://doi.org/10.1037/0022-3514.79.2.204>
- Evans, G. W., Wells, N. M., & Moch, A. (2003). Housing and mental health: A review of the evidence and a methodological and conceptual critique. *Journal of Social Issues*, 59, 475-500.
<https://doi.org/10.1111/1540-4560.00074>
- Evans, G. W., Lercher, P., & Kofler, W. W. (2002). Crowding and children's mental health: The role of house type. *Journal of Environmental Psychology*, 22, 221-231.
<https://doi.org/10.1006/jevp.2002.0256>
- Evans, G. W., Saltzman, H., & Cooperman, J. L. (2001). Housing quality and children's socioemotional health. *Environment and Behavior*, 33, 389-399.
<https://doi.org/10.1177/00139160121973043>
- Gillis, A. R., Richard, M. A., & Hagan, J. (1986). Ethnic susceptibility to crowding: An empirical analysis. *Environment and Behavior*, 18, 683-706.
<https://doi.org/10.1177/0013916586186001>
- Gomez-Jacinto, L., & Hombrados-Mendieta, I. (2002). Multiple effects of community and household crowding. *Journal of Environmental Psychology*, 22, 233-246.
<https://doi.org/10.1006/jevp.23>
- Gover, W. R., & Hughes, M. D. (1983). *Overcrowding in the household: An analysis of determinants and effects*. Academic Press.
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis* (2nd Ed.). Guilford.
- Kiecolt, K. J., & Nathan, L. E. (1985). *Secondary analysis of survey data*. Sage.
- Krapf, S., & Wagner, M. (2020). Housing affordability, housing tenure status and household density: Are housing characteristics associated with union dissolution? *European Journal of Population*, 36, 735-764. <https://doi.org/10.1007/s10680-019-09549-6>.

- Lepore, S. J., Evans, G. W., & Schneider, M. L. (1991). Dynamic role of social support in the link between chronic stress and psychological distress. *Journal of Personality and Social Psychology*, 61, 899–909. <https://doi.org/10.1037/0022-3514.61.6.899>
- Meloen, J. (1993). The F Scale as a predictor of fascism: An overview of 40 years of authoritarianism research. In W. F. Stone, G. Lederer, & R. Christie (Eds.), *Strength and weakness: The authoritarian personality today* (pp. 47–69). Springer.
- Meuleman, B., Abts, K., Schmidt, P., Pettigrew, T. F., & Davidov, E. (2020). Economic conditions, group relative deprivation and ethnic threat perceptions: a cross-national perspective. *Journal of Ethnic and Migration Studies*, 46, 593–611. <https://doi.org/10.1093/esr/jcm034>
- Paulus, P. (2012). *Prisons crowding: A psychological perspective*. Springer.
- Roccato, M., Cavazza, N., Colloca, P., & Russo, S. (2020). A democratic emergency after a health emergency? Exposure to COVID-19, perceived economic threat and support for anti-democratic political systems. *Social Science Quarterly*, 101, 2193–2202. <https://doi.org/10.1111/ssqu.12865>
- Roccato, M., Corbetta, P., Cavazza, N., & Colloca, P. (2019). Assessment of citizens' populist orientations: Development and validation of the POPulist ORientation (POPOR) Scale. *Social Science Quarterly*, 100, 2148–2167. <https://doi.org/10.1111/ssqu.12704>
- Schaeffer, M. A., Baum, A., Paulus, P. B., & Gaes, G. G. (1988). Architecturally mediated effects of social density in prison. *Environment and Behavior*, 20, 3–20. <https://doi.org/10.1177/0013916588201001>
- Schneider, S. L. (2008). Anti-immigrant attitudes in Europe: Outgroup size and perceived ethnic threat. *European Sociological Review*, 24, 53–67. <https://doi.org/10.1093/esr/jcm034>
- Urbanska, K., & Guimond, S. (2018). Swaying to the extreme: Group relative deprivation predicts voting for an extreme right party in the French presidential election. *International Review of Social Psychology*, 31, 26. <https://doi.org/10.5334/irsp.201>.

van Damme, M. (2020). Overcrowded housing and relationship break-up. *European Journal of Population*, 36, 119-139. <https://doi.org/10.1007/s10680-019-09523-2>

XXX (2020). *The social-psychological consequences of COVID-19* [Data set].
https://osf.io/64sda/?view_only=0654e018dcda4d4dbcf02621bad29e09