# ESS CRONOS-2 Proposal

April 2021

<table>
<thead>
<tr>
<th>Proposed title for the module</th>
<th>In science we trust? Explaining (mis)trust in scientific disciplines across European countries</th>
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</thead>
<tbody>
<tr>
<td>Single or repeated measurement within the panel</td>
<td>Single measurement</td>
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<tr>
<td>Principle applicant</td>
<td>Prof. dr. Peter Achterberg</td>
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<tr>
<td>Position</td>
<td>Professor of Sociology</td>
</tr>
<tr>
<td>Institution (including name of University School or Department)</td>
<td>Department of Sociology, Tilburg University</td>
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<td>+31134662246</td>
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<td><a href="mailto:P.Achterberg@tilburguniversity.edu">P.Achterberg@tilburguniversity.edu</a></td>
</tr>
</tbody>
</table>

## Relevance and rationale (max. 600 words)

Over two decades ago, Haerlin and Parr concluded in Nature that: ‘[t]he relationship between the scientific community and the general public has never been worse in living memory’ (Haerlin & Parr, 1999, p. 49). By now, having witnessed an upsurge in literature dealing with the ‘post-fact era’, **issues of legitimacy of science, trust in scientific disciplines, and knowledge claims are as relevant as ever before** (Jasanoff & Simmet, 2017). If not even more so: Not only academically, as scholars try to explain individual, cross-national and longitudinal differences in the legitimacy of science among members of the general audience (Achterberg, de Koster, & van der Waal, 2017; Gauchat, 2012; Price & Peterson, 2016), but also for policymakers struggling to deal with societal implementation of scientific innovations and knowledge (Speed & Mannion, 2017). The issue is also relevant for members of the general audience, who are wondering what might explain public views on science of their fellow citizens (Lewandowsky, Ecker, & Cook, 2017).

Whereas in Europe systematic attempts to gather information on this issue remain scarce and, if available, are somewhat outdated (Eurobarometer 1989-2005), in this CRONOS-2-call we see a great opportunity to fill the gap with much needed comparative data on at least some of the issues that govern the scholarly field on trust in science. More specifically, there is a need for data that allows for a) explaining **cross-national variation** in levels of trust in science, b) explaining why levels of trust vary from **generalized trust in science** to trust in **specific scientific disciplines** and trust in **specific knowledge claims**, and c) explaining why some people trust some scientific disciplines and knowledge claims while distrusting others.

The proposed module includes three types of questions about trust in science, which focus on science at different levels of generalization (Rekker, 2021). First, we include three questions on generalized trust in scientific institutions. Secondly, we include six questions on trust in scientific disciplines. Thirdly, we include six questions on trust in specific scientific knowledge claims in those specific disciplines.

The availability of such data on trust in science in the countries within the CRONOS-2 framework, can be combined with information available from the core modules on human values, media and social trust, human values, politics, socio-demographics, gender, and subjective well-being in
future research. More specifically, we see two major areas in which the proposed data allow for research:

1) On societal polarization over science (Drummond & Fischhoff, 2017; Motta, 2018). The proposed module on (mis)trust in science, in combination with information on political background, would allow for testing hypotheses aimed at finding out whether left-wing and right-wing persons particularly polarize over science differently. Also, from this perspective, it can be understood why some left-leaning persons reject particular knowledge claims while accepting others and vice versa. The proposed module allows for examining whether and why trust in different knowledge claims and scientific disciplines are more politically polarized than trust in scientific institutions as a whole (Rekker, 2021).

2) On feminization of scientific disciplines and the prestige of scientific disciplines (García-Mainar, Montuenga, & García-Martín, 2018; LABOR, 2008). While labour force studies convincingly show that feminized occupations suffer from a lack of prestige (England, 1992), such devaluation mechanisms could also be at play in the scientific enterprise. The proposed module, in combination with national information on women's representation in specific disciplines, would allow for testing hypotheses predicting lower levels of trust in particularly feminized scientific disciplines, mirroring other finding about occupational prestige (Magnusson, 2009).

Suitability for the CRONOS-2 (max. 400 words)

Our proposal builds on the ongoing ESS data collections, most explicitly through our use of measures of trust in science which have been deliberately designed to resemble the repeatedly tested and widely used items on trust in (political) institutions from the core ESS modules (namely, “please tell me on a score of 0-10 how much you personally trust each of the institutions I read out”). This allows for a more nuanced understanding of patterns in (mis)trust in distinct scientific disciplines, while also accounting for identically measured predispositions to mistrust people and institutions in general. In other words, this facilitates the explicit examination of actual (mis)trust in science, parsing out other (related) social trends.

Importantly for this proposal, the core ESS modules also include detailed, country-specific information on voting behaviours, political preferences, and engagement with politics of a nationally representative sample of participants. This feature of the CRONOS-2 panel is crucial if we are to understand the possible polarization across the political spectrum in (mis)trust in science as a whole, as well as, in more precise representations of science (i.e., specific scientific disciplines and scientific claims associated with these disciplines).

Incorporating the proposed module in the CRONOS-2 panel, provides several other invaluable opportunities. Foremost, the cross-national and nationally representative samples mean that we can examine whether trends in (mis)trust in science can also be explained based on cohorts’ compositional characteristics (e.g., female representation in specific scientific disciplines as a test of the mechanisms stemming from devaluation theory; England, 1992). The cross-national and nationally representative samples ensure that we have enough power to examine this possible mechanism.

Importantly, the proposed module enhances the opportunities which the ESS data provide the scientific community. For example, this data collection will help better contextualize the findings based on preceding ESS data collections on attitudes towards climate change and
specific climate policies. Additionally, the proposed module can be an important resource for those working in the field of science communication as the data collection will allow for a better understanding of the roadblocks that we face as scientists in communicating with the general public.

The 15 questions elaborated on below are applicable in both EU and non-EU countries, as they do not refer to any specific (supra)national policies or features but rather, science as a whole, different agents of science, and disciplines which are represented across national educational systems.

Word count: 393

Research team (max. 250 words)

The research team is based in the Netherlands and Sweden.

Prof. dr. Peter Achterberg is a Professor of Sociology at Tilburg University, the Netherlands. He is interested in studying the public’s understanding of and support for science. Previously he has coordinated various surveys focused on trust in institutions and science, democratization of science. He is now involved in a number of projects studying political polarization (Funded by NWO-Norface) and vaccination uptake (Funded by Tilburg University). He has published on trust in science, conspiracism, vaccination uptake and political polarization.

Dr. Roderik Rekker is affiliated with the department of political science of the University of Gothenburg (Sweden), where he examines political polarization over facts and science. This project is part of a multidisciplinary research program on ‘Knowledge Resistance’ that was funded by the Swedish national bank (Rikshankens Jubileumsfond). Dr. Rekker has previously been the coordinator of the Dutch Parliamentary Election Study. In 2019 he was awarded a personal research grant (VENI) of 250.000 euro from the Dutch Research Council.

Dr. Katya Ivanova is an Assistant professor of Sociology at Tilburg University, the Netherlands. Though her main field of expertise is family sociology, her work also explores the wider societal repercussions of shifting gender dynamics in households and on the labour market, as well as, of the changing social construction of gender. Dr. Ivanova has been involved in designing and implementing large national data collections, such as the Dutch OKiN survey (Kalmijn, Ivanova et al. 2018).

Word count: 243

Feasibility of implementation (max. 800 words – excluding draft questions which can be in addition)

We aim to measure trust in science as a whole, trust in specific scientific disciplines, and trust in specific scientific claims using relatively straightforward questions. Identical or similar items have been used and validated in other surveys worldwide. Moreover, the general wording or our questions on trust has been adopted from the core module of the ESS. We therefore see no problems in administering these questions across the participating countries or other practical difficulties. The different timeframes are not a problem either, since we are interested in general patterns and relations between different concepts that are relatively constant over time.

Specifically, we propose the following 15 questions: (wording adopted from the ESS core module)
Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly...

1. General trust in science

A. The scientific method
B. Universities
C. Scientists

The first and the third item are adopted from Achterberg et al. (2017) yet instead of asking the respondents about the use of the scientific method, we ask them to indicate the level of trust in scientific methods. The second item is new. Answer categories are adapted to match those in the core ESS modules to measure trust in (political) institutions.

2. Trust in scientific disciplines

A. Sociology
B. Economics
C. Physics
D. Medical and health sciences
E. Environmental science
F. Agricultural technology

These items are adopted from the Eurobarometer survey, yet, instead of asking how scientific people deem these disciplines to be, we ask them to indicate the level of trust on a scale from 0-10.

3. Trust in scientific statements

Using this card, please tell me on a score of 0-10 how much you personally trust each of the following statements from scientists.

A. There are scientists who claim that upbringing by parents and the social environment have far greater significance for the development of sex differences than inborn differences in female and male brains. How much do you trust this claim?

B. There are scientists who reject plans to redistribute wealth by taxing the rich, because people with high incomes would decide to work less if their income tax is raised beyond a certain point, leading to a decrease in tax revenues for public spending. How much do you trust this claim?

C. There are scientists who claim that the universe expands at an increasing rate. How much do you trust this claim?

D. There are scientists who claim that antibiotics are ineffective against viruses because they only kill bacteria. How much do you trust this claim?

E. There are scientists who claim that the Earth’s climate is changing rapidly as a result of greenhouse gas emissions by humans. How much do you trust this claim?
F. There are scientists who claim that genetically modifying organisms is a safe and effective way to improve the productivity of agriculture. How much do you trust this claim?

These statements were chosen such that two items (B and F) are controversial to the political Left (Berman & Milanes-Reyes, 2013; Smyth et al., 2017), whereas two others (A and E) are controversial to the Right (Dunlap et al., 2016; Skewes, Fine & Haslam, 2018), and the final two (C and D) are non-politicized. Regarding research ethics, it is important to emphasize that these statements do not contain any false or misleading information: all six statements are actual scientific claims (e.g., Hyde & Mertz, 2009; Dunlap et al., 2016; Berman & Milanes-Reyes, 2013; Smyth et al., 2017).

Word count: 603

Dissemination plans (max. 250 words)

Dissemination to the scientific community will be pursued via publications in peer-reviewed journals and presentations at relevant scientific conferences. A testimony to the wide appeal of the proposed data collection are the divergent interests within the team. Whereas Prof. Achterberg and Dr. Rekker are interested in understanding and explaining the process of (political) polarization over science, Dr. Ivanova will focus on avenues of explaining mistrust in science which stem from theories grounded in the cultural devaluation of women’s work (England, 1992).

The data generated here will also be used by junior scholars who are currently pursuing their graduate studies (Rodrigo Cordova, 2nd year research master student at Tilburg University, working on politicization of science) or working on their doctoral dissertations (Mitchell Matthijssen, doctoral student at Tilburg University, examining vaccination hesitancy). Importantly, the new data will also be used for undergraduate and master-level theses at Tilburg University, supervised by Prof. Achterberg. Additionally, dissemination to non-European audiences will be pursued via podcasts such as Annex Sociology Podcast (based in Queens College, USA), which Dr. Ivanova has hosted.

Both Prof. Achterberg and Dr. Rekker have been actively involved in science communication to the general public, participating in outreach activities ranging from appearances in national and international media outlets (e.g., Al Jazeera English, VRT Nieuws, RTL Nieuws, NRC Handelsblad, De Volkskrant, EenVandaag Radio) to active engagement in widely read online platforms (e.g., the Public Understanding of Science Blog, Stuk Rood Vlees, Sociale Vraagstukken). These networks will be utilized in the outreach to non-academic audiences.

Word count: 250
References


Drummond, C., & Fischhoff, B. (2017). Individuals with greater science literacy and education have more polarized beliefs on controversial science topics. Proceedings of the National Academy of Sciences, 114(36), 9587-9592.


Professor Peter Achterberg
Department of Sociology, Tilburg University
email: P.Achterberg@tilburguniversity.edu
Google Scholar: https://scholar.google.nl/citations?user=nrQ3NtEAAAAJ&hl=nl

Education

2002 – 2006 PhD, Erasmus University Rotterdam, Department of Sociology
*Considering Cultural Conflict: Class Politics and Cultural Politics in Western Societies*
1998 – 2001 Master in Sociology, Erasmus University Rotterdam, Department of Sociology
1997 – 1998 Undergraduate in Sociology, Erasmus University Rotterdam, Department of Sociology

Employment history (since PhD defence)

2014 – present Professor of Sociology, Tilburg University, Tilburg school of Social and Behavioural Sciences, Department of Sociology
2010 – 2014 Associate professor, Erasmus University Rotterdam, Faculty of Social Sciences, Department of Sociology
2009 Assistant professor (non-tenured), Erasmus University Rotterdam, Faculty of Social Sciences, Department of Sociology
2007 Visiting scholar, University of Chicago, Department of Sociology
2006-2008 Post-doctoral researcher, Erasmus University Rotterdam, Faculty of Social Sciences, Department of Sociology

Supervision of PhD candidates

2020 – ongoing Promotor, Mitchell Matthijssen, *Understanding vaccine hesitancy*
2017 – ongoing Promotor, Michiel van Rijn, *Organizational forms and consequences of social entrepreneurship in international perspective*
2017 – ongoing Promotor, Angelica Mainieri, *The digital divide and e-privacy*
2018 – ongoing Promotor, Annemarie Balvert, *Citizen-friendly data communication*
2020 – ongoing Promotor, Erik Zeltner, *Career mobility of non-European fulltime master’s graduates from European higher education institutions*
2018 – ongoing Promotor, Erwin Gielens, *Unravelling the basic income debate*
2020 – ongoing Promotor, Francesco Marolla, *From losers of globalisation to winners of democracies: A comparative investigation of the recent populist wave*
2016 – 2020 Promotor, Francesca Zanasi, *Carers and careers: Grandparental care investment and its labour market consequences in Europe*
2011 – 2017 Co-promotor, Egbert Ribberink, *“There is probably no God” A quantitative study of anti-religiosity in Western Europe.*
2009 – 2015 Co-promotor, Katerina Manevska, Beyond the ethnic divide

Data collections relevant to current proposal


Selection of international peer reviewed publications


Grants & Fellowships (Selection)

2020 TiU/TSB research grant, Understanding Vaccine Hesitancy €250,000
2020 NOW/Norface, Threat, identity, and dissent: Understanding and addressing political polarisation in European democracies €190,000
2018 NWO-Research talent, Unravelling the basic income debate €225,000
2017 TiU/Impact research grant, Citizen-friendly data communication €250,000
Roderik Rekker, PhD

Political Scientist and Psychologist
Department of Political Science, University of Gothenburg
e-mail: roderik.rekker@gu.se
Google Scholar: https://scholar.google.nl/citations?user=KSV2VJ4AAAAJ

Education

2011 – 2016 PhD, Utrecht University: Department of Pedagogical Sciences
Interdisciplinary dissertation on the role of social inequality in juvenile delinquency and political socialization

2008 – 2011 Research Master Psychology (cum laude), University of Amsterdam
Specializations: Methodology and Clinical Psychology

2005 – 2008 Bachelor in Psychology (with honour), University of Amsterdam
Specialization: Clinical Psychology

2004 – 2008 Bachelor in Political Science, University of Amsterdam
Specialization: Political Theory and Behaviour

Employment history (since PhD defence)

2019 – present Postdoctoral researcher, University of Gothenburg: Department of Political Science. Examining political polarization over facts and science

2020 – present Researcher on VENI-grant (NWO), University of Amsterdam: Department of Political Science, Examining generational differences in vote choice

2017 – 2018 Postdoctoral researcher, University of Amsterdam: Department of Communication Science, Examining the impact of legal action against anti-immigration parties

2016 – 2019 Postdoctoral researcher & lecturer, University of Amsterdam: Department of Political Science. Co-coordinating and methodologically evaluating the Dutch Parliamentary Election Study (NKO); lecturing and coordinating courses on research methods

Supervision of PhD candidates

2020 – present Co-promotor, Thomas Jocker, PhD candidate, University of Amsterdam: Department of Political Science

2017 – 2021 Co-promotor, Sjifra de Leeuw, PhD candidate, University of Amsterdam: Department of Communication Science (PhD awarded cum laude)

Data collection

International peer reviewed publications


Grants & Fellowships

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<th>Year</th>
<th>Description</th>
<th>Amount</th>
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<tr>
<td>2019</td>
<td>VENI grant, awarded by the Dutch Research Council (NWO). <em>Proposal: Are millennials transforming politics? A study on generational differences in voting</em></td>
<td>€250 000</td>
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<tr>
<td>2012</td>
<td>Pittsburgh Youth Study Research Fellowship, awarded by the University of Pittsburgh: Department of Psychiatry. <em>Proposal: The within-individual association between socioeconomic status and juvenile delinquency</em></td>
<td>€5 000</td>
</tr>
</tbody>
</table>
Katya Ivanova, PhD

Assistant Professor of Sociology
Department of Sociology, Tilburg University
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web: www.katyaivanova.eu

Education

2012, March  PhD in Sociology, University of Groningen
             Promoters: Prof. dr. Melinda Mills and Prof. dr. René Veenstra
2007, May  Research Master, Development and Socialization in Childhood and Adolescence, Faculty of Social and Behavioural Sciences, Utrecht University
2005, May  BA (magna cum laude), Mount Holyoke College, MA, USA
             Major: Psychology; Minor: Politics

Employment history

09/2019 – current  Assistant professor (tenure track), Department of Sociology, Tilburg University (.5fte teaching + administrative tasks)
08/2016 – 08/2019  Project coordinator and postdoctoral researcher, Department of Sociology, University of Amsterdam
09/2014 – 07/2016  Postdoctoral researcher, Department of Public Administration and Sociology, Erasmus University Rotterdam (.35fte teaching)
10/2011 – 08/2014  Postdoctoral researcher, project “Remarriage in comparative perspective” (.25fte teaching)
09/2012 – 08/2014: Department of Sociology, University of Amsterdam
10/2011 – 08/2012: Department of Sociology, Tilburg University

Supervision of PhD candidates

2017 - current  Co-promotor, Maaike Hornstra, PhD candidate, NIDI / University of Amsterdam
2016 - 2021  Co-promotor, Kirsten van Houdt, PhD candidate, NIDI / University of Amsterdam

Data collection

Publications (last two years)


Grants & Fellowships (since PhD defence)

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Proposal</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>2020</td>
<td>Herbert Simon Research Institute seed funding</td>
<td>Who remains childless? Combining sociology and psychology in the study of nonparenthood</td>
<td>€10 000</td>
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<tr>
<td>2020</td>
<td>COVID-19 data collection grant, Tilburg School of Social and Behavioural Sciences</td>
<td>Fertility and fear of the future</td>
<td>€7 500</td>
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<td>2019</td>
<td>ODISSEI Microdata Access Grant application</td>
<td>Suicidal acts in the Dutch context</td>
<td>€8 000</td>
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<td>2015</td>
<td>EUR Fellowship, Erasmus University Rotterdam, the Netherlands</td>
<td>A competitive fellowship intended to finance highly rated by the NWO Governing Board Veni proposals</td>
<td>€135 000</td>
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<td>2014</td>
<td>Incoming postdoctoral fellowship, Université catholique de Louvain, Belgium</td>
<td>Relationships in complex stepfamilies and family members’ well-being</td>
<td>€100 000</td>
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