**The CO-RE Lab Mission Statement**

PI: Hans IJzerman

Laboratoire Inter-Universitaire de Psychologie : Personnalité, Cognition, et Changement Social (LIP/PC2S)

www.corelab.io

Version 2, January 2019[[1]](#footnote-1)

Research is incredibly hard. There is a near infinite number of paths one can take within the same research project, let alone in a research career. Nevertheless, research is fun. To help navigate the world of research uncertainty, we created this guide book that should help members of the CO-RE Lab[[2]](#footnote-2) do solid research while having fun. These guidelines should support us get on the same page with a shared philosophy and with tips to structure research projects. To ensure we get to the actual fun part, the intention is to revisit our work habits only once a year.

1. **Lab Goals**

In our lab, our goal is to investigate *co-regulation* in interpersonal relationships. Co-regulation can be defined as “the process by which relationship partners form a dyadic emotional system involving an oscillating pattern of affective arousal and dampening that dynamically maintains an optimal emotional state” (p. 202, Butler & Randall, 2013). At its most fundamental level, co-regulation occurs physiologically and likely mostly through a balancing – in dyads – of temperature and stress levels. The primary long-term goal is to understand these processes theoretically and to locate these physiological processes amongst higher-order cognitions (cognitions that reflect *predictions* about relationships, like attachment, feelings of commitment in relationships, self-reported emotions about relationships, and so forth). A secondary, but no less important, goal is to develop hardware to intervene in relationships *in real time,* so as to improve relationship quality and public health. We pursue these goals with open science ideals: By default, we commit to openly sharing as much as possible (papers, data, code, materials), and we commit to taking steps to ensure our experiments can be replicated by other labs.

1. **Lab Philosophy**

Working in the CO-RE lab means working to make new discoveries in relationship science. This will require hard work, but your work should have meaning and it should take place within a friendly and hospitable environment. For everyone’s long-term health, this means we should take care of our work-life balance. In addition, we care about high quality, open science (and much less about things like Journal Impact Factor), which is reflected in our research philosophy. Below more details.

* 1. ***Research Life Philosophy***

We care about an environment that is inclusive, transparent, critical, and civil. First and foremost, we feel very strongly that the lab should be a welcome place for all good researchers, regardless of age, ethnicity, gender identity, sexual identity and orientation, body size, political affiliation, religion, or level of experience. That means that every member of the lab should be able to criticize findings from the lab (including – or especially – those from the PI). Every member of the lab commits to holding the standard of inclusivity in high regard when working with the lab. Further, the lab members commit to being critical of one’s own, each other’s, and other’s research finding while not engaging in “ad hominem” attacks.

If someone in the lab is unable to resolve a conflict within the lab (or does not dare to address the issue, for example when dealing with the PI), the first point of contact is the director of the “labo” (Dominique Muller; [dominique.muller@univ-grenoble- alpes.fr)](mailto:dominique.muller@univ-grenoble-alpes.fr)). If you feel uncomfortable addressing an issue with someone so close, there is also the “Espace écoute” that you can contact, an independent office within the university ([alerte-rps@univ-grenoble-alpes.fr)](mailto:alerte-rps@univ-grenoble-alpes.fr)).

* 1. ***Research Philosophy***

The primary goal of our lab is to “foster an environment of consistent scientific excellence and personal development that supports every lab member in reaching their full potential, and helps us have fun while doing great science”[[3]](#footnote-3). Research requires solid habits, but also being flexible and requires long and hard thought. Many things go wrong during the research process (including your and my a priori predictions). This requires planning and reaching a number of milestones.

This means that we should care about carefully planned research timelines, that we care about replications, about crowd-sourced projects, and, most of all, about being transparent (this includes, of course, granting people credit where credit is due). The policy applies to all products from the lab: stimuli, analyses scripts, raw (but de- identified) data, and the paper. Our policy has consequences for how we work, because sharing all the materials only after the process has ended is simply too difficult. When you work with collaborators outside the lab, please share how we work before you start a study (as not everyone may agree with our approach and need to be discussed).

We favor Open Access, as research should be available to the tax payer. However, there may be reasons not to submit to an Open Access journal. We still work within a context that imposes other constraints. For example, you may want to strengthen your position on the job market, and institutions you want to apply to favor the “journal impact factor”. Additionally, most universities are still judged on the impact factor of the journal they publish in. While we favor open access, we will make the publication decision on a case-by-case basis (all publications should be at least “Green” Open Access). From time-to-time, the university will require us to add our publications to “HAL” (<http://hal.univ-grenoble-alpes.fr)>.

Broadly, we will have three types of research projects:

* + 1. ***Original Research (Lab workspace)***

Original research is what keeps our lab going and will be the main focus of our lab. We will have a very clearly defined workflow for our original research. All original research will be separated into exploratory and confirmatory research projects and will follow the guidelines from the [CO-RE Lab workspace](https://osf.io/q29nf/).

* + 1. ***Replications***

Each year, we will dedicate about 10-25% of our research resources to replication research. Which replications will be conducted will be decided by all lab members jointly (possibilities remain to participate in large-scale replication projects, like ManyLabs, or the Collaborative Research and Education Project – for younger lab members).

* + 1. ***Contributions to crowd-sourced projects***

Instead of large-scale replication projects, we can plan to participate in crowd-sourced projects (often available for novel studies). The current focus will be on participating in the [*Psychological Science Accelerator*](https://psysciacc.wordpress.com/blog/)*.*

1. **Being in the Lab**

Upon entry in the lab, each lab member is expected to create a profile at the [Open Science Framework](http://www.osf.io/). Each member should also be able to (and will be expected to) double-check one’s own and each other’s work. We value honesty, even when it’s difficult. But, be patient with one another and support each other, especially those more junior.

* 1. ***Postdocs***

Postdocs should slowly move towards the role of PI (whether they proceed in the

academy or in industry after their postdoc role), which includes giving talks,

seeking external collaborations, and being involved in the decision-making process

of the lab.

* 1. ***PhD Students***

PhD students should be obsessive about knowing the literature (often even

better than the PI and the postdocs). They should also seek out fellowships and

travel awards so as to build their cv. During their studies in the lab, they are

encouraged to do at least one research visit abroad. PhD students are also in the

best position to work with and learn new methods and will be supported in

making progress on these issues.

* 1. ***Research Managers***

Research managers (usually known elsewhere as research assistants) should

focus on helping keep our research life organized. The more advanced project

managers (often those after their master’s degree) should function more closely

to our PhD students. Research managers are encouraged to talk with the PI and

postdoc to help them support in their career development. Research managers

can expect to have at least one formal discussion with the postdoc and PI for

career development.

* 1. ***More junior students***

Master students are expected to function as a junior PhD student (thus, scaled down

in terms of their commitment and presence at the university).

1. **Working hours**

Research is usually not a 9-17 job. However, social interaction is needed to do solid science and to be happy. That means for those that are with us full time, we are at least three (preferably four) days at the university. From January on, we do a “stand up” at 9am to share our activities for the day/next few days. Although this may sound silly, it helps getting everyone on one page. We will also have lunch and do lab meetings with the overarching “lab” so as to facilitate interaction with our colleagues. If you are planning to be away for more than one working day, please let each other know via Slack (in our “general” channel).

As members of the CO-RE lab, it is also important to achieve integration into the broader laboratoire (LIP/PC2S). Other people who do not directly work with us can give us helpful feedback, and you can give them helpful feedback. In addition, it is also just fun to get to know your colleagues better. To integrate in the department, on Mondays (12.30) we have the Atelier Marguerite, where the lab members discuss articles and give presentations. From time-to-time, on Fridays, we have meetings from the Social Cognition Axis. Your presence at both is highly recommended.

1. **Tools in/for the lab** 
   1. **Open Science Framework**
   2. **R**
   3. **Zotero**
   4. **Qualtrics**
   5. **Android Phones**
   6. **Our Bio-App: https://github.com/co-relab/bioapp**
   7. **BlueMaestro TempoDiscs**
   8. **MyTemp Temperature Sensor**
   9. **EMBR Wave Temperature Manipulation (+ Software)**
   10. **Testweek data (collected from all students at the beginning of the year, programmed by CO-RE Lab Members).**

**Your Accounts**

There are a couple of accounts that you will very likely need during your academic career. Upon arrival at the CO-RE Lab, we will thus ask you to create an OSF, GitHub, and Orcid account. After your first publication, we will ask you to create a Google Scholar account. We also suggest (but do not require) to create either a Twitter or Facebook account to keep up-to-date with the latest discussions in science.

**Webpage Setup**

Our lab website (<https://corelab.io/>) can be edited by anyone in the lab and is a good introduction to R Markdown and GitHub. Information on editing the website and how it works is available on the GitHub page that builds it, here: <https://github.com/co-relab/co-relab_source>. For full control of the website and domain, you’ll need:

1. Added with admin access on the lab GitHub Organization: https://github.com/co-relab/
2. The lab Netlify account.
3. The lab namesilo.com account.

Ask Hans if you’re not sure where to find this login info.

When feasible, we release “products” on the webpage. These are often publications, but may also be useful pieces of code that we document to allow others to use them. We encourage members and interns to think about things they could release, and we’ll help spread word of these items on social media and other relevant outlets.

We strive to make our talks open as well. When a lab member gives a talk, they should upload their slides to a public repository (GitHub or the OSF) and add it to the list of lab presentations: <https://github.com/co-relab/presentations-core-lab> (before your presentation, this website can be worthwhile to see if your presentation is not too long or too short: <http://www.speechinminutes.com/)>.

**Novel Tools**

Each year, we try to integrate new tools into our workflow. There are two tools that we are trying to integrate to test their effectiveness. The first one is RMarkdown. We will try to use RMarkdown for new manuscripts we write in the lab. The second is GitHub. We will use GitHub for our webpage and will try to start using GitHub in our data and code management.

**Testweek Data**

Every year, we collect data from psychology students. The following was included in the 2018-2019 batch:

* Big Five: OPEN, AGREE, CONSC, EXTRA, NEURO
* Specicism Scale
* Rosenberg Self-Esteem
* Self-Control
* Social Thermoregulation and Risk Avoidance Questionnaire
* Experiences in Close Relationships
* Self-Reported Stress
* Social Network Index
* Prejudice towards Northern Africans
* Right-Wing Authoritarianism
* UCLA Loneliness Scale
* Social Dominance Orientation
* Depression Anxiety Stress Scales
* The Warwick-Edinburgh Mental Well-Being Scale
* Orientation towards the Positive
* Intuition Scale
* Single items:
  + Conspiracy belief
  + Sex: sex (male, female, other)
  + Year of study: studyyear (L1, L2, L3, M1, M2)
  + Participant’s Height: height (in cm)
  + Participant’s Weight: weight (in kg)
  + Whether participants smoke (y/n)
  + If they smoke, how many cigarettes per day
  + Self-reported Health (one item, from World Health Organization)
  + Energy costs in January: costsjanuary
  + Energy costs in July: costsjuly
  + How many people are in the participant’s house?
  + How many square meters does the house have?
  + What is the temperature of the house in the summer?
  + What is the temperature of the house in the winter?
  + What is the participant’s preferred temperature of the house?
  + Test identification number that can be linked with experiments
  + Time of day that participants finished the survey?

**If you want to connect the data above to your experiments:**

In the testweek, we asked participants to include a code that only they know. In dentififiedtestweek2018.csv this is variable “testid”. This variable will allow you  - for those who participated in the testweek - to connect their individual difference variables to your experiments. If you want to do this, you can use the text below to connect the two. (NB if you plan on running interactions, make sure you properly power your study: [https://approachingblog.wordpress.com/2018/01/24/powering- your-interaction-2/)](https://approachingblog.wordpress.com/2018/01/24/powering-%09your-interaction-2/)).

**PERSONAL CODE INSTRUCTIONS**

**CODE PERSONNEL**

Avant de commencer, nous allons créer un code personnel que nous vous redemanderons à chacune des études que nous proposerons. Si vous avez déjà participé à une de nos études, ce code doit vous être familier !

L'idée est que vous ayez un code personnel unique que vous puissiez retrouver facilement par la suite tout en restant anonyme (nous ne pourrons pas vous identifier sur la base de ces informations).

 Ce code se compose de 3 lettres et 2 chiffres :

La première lettre du prénom de votre mère La première lettre du prénom de votre père La dernière lettre de votre nom de famille Les deux derniers chiffres de votre année de naissance. S'il vous manque une, ou plusieurs, des informations, notez simplement 0 à la place. S'il s'agit d'un prénom composé (ex : Jean-Pierre), notez l'initiale du premier prénom (ex : J).

Ex : Ma mère s'appelle Marie-Christine, mon père s'appelle Patrick, mon nom de famille est Dupont, je suis né en 1986. Le code que je note est donc :  **MPT86**

**Standard Pieces of R Code to be used for Analyses**

In the next years, we have the goal to create or find standard pieces of R Code to be used for analyses and data visualization. When you work on your code, create it in such a way that we can easily reuse later. Below are helpful pieces of code from others (lab members are encouraged to add).

* R Code for Violin Plots (<https://peerj.com/preprints/27137v1/>)
* R Code for GGStatplot (<https://github.com/IndrajeetPatil/ggstatsplot/blob/master/README.md>)

**BSHM:**  
*Contact:*  
Nicolas Bochard (LIP/PC2S Study engineer) / E-mail address: [nicolas.bochard@univ-grenoble-alpes.fr](mailto:nicolas.bochard@univ-grenoble-alpes.fr) / Office N°D201 / Phone number: 04 76 82 59 06 — 06 81 834 834

*Procedure to request space*:  
The research leader has to book the needed room in a shared Google Agenda, available [here](https://www.lip.univ-smb.fr/expe/). One needs to have an access to the LIP/PC2S intranet to do so.

**SCREEN:**  
*Contact*:  
Morgane Brunel / E-mail address: [morgane.burnel@univ-grenoble-alpes.fr](mailto:morgane.burnel@univ-grenoble-alpes.fr)/ Office : Screen platform in [MSH-Alpes](https://www.msh-alpes.fr/fr/venir-msh-alpes)

*Material/room*:

*Procedure to request space*:

(1) The experimenter or research leader fills in [this form](https://www.msh-alpes.fr/resa-screen) stating precisely who is the responsible (has to be an associate professor), a summary (here, specifying if the study will likely be published when the information is available may be a good idea), the material/room needed, date, et cetera.

(2) If the request is accepted, the person in charge receives a confirmation mail and has to book the material and room [here](https://discovery.renater.fr/renater/?entityID=https%3A%2F%2Freservations.msh-alpes.fr%2Fresa&return=https%3A%2F%2Freservations.msh-alpes.fr%2FShibboleth.sso%2FLogin%3FSAMLDS%3D1%26target%3Dss%253Amem%253A1215b064fe624c414db0d010e89fb447497ee5c0d8).

**ON CAMPUS:**  
Depending on the study design and specific needs, going outside the lab may be a good idea to recruit participants outside psychology. These places are however often noisy and not dedicated to research (be careful with the material safety). Possible (non-exhaustive) places could be:

* First floor of the building “BU droit-langue”
* “Galerie des amphis”
* First floor of ARSH
* Café littéraire
  1. **Available Measurement Instruments**

The different locations also have different measurement instruments. These are the following:

**SCREEN**

* TOBI X2-60 Eye-tracker
* FaceReader software to recognize the six basic facial expressions
* Observer XT software to analyze observational data
* MP36 and SS2LB Biopac Systems to perform electrocardiogram and electromyogram
* Bioharness 3 belt for physiological measures (e.g., heart rate)
* Cold pressor Techne RU 200 to measure one’s pain tolerance (cold test)
* Inquisit and E-prime software to program studies
* MLT422/A Skin Temperature Probe
* Unheated Bath TU-20D and dep coolers to cool and warm water
* 12 laptops
* Five rooms: 1 dedicated to physiological measures (electrocardiography and electrodermal response); 1 for group studies (4 participant at a time); 2 for individual studies; 1 for group studies (12 participants).

More details on the SCREEN webpage [here](https://www.msh-alpes.fr/en/screen-service-commun-ressources-l’experimentation-l’equipement-numerique).

* 1. **Tools at BSHM**
* 6 closed cubicles for individual studies with desktop computer equipped with E-prime software (programming studies)
* 1 room with 8 desktop computers for group studies and for VR studies.

1. **Open Science Policy**

It has already been emphasized multiple times, but our lab policy is open everything: Open data, open materials, and open publications. There are good reasons to have exceptions to this general rule, to be discussed in the lab (the PI always has final responsibility). While we have the open everything rule, be reasonable in your interaction with colleagues.

1. **Running Studies**

***Important:*** We start each project by starting a project on the Open Science Framework and explicitly label the project exploratory or confirmatory. These projects are divided into different milestones. The milestones we reach during our research are relatively easily outlined in [our workspace](https://osf.io/q29nf/). Besides the milestones needed to conduct research properly, some additional steps must be followed. All steps below (about before the study and during the study) apply for the BSHM. All except one (before the study, (2)) apply to running a study at SCREEN. Running the study on campus should always be discussed with the PI and other lab members. The following part is a brief summary from the procedure described [here](https://www.lip.univ-smb.fr/expe/), make sure to check the linked document before running a study if you have access to the latest version.

Research leaders (from PhD students to Associate Professors) have access to this website and are supposed to convey the information to researchers they work with (e.g., M1 or M2 students).

**BEFORE THE STUDY:[[4]](#footnote-4)**

(1) The research leader has to register the study by filling this [Google Form](https://docs.google.com/forms/d/e/1FAIpQLSd81GAfcMGulAUvxUM0buU9SIihgR0WhQbjhC9xOD88_P_JnA/viewform?c=0&w=1). Information about the date, place, rewards, funding of the study are needed here. A number will here be assigned to the study (e.g., LIP\_17-18\_XX where XX is the number attributed), it is crucial to note it. This number will be needed in every communication (e.g., recruiting ad) with participants and with the administration.

(2) The research leader then needs to book the place where the study will be conducted (see “possible location for data collection” below to have more information).

(3) The experimenter can now recruit participants, which can be done via various, non-exclusive ways:

* Put an ad on the board dedicated to this aim on the BSHM first floor. [This document](https://www.dropbox.com/s/yx1t38cwlbrfmqq/Affiche_Experience-inscription-directe.docx?dl=0) is a template for an ad where participants sign up directly whereas [this one](https://www.dropbox.com/s/sfrajtsgwzugut8/Affiche_Expe-inscription-en-ligne.docx?dl=0) is better when participants have to sign up online\*
* Create a Google page ([see a model here](https://sites.google.com/site/corelabugaetudeeclair/)) or a Qualtrics form in which all information participants could need is indicated. Send the link to Nicolas Bochard ([nicolas.bochard@univ-grenoble-alpes.fr)](mailto:nicolas.bochard@univ-grenoble-alpes.fr)) so he can post it on the LIP/PC2S website ([here](https://www.lip.univ-smb.fr/etudes-experiences/)). Students can access this via their university personal space
* Post an advertisement on two Facebook pages: [this one](https://www.facebook.com/ExpesPsychoGrenoble/?ref=your_pages) is for studies in which participants get paid and [this one](https://www.facebook.com/Expériences-Psychologie-Grenoble-1017930468234677/?ref=bookmarks) for studies where it is not the case. See the list of the page administrator so they can post for you if you are not. These pages are most of the time used by students. Posting an advertisement on the [CO-RE Lab Facebook page](https://www.facebook.com/CoRegulationLab/) may also be a good idea for non-student participants
* For non-students participants: Send an e-mail via the CO-RE lab database, the MSH database (contact: [morgane.burnel@univ-grenoble-alpes.fr](mailto:morgane.burnel@univ-grenoble-alpes.fr), paid studies only), or the [RISC](http://expesciences.risc.cnrs.fr/formulaire_expe.php) database

\* Create a [Doodle](https://doodle.com/fr/) (see example [here](https://doodle.com/poll/54m9gf5vv974it4d)) or [Evento](https://evento.renater.fr/) poll for participants to sign up directly online. Evento is better in terms of data privacy but participants are not invited to indicate their phone numbers (which can be very useful to remind participants of their appointment).

**DURING THE STUDY:**

(1) When starting a study with a participant, the experimenter is obliged to let every participant fill in and sign a consent form (see example [here](https://www.dropbox.com/s/1964w3h3omjgcv3/Formulaire%20consentement.docx?dl=0)). These forms need to be stored after finishing the experiment.

(2) For each participant, the experimenter has to fill in [this Excel file](https://www.dropbox.com/s/943cpomixohtvkz/LIP_17-18_XX.xlsx?dl=0) (make sure you to download the excel form via this link before each study to have the latest version, which you can find [here](https://www.lip.univ-smb.fr/expe/)). For student participants, specific information (i.e., Date, Study N°, Name, Surname, Student’s N°, Topic in which the bonus point will be granted…) needs to be registered to provide their extra credit. For non-students, information is still needed to keep track of the participants and the reward they got (e.g., money, gift certificate). Information for both can be registered on the Excel sheet.

(3) For student participants: The experimenter fills in and signs a separate “individual participation sheet” for every participant. Each participant has their own sheet. These sheets, now called “feuille rose” (color changes yearly), should be picked up before an experiment from the LIP/PC2S department manager’s office from Anne Chabaud. Although most students have their own sheet, experimenters can create a new sheet if the participant has not received one yet (the purpose of these sheets is that so that the participant can proof he/she took part in case of e.g., a technical issue. It also allows the experimenter to check for example if the participant has already taken part in a study).

**AFTER THE STUDY**:

Once the study is finished, the experimenter checks in the Excel file if everything is correctly indicated and renames this file with the number assigned to the study (i.e., LIP\_17-18\_XX where XX is the study number). If there are errors in the Excel file, this will be addressed at “standup”. If everything is correct, she/he has to send it to Nicolas Bochard ([nicolas.bochard@univ-grenoble-alpes.fr)](mailto:nicolas.bochard@univ-grenoble-alpes.fr)).

**INDEPENDENT CODE/MATERIALS REVIEW**

If the study is intended for publication, following the workflow dictated in the [lab workspace](https://osf.io/q29nf/) you must retain an outside researcher (e.g., not in your group) to verify your materials and error-check. This researcher should verify the following aspects:

1. Run the analysis code and ensure it goes from raw data to final dataset.
2. Review the analysis code for errors.
3. Ensure numbers reported in the manuscript are the same as those generated by the analysis script.
4. Verify deidentification of data.
5. Review the OSF page of the project for public consumption (ease of navigation, sufficient documentation, contains necessary data/scripts).

By default, this independent reviewer (usually a member of another group in the lab) earns authorship on any resulting manuscript, in the “least valuable” position (typically second-to-last author). The manuscript should also clearly note the role of this author in the Author’s Note or contributions statement. This review is generally expected to work reciprocally, with lab groups reviewing each other’s code.

**REWARDS**

Psychology, sociology and education students can be rewarded extra credit for their grades in exchange for participation, with 0,25 point added to one topic for 15 minutes of experiment (max 1 point/topic).

It is also possible to pay participants with cash. The current payment scheme is available [here](https://www.dropbox.com/s/enc6lo0gllhkf6n/7-3-delib-indemnisation-sujets-experience-rech.pdf?dl=0). A 1 hour experiment should allow participants to get 10 euros. If the experiment lasts less than this, there are two options: calculating a pro-rata pay (e.g., 5 euros for half an hour) or still give 10 euros to compensate the travel to the experiment location. Before starting the study, it is required to see Anne Chabaud (LIP/PC2S secretary’s office) the specific documents needed for accounting issues.

1. **Public Engagement**

Reaching out to a non-specialist audience is essential to being a scientist. It’s a way to give back to the taxpayer what we receive from them. The first way to do so is by staying in touch with our participant database (and writing short and fun reports for them). A second way is by giving interviews to the press (often by the postdocs, advanced PhD students, and the PI) and writing op-eds. A final way to do so is by reaching non-specialist audiences in a more in-depth way. I encourage each lab member to write at least one “[In-Mind](http://www.in-mind.org/content/for-article-authors)” article during the time they are here.

1. **Lab Canon (Central Readings)**

We hold both theory and methods in high regard. The below is necessarily limited to a few central readings. Lab members are always encouraged to read beyond the central canon. Submissions to our canon will always be considered ([h.ijzerman@gmail.com](mailto:h.ijzerman@gmail.com)).

Aschwanden, C. (2015). Science isn’t broken, it’s just a hell of a lot harder than we give it credit for. Available at 538: <https://fivethirtyeight.com/features/science-isnt-broken/>.

Barsalou, L. W. (1999). Perceptual symbol systems. *Behavioral and Brain Sciences*, *22*, 637-660. Available at <https://bit.ly/2r3X1Kr>.

Bastart, J., Klein, R. A., IJzerman, H., (2018). Replication initiatives in psychology. *Oxford Bibliographies in Psychology.* Available at PsyArxiv: <https://psyarxiv.com/h5jm7/>.

Beckes, L., & Coan, J. A. (2011). Social baseline theory: The role of social proximity in emotion and economy of action. *Social and Personality Psychology Compass*, *5*, 976-988. Available att <https://bit.ly/2Jvfbwv>.

Beckes, L., IJzerman, H., & Tops, M. (2015). Toward a radically embodied neuroscience of attachment and relationships. *Frontiers in human neuroscience*, *9*, 266. Available at <https://www.frontiersin.org/articles/10.3389/fnhum.2015.00266/full>.

Brandt, M. J., IJzerman, H., Dijksterhuis, A., Farach, F. J., Geller, J., Giner-Sorolla, R., ... & Van't Veer, A. (2014). The replication recipe: What makes for a convincing replication?. *Journal of Experimental Social Psychology*, *50*, 217-224. Available at <https://bit.ly/2HV2ca3>.

Butler, E. A., & Randall, A. K. (2013). Emotional coregulation in close relationships. *Emotion Review*, *5*, 202-210. Available at <https://bit.ly/2HVjVhO>.

Fiske, A. P. (1992). The four elementary forms of sociality: Framework for a unified theory of social relations. *Psychological Review*, *99*, 689. Available at <https://bit.ly/2HvQM9o>.

IJzerman, H., &Hogerzeil, L. J. (2017). People as penguins: Thermoregulation as part of the human essence. In J. Dovidio & M. van Zomeren (Eds.). *Oxford Handbook of Human Essence.* Available at <https://psyarxiv.com/zrtg6/>.

IJzerman, H., Lindenberg, S., Dalgar, I., Weissgerber, S. C., Vergara, R. C.,… & Zickfeld, J. (2017). The Human Penguin Project: Climate, social integration, and core body temperature. Available at PsyArxiv: <https://psyarxiv.com/6b7ne/>.

Klein, R. A., Ratliff, K. A., Vianello, M., Adams, R. B., Jr., Bahník, S., Bernstein, M. J., Bocian, K., … Nosek, B. A. (2014). Investigating variation in replicability: A "many labs" replication project. *Social Psychology, 45*, 142-152. Available at <https://bit.ly/2qZJrrm>.

Klein, R. A., Vianello, M., Hasselman, F., Adams, B. G., Adams, R. B., Jr., Alper, S., … Nosek, B. A. (2018). Many Labs 2: Investigating Variation in Replicability Across Sample and Setting. <https://doi.org/10.31234/osf.io/9654g>

Munafò, M. R., Nosek, B. A., Bishop, D. V., Button, K. S., Chambers, C. D., du Sert, N. P., ... & Ioannidis, J. P. (2017). A manifesto for reproducible science. Nature Human Behaviour. Available at <https://www.nature.com/articles/s41562-016-0021>.

Nuñez-Villegas, M., Bozinovic, F., & Sabat, P. (2014). Interplay between group size, huddling behavior and basal metabolism: an experimental approach in the social degu. *Journal of Experimental Biology*, *217*, 997-1002. Available at <http://jeb.biologists.org/content/217/6/997.full>.

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, *349*(6251), aac4716.

Proffitt, D. R. (2006). Embodied perception and the economy of action. *Perspectives on Psychological Science*, *1*, 110-122. Available at <https://bit.ly/2r2MPCP>.

Rouder, J. & Vandenkerckhove, J. (2018). Methods for reliable, transparent, and open science. Available at <https://github.com/rouderj/transparent-science-course>.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science, 22*(11), 1359–1366. https://doi.org/10.1177/0956797611417632

Strobl, C., Boulesteix, A. L., Kneib, T., Augustin, T., & Zeileis, A. (2008). Conditional variable importance for random forests. *BMC Bioinformatics*, *9*, 307. Available at <https://bit.ly/2r12MJT>.

van't Veer, A. E., & Giner-Sorolla, R. (2016). Pre-registration in social psychology—A discussion and suggested template. *Journal of Experimental Social Psychology*, *67*, 2-12. Available at <https://bit.ly/2qZkJbC>.

1. This lab manual is inspired by Davide Crepaldi’s lab guide, whose lab guide was in turn inspired by Jonathan Peele. It was drafted by Hans IJzerman, Lison Neyroud, and Rick Klein. [↑](#footnote-ref-1)
2. The designation “lab” is intended to communicate with the Anglo-Saxon world and, in our case, the CO-RE Lab is a part of the overarching lab at Université Grenoble Alpes, Laboratoire InterUniversitaire de Psychologie:, Personnalité, Cognition, et Changement Social. [↑](#footnote-ref-2)
3. Stolen directly from Jonathan Peele’s lab manual. [↑](#footnote-ref-3)
4. Note that we can only assign credit points to students because they can receive credit in the PI’s courses. [↑](#footnote-ref-4)