Point of View

an educational game on research integrity

Explanation and suggestions for instructors

Table of contents

Introduction 3

Learning goals

Technical instructions 4

Suggestions for discussion after the game 5

Dilemmas within the game (summary)

Potential discussion questions

For each dilemma

Ethical responsibility of the researcher

Dealing with data

Group work

Science as a community

Values and principles

Acknowledgements 9

Appendix: detailed game description 10

Introduction

Point of View is an educational game on research integrity targeted at research master's students.

There are two components to the game as designed: an online game in small groups (3–4 members) and a consecutive discussion with (usually) the entire seminar group. The duration of the online game is approximately 40 minutes. Including a discussion the entire session should fit a block of 2 x 45 minutes.

In the online game, students are assigned a character for whom they have to make decisions. The character faces a series of dilemmas concerning research integrity. The dilemmas are all 'grey' – different perspectives are possible and multiple answers are defensible. All game characters are research master's students, but they all have their own backgrounds and goals. This means that, by design, different points of view on the dilemmas are incorporated into the game. See the appendix for a detailed description of the game.

The game play is designed to require no direct instruction or supervision, but the discussion should be led by an instructor with knowledge about research integrity. This document provides suggestions for such a discussion, but the best course and content of the discussion in each given situation will depend on the level of knowledge and experience of the students.

Learning goals

- Students have become aware that many of the most common and important questions concerning research integrity concern 'grey areas' rather than black-or-white matters. They have become aware that for this reason, every researcher must be capable of reflecting on such questions.
- Students have experienced:
  * Common dilemmas for graduates in research
  * The value of guidelines, such as the ALLEA Code of Conduct
- Students have discussed:
  * A range of research dilemmas on different topics, appropriate to their own field of study
  * The relevance of values or principles in academic research (e.g. honesty, transparency, scrupulousness and responsibility)

Technical instructions

To start the game

Each group of students (ideally 3–4 members) plays with one laptop. Students start the game by entering one of the links below, followed by the code provided by the instructor.

1. Go to https://pointofviewgame.nl/ and click the 'instructor' button.
2. Come up with a group code (this can be anything, but be sure to note it down).
3. Share a unique playing link and the group code with each of the student groups. Note that the code is case sensitive!

CHARACTER	LINK
Yara Andersen	https://pointofviewgame.nl/chat/uue_main?character=a
Toby Berger	https://pointofviewgame.nl/chat/uue_main?character=b
Luca Castro	https://pointofviewgame.nl/chat/uue_main?character=c
Yara Daelen	https://pointofviewgame.nl/chat/uue_main?character=d
Toby Ehmer	https://pointofviewgame.nl/chat/uue_main?character=e
Luca Faria	https://pointofviewgame.nl/chat/uue_main?character=f
Yara Gabriels	https://pointofviewgame.nl/chat/uue_main?character=g
Toby Hubar	https://pointofviewgame.nl/chat/uue_main?character=h
Luca Inacio	https://pointofviewgame.nl/chat/uue_main?character=i
Yara Jacobsen	https://pointofviewgame.nl/chat/uue_main?character=j

There are three versions of the game: one in which students play with Yara, one with Toby and one with Luca. In order to allow a larger number of students to play at the same time, multiple of these games can be played in parallel (Yara Andersen, Yara Daelen, etc.). The maximum number of groups that can play under one instructor at the same time is ten.

A workaround for groups over 40 students (ten groups of four) is to either have the students play in larger groups or to run two parallel sessions with distinct codes (these will then each have a separate dashboard).

The instructor link leads to a dashboard with all responses by each group of students. These can be used as a jumping-off point for the discussion afterwards. It can be interesting to show this dashboard to students, to make them aware of the variety in answers.

The students encounter four dilemmas. For the first three, they have to give an intial answer, after which they receive or can gather some more input and information. They then have a chance to revise their answer. For the fourth dilemma, there's only one moment to respond.

After choosing a response, students receive an in-game reaction by one of the other characters that emphasises how their choice affected others.

Suggestions for discussion after the game

Dilemmas within the game (summary)

Some of the discussion pointers overlap significantly with Utrecht University's Academic integrity checklist. They are suitable for use in conjunction with it.

The dilemmas students encounter in the game are the following:

1. Whether to use a dataset available from a repository
2. Whether to leave out some data from their dataset in order to get significant results
3. How to deal with a group member who has been ill and has put in almost no work
4. Whether to hand over the results of the study to the PhD candidate who collected the dataset so that the PhD candidate can use the results for a publication

A full description of the dilemmas is included in the appendix.

Potential discussion questions

Below are some suggestions for topics that can be discussed on the basis of the game. Some are quite narrowly about dilemmas students have come across within the game; some take their point of departure from these dilemmas, but are more broad. Obviously, there are many more possible discussion topics and the instructor should select and add topics based on the student group.

For each dilemma

- Did you find it immediately evident what to do in this situation, or did you hesitate? Which options were immediately out of consideration and which ones did you consider? Why?
- Did you have a discussion in your group on which course of action to take? What were the points of disagreement?
- Do you have any previous experience with this kind of situation? What happened and are you happy with the way things unfolded? What would you do differently or what would you advise someone in a similar position?

Since different groups represented different characters with different interests, groups may have used different considerations. All of the dilemmas are such that multiple (though not necessarily all) answers can be considered defensible. At the same time, it is

possible to point out, using examples from the game, that different circumstances can make people vulnerable to making choices that are at odds with research integrity. For instance, a very ambitious student such as Toby may want significant results so much that they might be willing to sail close to the wind with regard to what is ethically defensible. A student who is financially vulnerable or who is on a visa, such as Luca, may feel very pushed to finish a project quickly and might be tempted to take shortcuts. This can be interesting and important to discuss.

Ethical responsibility of the researcher

- The clues about the data set indicate that the research subjects may not have given informed consent. The reason given was that standards in the country where the data were collected are different. Do you think this is relevant? What responsibilities does a researcher have for their research subjects? Is this responsibility different if the data were collected by someone else?
    - If students say they think they have no responsibility for the ethical conditions of an existing dataset, it's possible to follow up, for instance by asking: what if something was very clearly ethically problematic in the data collection (for instance, research subjects were forced to take medication against their will)?
- When data from a repository are used for a new study, test subjects and/or respondents can't have been informed about the research their data are used for. Can this ever be acceptable? If you think it can be, are there any limits to this?

Dealing with data

There are a number of rules and regulations around dealing with data sets. However, there also are some significant grey areas.

- In order to conduct research, it can be important to know whether your dataset consists of raw data or edited data. Does this count against using datasets from repositories? What should a researcher do if this isn't clear?
- Is it ever permissible to leave out parts of a dataset as you use it for a study? Under what conditions and for what reasons?
- Some of the students in the game suggest tweaking the study's analytic choices in order to get different results. What does this entail? Can this ever be justifiable? In what ways and under what conditions?

An interesting source is Silberzahn et al. 2018, 'Many analysts, one data set: making transparent how variations in analytic choices affect results', DOI 10.1177/2515245917747646.

Group work

Working well in a group requires discussions about group dynamics and expectations. In fact, this also becomes clear in the other dilemmas: different group members have different interests (and probably different values, too), which means that they might have different ideas about what is the best way to proceed. We all have things we consider self-evident and it is sometimes all-too-easy to assume that others will see things the same way. But this is not always the case. Therefore, the group process cannot be taken for granted. It is important to think carefully about this and formulate clear agreements on the different roles within the group and reasonable expectations.

- If you enter a group project, do you have any strategies for discussing these matters in advance? Or do you just hope everything will go well and everyone will have the same ideas about what is right and reasonable?
- What do you consider reasonable expectations for group work? Must everyone put in an equal amount of work? What if one person gets a lot less done in the same amount of time? Can roles be divided according to people's strengths? Or is it important that everyone practices different skills? How do you make sure to respect the contributions of people that you disagree with? What if different people within the group want different things from the assignment and have different tolerances for workload and pressure?

Science as a community

In science, we are dependent on each other in many ways. We may work in teams, have colleagues and supervisors, deal with journal editors, funding bodies, university policies, etc. We need others for collaborations, letters of recommendation, journal acceptances and grants. This means it makes sense sometimes to reflect on our roles within this community.

- What does it take to be a good team player, especially within a hierarchical structure in which you are dependent upon others? What if the interests of the team conflict with your own interests?
- What if, as in the case of the biased journal editor, some part of the science system in which you're operating seems problematic, yet you are dependent on it? What might be good ways to deal with this?
- In academia, there are some standing practices that may seem to be at odds with research integrity. For instance, the codes of conduct for research integrity that appear in the game state that someone who did not make a substantial contribution to a paper ought not to be an author. However, in many research groups it is normal for the head, supervisor or other people (often people high in the academic hierarchy) to appear on many papers, even if they did not make concrete contributions. This is just one amongst many possible examples. If you speak out against such practices as an individual, it may well harm your career prospects. But if nobody speaks up, nothing will change. How should we deal with this?

Values and principles

In the ALLEA European Code of Conduct for Research Integrity that appeared in the game, four fundamental principles of research integrity are formulated: reliability, honesty, respect and accountability (see ALLEA European Code of Conduct for Research Integrity 2023, p. 5).

- What do we need these principles for? Are they useful additions to more specific rules and regulations? Why and how?
- Do researchers have responsibilities when they become aware that fellow students or colleagues do not abide by these principles and good practices? What might these be? (It would be good to combine this discussion with an explanation of whom students can turn to in cases of suspected misconduct or questions about research integrity more generally, such as an integrity officer or confidential adviser.)

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If you have feedback on the game or want to get in touch, please email Naomi van Steenbergen: n.vansteenbergen@uu.nl.

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Appendix: detailed game description

The best way to get familiar with the game and its narrative is to play it once before using it with students. A quick run-through can be completed in 10–15 minutes. This game description does not address the narrative, but gives an overview of the content of the dilemmas and available choices.

There are five characters in the game:

- Yara, a social student for whom good grades are not a number-one priority
- Toby, who dreams of starting a PhD after graduation
- Luca, an international student on a visa
- Pamela, a professional athlete
- Robin, a student suffering from chronic migraines

Each group of players is assigned either Yara, Toby or Luca as a character. Throughout the game, they are presented with dilemmas concerning research integrity. They will have to choose how to respond to each dilemma, taking into account the demands and restrictions of research integrity, but also the background and goals of their character.

In the course of the game, the students are presented with four dilemmas:

1. Whether to use a dataset available from a repository
2. Whether to leave out some data from their dataset in order to get significant results
3. How to deal with a group member who has been ill and has put in almost no work
4. Whether to hand over the results of the study to the PhD candidate who collected the dataset so that the PhD candidate can use the results for a publication

The dilemmas are all 'grey'. They do not concern strict prescriptions or prohibitions (e.g. clear instances of fraud), but all allow for different perspectives.

Text in blue appears as such in-game. The answer colours / labels (e.g. [green]) correspond to the colours in the instructor dashboard.

Below, passages that students can select as answers are presented in `monotype font`.

Which game character proposes a certain answer depends on the character the students play with (e.g., if students play with Yara a certain proposal might be made by Toby, whereas if they play with Toby, the same proposal is made by Yara). This is represented as [Yara / Toby].

Dilemma 1: use of a questionable dataset

During an early meeting of the research group, the players are sent a message by Robin:

'I am so sorry, I know it was my task to collect the data but I was not able to, the past weeks have been rough due to family emergencies. I won't be able to make it today either. There is no time to start collecting the data from scratch, but I found a possible solution. A friend of mine worked on a study similar to ours last year and offered to share his dataset. He also uploaded it into an open science repository. We can use that dataset for our research!'

First answer

What do you propose the group should do?

I propose we use the dataset. It is in an open science repository, which means it's specifically offered up to be used by others. Having more data would give us more reliable results

I propose we choose not to use the dataset. That data was not collected for our study or in the context of our research question, so using it is not appropriate.

I propose we consider using the dataset, but take some extra time to analyse it. This may delay our data collection even further, but at least we will be able to spot potential problems.

Reaction from 'teammates' and follow-up

Choosing an option elicits a response from the other game characters.

If the students choose [green]:

Toby: *[if the students play with Toby, the reaction comes from Luca] 'It might be good to have extra data, but surely we need to check whether the dataset is any good? Anyone can put anything in an open science repository, right? If the data are no good, our project is doomed from the start...'*

Robin: *'You're totally right, here's a link [clickable link to a made-up dataset constructed for the game] to the data so we can all have a look.'*

Pamela: *'Hey! I've been looking at that dataset, but I can't find any consent forms. I did notice the data were collected in Botswana and I guess ethics regulations may not be as strict there?'*

A note appears: You remember a mail from your supervisor you saved to your notes. There might be something relevant in there.

If the students choose [blue]:

Yara: *[if the students play with Yara, the reaction comes from Luca]: 'Does it really work like that?? Didn't our supervisor send us some code of conduct that has some info on this? I'm not sure I still have it, did you save it somewhere? Your notebook maybe?'*

Robin: *'Yeah, I think we should at least have a look at the data. Here's a link.'*

> ***Pamela:*** *'Hey! I've been looking at that dataset, but I can't find any consent forms. I did notice the data were collected in Botswana and I guess ethics regulations may not be as strict there?'*

If the students choose [orange]:

> ***Robin:*** *'You're totally right, here's a link to the data so we can all have a look.*
>
> *A note appears: There may be some points to take into account in the mail you received from your supervisor. It's saved in your notes*
>
> ***Pamela:*** *'Hey! I've been looking at that dataset, but I can't find any consent forms. I did notice the data were collected in Botswana and I guess ethics regulations may not be as strict there?'*

Robin's messages contain a clickable link to a dataset. This is a mock dataset constructed for the game. The dataset looks superficially okay, with some entries that are clearly wrong. It is not clear who collected the data.

The character's notes, which can be opened from the top right corner, contain an email by their supervisor with the following lines:

> *'Remember to take care to abide by the regulations regarding scientific integrity. It's possible you encounter issues in this project that you haven't come across in earlier courses. Here are the scientific integrity guidelines of the School of Life Sciences. Have a look at the Codes of Conduct linked there too!'*

The email contains a link to the webpage on scientific integrity of Utrecht University's Graduate School of Life Sciences. The webpage, in turn, contains a link to two codes of conduct mentioned in the game: the Netherlands Code of Conduct for Research Integrity and the ALLEA European Code of Conduct for Research Integrity.

Second answer

Now that you've considered different aspects of the question, how do you feel about using this dataset?

I propose to use the dataset. There's nothing in the ALLEA Code of Conduct that explicitly forbids using data gathered for a different study and consent forms are not applicable since the research was conducted in a country where they are not standard. Besides, it's just a master's graduation project, not a proper study that will get published.

I propose we do not use the dataset. There just are too many red flags. Although this will lead to a significant delay, the risk that there is some ethical problem with this dataset is just too high.

Reaction from 'teammates'

If the students choose [green], they get the following message from Toby:

> *'You want to use this dataset? You can't be serious! There's such a big chance that these data will turn out to be corrupted, and*

> *our whole project will fail. We'll definitely get a really low grade, if not worse. I really want to do well on this project. If I get a low grade, no research group is going to consider me for a PhD after graduation.'*

If the students play with Toby and choose [green], they receive the following message from Pamela:

> *'Hey, this is Pamela! I'm surprised by your choice! If this dataset turns out to be corrupted, we definitely get a low grade. Well, anyway, I'm happy we can go along with this! This will save us a lot of time...'*

If students choose [blue], they get the following message from Luca:

> *'Are you serious? You want to reject this dataset? What if our supervisor makes us collect more data ourselves? Our graduation will be delayed and I'm going to have to pay back my study abroad grant! And it wasn't even our fault to begin with, Robin failed to do their job! Please let's reconsider this decision. I'm so stressed right now...'*

If the students play with Luca and choose [blue], they receive the following message from Pamela:

> *'Hey, are you really sure about this? What if our supervisor makes us collect more data ourselves? This will cost us a lot of extra time and then we may not be able to finish before the sports season starts. I'm really stressed out right now...'*

Eventually, the supervisor arranges for the group to use a dataset of one of his PhD candidates instead of repository dataset.

Dilemma 2: no significant results

Pamela has been doing an initial analysis of the dataset and has found significant results. However, when Toby adds in some data that needed cleaning up and analyses the full dataset, he no longer finds any significant results. He sends an email informing the group.

First answer

You read the email. How do you react?

[For students playing with Toby: You make a suggestion of what to do.]

I propose that we leave out the part of the dataset Toby has [for Toby: I have] worked on. This means we use the partial dataset for which we found significant results.

I propose that we leave things as they are, so we work with the cleansed dataset that no longer has significant results.

I propose that we don't alter the dataset, but we tweak some of the analytic choices that might influence the result of the analysis.

Reaction from 'teammates' / second answer

After players choose an option, the following text appears and players are asked to choose an answer again:

> *Great, everyone seems to have a different idea of what to do… Let's take a look at the opinions of my teammates.*

> [Pamela] I propose that we leave out the part of the dataset Toby has worked on and go ahead with our analysis of the partial dataset. After all, the size and composition of a dataset are random – the original dataset could easily have been restricted to the part that we analysed and that got us significant results. This will ensure we're done quickly and we'll likely get a good grade.

> [Yara / Luca] I propose that we leave things as they are. It's a pity the results are not significant, but repressing part of the data goes against research integrity. Maybe there are other ways to still get significant results, but it's going to take time and the project will take even longer to finish.

> [Toby / Luca] I propose that we don't alter the dataset, but we tweak some of the analytic choices that might influence the result of the analysis. Then we rerun the analysis. Perhaps this time it will yield significant results, which we can then use instead of the first run of the full set.

Reaction from 'teammates'

If the students agree with Pamela, they get the following message from Toby:

> *'Hey, I get that you're bummed about what happened after I added my part of the dataset, but I really don't think we can just leave it out. That's got to be a violation of research integrity, right? I'm sorry, I want to get a good result too, but I don't want to take any risks with this.'*

If the students play with Toby and agree with Pamela, they get the following message from Luca:

> *'Are you really sure this is legitimate? I'm pretty worried about this – if we get caught committing fraud I'm afraid we'll have to take a resit and I won't graduate in time to keep my study abroad grant. I'd really feel much better if we could choose a safer option. I heard there's an academic integrity officer who can consult on these sorts of things – let's at least ask him about this.'*

If the students agree with Yara / Luca, they get the following message from Toby:

> *'Hey, this is Toby. I get that you just want to be done. But this project is really important for me. There must be legitimate things we can try in order to get significant results. Can we please take some time to think about other options? It seems we're so close to a great result and it would be such a waste to settle for basically nothing.'*

If the students play with Toby and agree with Yara, they get the following message from the supervisor:

> *'Hey, I heard you didn't get significant results after all. That's such a shame – when I talked to Pamela earlier this week she said it looked like you were getting results. It's really a pity, because if there are good results I think the sponsor will extend the funding for this project for another year. Is there really nothing you can do?'*

If students agree with Toby / Luca, they get the following message from Pamela:

> *'Wow, is that something you can do? How does that work? I mean, how is that okay but altering the dataset isn't? Isn't this something we should ask our supervisor about? Anyway, I'm not too wild about extending this project even further, I want to be done before the season starts!'*

Dilemma 3: little work, still authorship?

The study is almost complete. Robin has been absent a lot, citing a variety of circumstances. Pamela tells them that the team is hesitant about keeping Robin on the team. Shortly after, they receive a message:

> *'Hey, I'm so sorry for being absent so much. I really wanted to contribute and I feel very bad for having let you down so often. The truth is that I suffer from chronic migraines, which come up suddenly and make it impossible for me to work. I really want to graduate, this illness has already led to so much delay and I've already had to pay two additional years of fees because of it. I'm broke and I don't know if I can face doing a thesis project again. Can I please stay part of the team so that I can graduate?'*

First answer

You read the message. What is your reaction?

Although I feel for Robin, it's wrong to add someone as an author if they didn't make a substantial contribution.

I propose to allow Robin to be an author on the study, so they can finally graduate.

I propose we allow Robin to rewrite the introduction and conclusion. This way, they have done some work and we can justify keeping them on the team.

Reaction from ‘teammates’ / second answer

After players choose an option, the following text appears and players are asked to choose an answer again.

> [Luca / Toby] Although I feel for Robin, it’s wrong to add someone as an author if they didn’t make a substantial contribution. It would be a form of fraud to accommodate someone graduating without having done the proper work, even though I’m sure they could do it if the circumstances were different. I propose that we have a meeting with Robin and our supervisor; I’m sure he’ll agree that Robin can’t remain part of the team and a different solution needs to be found.

> [Pamela] It goes against professional research ethics to add authors to publications that haven’t contributed. But we’re just master’s students and Robin is in a bad position. Besides, their contributions have shown them to be smart enough, they just didn’t do much actual work. Benevolence should take priority over adherance to the rules in this case. I propose to allow Robin to be an author so they can finally graduate.

> [Yara / Toby] As things stand, without having done real work on the study or the write-up, Robin can’t claim this as their graduation project. Therefore, I propose we allow them to rewrite the introduction and conclusion. This way, they have played a role in the paper and can graduate together with us.

Reaction from ‘teammates’

If students agree with Luca / Toby, they receive the following voice message from Robin:

> *‘Hey, I get it. I didn’t do a lot of work and it’s not fair if I graduate on the basis of a project that I hardly contributed to. But if we go to our supervisor now and you say you want me out, I’m going to have to start all over again. It hurts just to think about that. Is there really nothing I can do to make up for the times I wasn’t there?’*

If students agree with Pamela, they receive the following voice message from the supervisor:

> *‘Hi all, I just had a conversation with the study advisor. Unfortunately I must inform you that Robin won’t be working on the project team any longer. They had a meeting with the study advisor and me and it was clear they haven’t contributed enough to this study for it to count as a graduation project for them. Good on you for being so supportive though. Don’t worry, we’ll think of an alternative that is workable for Robin in their situation.’*

If students agree with Yara / Toby, they receive the following voice message from Robin:

> *‘Thank you, thank you, thank you! This is such a relief. I’m on it right now!!’*

If students agree with Yara, Robin remain part of the group. If they agree with Luca or Pamela, Robin leaves the group.

Dilemma 4: giving away the analyses?

After it turned out the dataset in the depository was not fit for use in your study, your supervisor arranged a dataset for you collected by one of her PhD students. Now the supervisor leaves a voice message:

> *'Hi there, the PhD student that collected the data which you used for your project will try to publish multiple analyses of his dataset. I expect he will be in contact with you soon.'*

Then the PhD student sends an email:

> *'Hi, I hope you got the heads-up of my message to you. I am currently working on my publication. Since I shared the dataset with you, I would like to receive your statistical analyses so I can include them in my publication. Would you send your analyses please? Thank you!'*

How do you respond?

Of course we send our analyses, we used his data after all. Without that data, we would not have had any results at all. And it's not like I still want to to anything with this study after I'm out of here…

It is reasonable that the PhD student wants to publish our results. But I argue that we should propose that we all become co-authors. It's his data, but we've also done a lot of work on it ourselves.

No way. We put a lot of time and effort into the analysis, with a nice result. I want to write this up for publication myself, because that will increase my chances of a PhD position or other good career. Access to the data is not a problem. Once the PhD student publishes his paper, he'll have to upload his dataset to a repository anyway, so we'll be able to use it whether he likes it or not.

Follow-up reaction

If students choose [green], they get the following message from Toby:

> *'I'm really not okay with this! It's easy for you to just give away our results, but for me, publishing this might make a difference between an academic career and no academic career. If Robin hadn't been ill we would have had data of our own and everything would have been better anyway. Please let's not throw away this one small chance at turning this into a publication.'*

If students play with Toby and choose [green], they get the following message from Yara:

> *'Hey! This is Yara! Are you okay? I didn't expect this from you! In this case you just picked your battles, right?'*

If students choose [blue], they get the following message from the PhD student:

> *'I get that you want credit for your ideas. I would want that too in*

> *your position. I'm sorry I failed to say anything about this in my previous email. Look, citing you all as co-authors is just impossible – co-authorship with students is not taken seriously by journals and the paper probably won't even be sent for peer review if the editor notices. Anyway, it's not a paper on just your study, of course. I just want to include the results. So I'll thank you all by name in the acknowledgements, alright?'*

If students choose [orange], they get the following message from their supervisor:

> *'Look, this really isn't cool. He gave you access to those data, now you need to do your part. That's how academic life works: it's give and take. And especially in a position like yours you really need to be careful not to be too greedy. I'm actually a bit shocked that you have an attitude like this – I thought you wanted a good letter of recommendation?'*

End of the game

The game now concludes. The students are presented with the following text:

> *Do you think the other groups made the same decisions?*
>
> *Your teacher will soon start the discussion with all the other groups.*
>
> *Thank you for playing!*