

MB6 Team Meetings - Running Agenda

Project Resources

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Follow up to the 2023-10-05 meeting:

After having attended the meeting on the 5th of May, I would like to submit a few comments to the group, hoping that they can be helpful.

I think that the idea that MB6 should be a “sequential” series of studies is methodologically sound. The first study should be a first step (solid and informative). It should not be taken to be the solution to the issue. Having said this, it is not so decisive which combination of gesture we employ in the first study. We could employ either TP + MO or TP + SFM.

However, for the choice of the gestures I would stress the two following criteria:

- 1) We should tend to choose the gestures that can be more easily and more clearly coded (in our meetings, unfortunately, we mentioned difficulties in coding both MO and SFM in infants at this age)
- 2) We should choose the gestures that facilitate achieving a positive result in the first study. Such a positive result would be far from being a proof of imitation. However, if we choose a gesture that implies conditions that would complicate a positive result, we risk missing a phenomenon that is really there only for accidental reasons. In other words, from a methodological point of view what should determine the first study is the positive imitation hypothesis. The arousal hypothesis is merely a negative hypothesis. Therefore, I think that it is important to make the most of Andy Meltzoff's experience and suggestions on the gestures that are more likely to generate a positive result.

Finally, I would like to mention an argument in favor of employing SFM (sequential finger movements). Maybe some of you may find it intriguing. Infants execute SFM before birth in the absence of visual control. After birth, for the first two months they still produce SFM spontaneously and, most of the time, they produce this action while they are not looking at it. Thus, from certain theoretical standpoints the imitation of SFM at

this age would have to be classified as “opaque imitation” and would be no less interesting than the imitation of MO or any other facial gesture.

2023-10-05

Zoom link:

<https://stanford.zoom.us/j/94482511636?pwd=OTV2UEhvTzQxNlZzUzJqT3pjYWFnUT09>

Attendees: Sumeet Farwaha, Virginia Slaughter, Liz Simpson, Mike Frank, Pier Ferrari, Shuo Zhang, Tiffany Leung, Arushi Malik, Rechele Brooks, Francys Subiaul, Nour Abduljawad, Yawen, Stefano Guiseppe Vincini

[please add your name if you don't see it above!]

Stefano Vincini: Dear all, given my time zone (Europe) I am not sure for how long I will be able to attend the meeting today. Thus, I just wanted to write a short note to clarify my vote in the survey. Last May, I uploaded a few documents on slacks where I argued for a specific combination of oral gestures (mouth opening and lip protrusion). However, the short video update from the leadership team seems to assign a central role to a methodological principle that I find very convincing: the idea that there is no single experiment that can solve the issue of neonatal imitation once for all, but we can make important, enduring steps toward the solution. In the context of this emphasis on gradualness, all things considered the original proposal including tongue protrusion and finger movements seems sensible. Hence, in the survey I ended up endorsing the original proposal because it could be a good, solid basis for further research. In any case, I look forward to hearing what comes out in the meeting. Thanks!

Liz Simpson: After reviewing the literature, my understanding is that the two most widely replicated behaviors (with positive evidence of matching in the first 6 weeks after birth) are tongue protrusion and mouth opening (e.g., [2014 review](#) & [2021 review](#)). In contrast, the other actions we've been considering are not as widely replicated: only a couple of labs report positive evidence of lip protrusion and sequential finger movements. (Of course, these have just been studied less, so they may be present.) Further, hand movements may be particularly difficult for males, who may not have as advanced fine motor control as females (e.g., [reported here](#)). **So, after some consideration, I'm leaning more towards preferring tongue protrusion and mouth opening, to give infants the best possible chance of showing us what they can do.** I realize this will make behavior coding challenging but am hopeful we can work together to develop good operational definitions and training protocols to overcome these challenges. Looking forward to hearing everyone's feedback! Also, one request: Can we please schedule the next methods meeting at a time that is more amenable for those in Europe/UK/Asia? I have several colleagues who would like to come to this meeting but are unable to make it because it's in the middle of the night for them.

2023-05-09

Zoom link: <https://ugz.zoom.us/j/83460226793>

Attendees: Sumeet Farwaha, Virginia Slaughter, Mark Nielsen, Liz Simpson, Rechele Brooks, Stefano Vincini, Nazim Keven, Guangyu Zeng, Valentina Sclafani, Annika Paukner, Ermanno Quadrelli, Tamara Bastianello, Arushi Malik, Francys Subiaul, Tiffany Leung, Angela Lukowski, Sarah Maylott, Saloni, Yuna

[please add your name if you don't see it above!]

Agenda:

- Stefano Vincini presents his proposed modifications to the existing protocol (<https://www.youtube.com/watch?v=uzGN0aW0GTY>)
- Discussion:
 - ◆ Francys Subiaul: Why add another oral gesture, but not another manual gesture?
 - Stefano Vincini:** The current design does not implement the operational definition of imitation as it is used in the literature. At least two facial gestures need to be compared.
 - Rechele Brooks:** One concern would be if we get up to 4 gestures, there would be an increase in attrition rates. However, your point is taken that, if you are planning to have a control for tongue protrusion, we should also have a control for sequential finger movement. That is a question up for discussion. Is that what you were getting at Francys?
 - Francys Subiaul:** Yes, based on the logic for a facial control, why not have a manual control.
 - Stefano Vincini:** We would like to focus on the core operational definition of imitation.

Virginia Slaughter: Why would there not be an arousal account that could explain an increase in three different types of gestures?

Stefano Vincini: There is no published peer-reviewed arousal hypothesis that predicts a positive result in a case like this. Stimuli are either high or low arousing (mouth opening, finger movements). We can't say that infants find different things arousing - there would be a null effect. But you can distinguish between a high arousing stimuli and a low arousing stimuli.

Virginia Slaughter: We have talked about this in the leadership group. There is no independent data about what is or isn't high versus low arousing for young infants. So it becomes speculation based on the infant's behavior. We would need a separate study with arousal being measured with a completely different dependent variable other than the gestures we are interested in.

Stefano Vincini: Yes, you can do that. But the arousal hypothesis cannot be a meta-physical speculation. It needs to have predictions. We can create an arousal hypothesis that predicts a double positive effect but at this point there is no arousal hypothesis that makes predictions for three gestures.

Virginia Slaughter: We don't have independent data to make a claim that one gesture is more or less arousing than another. I think we should go with a design we have, where we have maximally distinguishable gestures in order to determine whether there is matching. The literature has been reliant on different types of designs and small sample sizes.

→ Nazim Keven presents his proposed modifications to the existing protocol

(<https://www.youtube.com/watch?v=uzGN0aW0GTY>)

→ Discussion:

◆ **Mark Nielsen:** Both were very cogent proposals. But my concern is that we are pushing away from our intention and what we can achieve. One of the things we are hoping for is wide-spread data collection, but once we introduce more components and complexity, it may be harder for labs to participate. I don't think heart rate monitoring is practical.

◆ **Stefano Vincini:** So, there is already a measure of reliability coding in your study. Both tongue protrusion and mouth opening are reliable. There is excellent reliability for tongue protrusion and good reliability for mouth opening.

◆ **Mark Nielsen:** I don't question that it is possible, I just worry about its complexity (adding additional oral gestures).

Nazem Kevin: We are dealing with a 40 year debate. Yes, it is better to do something simple, but it doesn't address any of the issues. If we get a positive result, without controlling arousal, it may be misleading. Adding a heart monitor would only include having two electrodes on the chest of the infant and begin testing after they have adjusted to it. Otherwise it feels as if we are doing the same thing. For distinctiveness (of gestures), I think lip pursing or lip smacking would be great candidates. I don't think mouth opening is a good comparison with tongue protrusion. Is heart rate monitoring possible for some labs?

◆ **Rechele Brooks:** Before we get to that question, we only have one study with heart rate monitoring with one gesture - we don't have a lot of evidence that the supposed arousal pattern is consistent in young infants across different gestures. Also, a lot of training and interpretation is required for heart rate monitoring. In the group, are we aware of other measures that are on heart rate related to attention with newborns? In addition, do we have enough evidence to show a classic attention pattern for different gestures and actions that infants might be making? Also, is there a distinct prediction for arousal - some gestures would lead to more arousal or less arousal?

◆ **Nazem Kevin:** For the first one, I think there is a lot of literature that shows that increased heart rate reflects arousal. There are also a lot of studies that show that decreased heart rate is a sign of orientation and attention. These are independent from imitation. There are a lot of other studies that have shown arousal effects such as Susan Jones. She got positive results just by using lights

and other stimuli (music). I think arousal increases oral-facial activity, especially tongue protrusion. Studies with mice have shown that increasing arousal via adrenaline increases tongue protrusion behaviours.

- ◆ **Rechele Brooks:** Lights flashing and/or injecting adrenaline to a creature changes their state. In this project, we want to include infants in a calm-alert state, and I was wondering if we are able to maintain this goal, how does that factor in? If the child is calm and calmly doing an action, how does that factor into the arousal hypothesis?
- ◆ **Nazem Kevin:** Infants find tongue protrusion more arousing. How do you control that? That is a difficult thing to control. Just because they are calm at the start, does not ensure they will remain that way for the entire testing session.
- ◆ **Francys Subiaul:** Tiffany Field collected HR data, but I am not sure how widely reported it was. I don't know if she reported any association between this data and infant copying of emotion.
- ◆ **Stefano Vincini:** My point is unrelated to the discussion, but I just wanted to discuss how my presentation and Nazim's presentation are linked. I think we both have different hypotheses on this phenomenon, but we agree that the current design will not address the debate over the past 40 years. One proposal to combine both proposals would be to add one control condition or change one of the existing gestures. We could also add one control for arousal such as HR monitoring for some labs. In addition, if our goal is to decrease complexity, why are we testing 2 week olds, especially if we are using the operational definition of imitation?
- ◆ **Sumeet Farwaha:** Alright, thank you once again for joining this meeting. Nazim - I will discuss the possibility of having a HR monitor for some labs who are interested with the leadership team. If you could create a list of labs who may be interested in this project who have access to those tools, please send over a list to our manybabies email account. In addition, we will also discuss the possibility of including a lateralized tongue protrusion - as it may address the question of aerodigestive stereotypies. Lip smacking and lip pursing will also be discussed during our next leadership group meeting and we will get back to everyone as soon as possible.

2023-03-29

Zoom link: <https://uqz.zoom.us/j/87516956025>

Attendees: Sumeet Farwaha, Virginia Slaughter, Mark Nielsen, Nazim Keven, K useathleen Akins, Stefano Vincini, Ermanno Quadrelli, Antonia Dinzinger, Natalia Kartushina, Maria Grazia Zuccari, Emma Visibelli, **[please add your name if you don't see it above!]**

Agenda:

→ Introductory video ([link to slides](#)) ([link to video](#))

→ Sign up for a subgroup ([link](#))

→ Discussion:

◆ Nazim Keven: Why tongue protrusion and sequential finger movement?

Virginia Slaughter: Most studies that have used cross-target comparison have looked at tongue protrusion and mouth opening. However, distinguishing between these is difficult and mouth opening in particular is difficult to operationally define. Since we are trying to collect data from a variety of labs across the world, we want something that everyone will be able to code reliably. Also, tongue protrusion is the most replicated of the neonatal gestures and Andy was quite adamant that it be included. Sequential finger movement has been chosen as a contrasting gesture since it has been claimed to be imitated a number of times. Other facial gestures might be messy or involve emotion.

Nazim Kevin: But these gestures are most influenced by arousal as well. We know kids spontaneously do these gestures especially after birth. As far as I can tell, there is no control for arousal in this study design.

Virginia Slaughter: The cross-target controls for arousal, especially if we assume that the modeled gestures are both equally arousing. If both lead to arousal, then they should balance out when conducting the cross-target comparison between gestures

Nazim Keven: Is there a baseline to control for spontaneous tongue protrusion or sequential finger movement, so that we can exclude these relative to imitative responses?

Virginia Slaughter: Well the logic of the cross target comparison is that you should see differential elevation of the gesture that matches. We did talk about the baseline. Sumeet, do recall where we landed with that?

Sumeet Farwaha: We did have some discussion about the baseline during the leadership group meetings, but we wanted to keep the design in the proposal simple for the team-wide meeting. The baseline and other considerations are to be discussed by the study design subgroup. It would be better to wait until these meetings so that we can also hear the perspective of our other leadership group members on this topic (Andy, Elizabeth, and Rechele). For those who weren't able to watch the presentation - during the first meeting we outlined different subgroups that interested folks could join (Study design, Data Collection, Behavioural Coding, etc.). Thank you Nazim for raising this point, please bring it up during the study design subgroups so that we can discuss it with the other leadership group members.

Nazem Keven: Thank you, but I don't think I will be in the study design group since I will not be collecting data.

Sumeet Farwaha: You can join any subgroup you like. If you only want to join the study design subgroup and not collect data, that would be completely fine.

- ◆ **Stefano Vincini:** First, I would like to thank the leadership group for coming up with such a sensible proposal, which takes into account many things that were said during the workshops last July that were not easy to reconcile. However, I would like to raise a little concern about how the arousal hypothesis has been articulated in recent publications. Dr Slaughter told us clearly how the current design excludes the old version of the arousal hypothesis - that arousal increases global mobility of the child (all gestures are increased). It is important to note that this increases the stereotypies (tongue protrusion) at particular stages. The current design doesn't discriminate between the imitation hypothesis and arousal hypothesis. In other words, tongue protrusion is increased by the presentation of arousing stimuli (modeled tongue protrusion, flashing lights, music) and this may also cause a refractory effect with respect to finger movements. More specifically, while the tongue protrusion model is presented, the rate of finger movements is diminished back to baseline. This would cause the illusion of the imitation of finger movements due to the combination of the stereotypie (tongue protrusion) and refractory effect on sequential finger movement. In addition, in July Dr Akins mentioned that it is difficult to distinguish between high and low arousal. High arousal stimuli like tongue protrusion, music, and flashing lights, stimulate stereotypies like tongue protrusion. But then there are low arousal stimuli like finger movement model, mouth opening model, lip protrusion model which don't provoke stereotypies as much. They also don't cause an increase in other actions such as finger movements. It would be enough to add some control conditions and you would lose these illusionary imitation effects. Control gestures were used in other papers like Oostenbroek et al. Our team first rejected it because it was too extreme, but we still acknowledge that there was some truth to it. So we ended up proposing that we need 1 or 2 control gestures and 3 or 4 target gestures to compare.

Mark Nielsen: The intention of the project is not to distinguish between these hypotheses. The intention is to establish whether there is a reliable effect. So it could be that we find what looks like evidence for neonatal imitation and you can explain it away by arousal, but that's a separate question. The foundation of the project is to chart globally if there is an effect. We have the compound problem of trying to ensure that as this unrolls, everything is done as similarly as possible across multiple labs. So when you start to introduce more things, you introduce more drift away from that. Our role here is to establish whether or not there is an effect. Not why there is an effect or what might be behind it.

Virginia Slaughter: Yes, that has been a lot of the conversation that we have had up until now. Lets just establish whether, whatever the mechanism, we can see evidence that young babies will match gestures. Stefano, what are you thinking is the solution?

Stefano Vincini: Baseline would be the easiest solution. With the arousal hypothesis, you could explain why the finger movement gesture is provoked more in response to finger movement model compared to the

tongue protrusion model, but then you couldn't explain why the finger movement model is provoked more by a finger movement model compared to baseline (passive face). If the advanced version of the arousal hypothesis is true, then only the most characteristic stereotype would be elicited by arousal. Importantly, the baseline in this case would not cause arousal. The best thing would be to add another model like mouth opening. With that said, I agree with Mark Nielsen, in that if the goal of the project is not to elicit imitation then it doesn't make sense to complicate the design but I understood that the goal of the project was to solve a central issue in developmental science. The central issue was not whether there was some effect, because most people have accepted that there was an effect for tongue protrusion - the debate was whether it was due to arousal or imitation.

Mark Nielsen: I think the bigger debate is whether there is an effect, not of what is driving it. I think the problem that has been raised in the last couple of years is that this thing that everyone assumes is there is not at all. We need to establish the effect first, before we go on to arguments about why or why not it may exist.

Stefano Vincini: So the project is not on imitation?

Mark Nielsen: You can get bogged down on definitional issues and I think that's something we want to avoid. If there is an effect that is established, then you can jump into the debate on whether it is imitation or something else. This could be a source of a spin off project.

- ◆ Nazim Keven: I just wanted to comment on what Stefano said, that a third gesture might alleviate this issue so that you can have these pairwise comparisons. Then the problem is what gesture would be best. Mouth opening would be the obvious choice, but coding/defining it would have problems.

Virginia Slaughter: Mouth opening is a nightmare, we always had so much trouble with it. Lip smacking is a hard one too.

Nazim Keven: Yes, lip smacking is one that is studied in primates as well.

Virginia Slaughter: There have been arguments that very young babies get confused if you show them too many models. Certainly in our study, we probably did show them too many models, but we were starting from an assumption that all of these gestures have been imitated by young babies, so we wanted to show the whole range in order to replicate the effect. It turned out that we couldn't find evidence for any of the gestures. One criticism made is that newborns are susceptible to carry over effects and fatigue effects if we show them too many gestures one after the other. So as Mark said, it may be best to get labs to one simple protocol, observe the baby's responses, and answer the basic question of whether there is matching. Then we can discuss the mechanism.

Nazim Keven: Maybe we can ask Kathleen about this. Have you encountered any differential arousal effects for tongue protrusion vs sequential finger movement?

Kathleen Akins: I mean there should be differentiation given the mechanisms involved. I'd have to take a look, but for facial movements there would be a very different motor system involved compared to finger movements. It's just not out of the question that arousal is going to affect one more than the other. This is something that needs to be figured out.

Sumeet Farwaha: Yeah, I think that is a great point. This is something that we definitely discussed in the leadership group. This is also a great discussion for the study design subgroup to tackle. So far we have kept the design quite streamlined based on the contributions of each member of the leadership group, but of course as I mentioned in the presentation, all of the details are tentative. In terms of the baseline, Stefano, if you are keen in joining the study design subgroup, we would love for you to present on what kinds of gestures or baseline conditions you may want to include. Nazem, we would love for you to do the same as well, if you have any ideas on additional facial gestures that we could incorporate that would help address the arousal issue. It's unfortunate that we don't have Andy, Elizabeth or Rechele here to comment on this issue, but we will set up a time to discuss this in more detail. I would now like to open up the question period to other members of the Zoom link now. Does anyone have any questions or concerns thus far?

- ◆ **Nazim Keven:** I had a question about what counts as a gesture. In the previous meeting, Andrew was saying that every little muscle movement would count as an imitative response. Is this really going to happen or will there be other guidelines?

Sumeet Farwaha: Part of the presentation that we've outlined tentatively is that we

want to stick to the guidelines put forth by Meltzoff and colleagues. And these would

be based on complete responses. With that said, there is still discussion that needs

to be had on this, whether we code partial and complete responses. A complete

response for tongue protrusion would be a "clear, forward thrust of tongue that

visibly crosses the back edge of the lower lip". If we were to go with the index finger

protrusion or sequential finger movement, the definitions would be different. For

sequential finger movement, it would be "the opening and closing of the hand by

serially moving fingers" and index finger protrusion would be "complete index

finger extension movement relative to all other fingers within the infant's midline

or front body space from torso up to the head". Of course, these are all tentative.

- ◆ **Stefano Vincini:** I think it is important to say that the title of this project is misleading. The title is neonatal and early imitation, but we are not interested in imitation, we are just interested in matching behaviour. From the analytical point of view, if we get the effect, we can't market it as imitation.

Virginia Slaughter: The goal of the project is imitation. We started out with

discussion on the name of the project and we decided to label it neonatal imitation,

because that's what it has been known by since Meltzoff and Moore published their

paper in 1977. Ultimately, it is about imitation, but we can't address every question

with a design that is meant for multiple labs around the world, Maybe we can do

something with the design that can incorporate controls like you said, but this design

is where we need to start. If there is no matching behaviour, then we don't have

anything more to do. If there is reliable matching behaviour using the cross target

comparison method, we will have to dig a bit deeper on what's producing these

behaviours.

Nazim Keven: I agree we should first establish the matching then explore the

mechanism as it is the most logical way to go. However, if this effect is found, than

Meltzoff and colleagues will interpret it as definite evidence for imitation and the case

will be closed and no one will explore the underlying mechanism. No one would care

about arousal or any other alternative explanation of this matching behaviour.

Stefano Vincini: I completely agree that its logical as well. This is why it should be

clear that in this project, we are not investigating imitation.

Mark Nielsen: I can appreciate where you both are coming from. But the broad

social learning field has been bogged down by definitional issues. An example of

this is in the non-human primate literature, where there are still arguments over

whether apes imitate. It ultimately just ends up being groups arguing over definitional issues. I think we should focus on the foundation of this project, which has always been called neonatal imitation (even if you can argue that is not what it is), which is to attract people and stay consistent with what it has been called in the literature. If we called it the matching project, people may not be as interested. By naming the project after what it has been referred to as, people will want to invest in it. I can see Nazim's point that if there is something found, it risks being locked away as legitimate. But I think naming it something else, takes it away from its origin.

- ◆ Kathleen Akins: Are we going to have anyone from neonatal motor or arousal disciplines to talk about the gestures that will be used. The neurological basis of these behaviours is quite different.

Mark Nielsen: Did you have anyone in mind? At this point, we have not reached out to anyone other than to establish a group.

Kathleen Akins: I would be willing to find someone who is at the top of the field for this. I know that there have been some recent really interesting findings of late and I can try and track these down. For example, we know the cortical route is not mature and won't be for four months so we have to ask what are the kids doing with their hands and feet as opposed to their faces. We used to think it's just rhythmic movements by oscillators but it turns out these are a temporary motor route that allows infants to move their hands to their mothers' faces. They are actually reaching for their mothers' faces. The answer is it is a temporary multimodal exploratory route and you can imagine the motor ramifications of that and what gets that going? Is it visual stimulation or something about nursing? Someone who really knows this stuff could be valuable as they will say you have two different gestures here that are like apples and oranges and one that is going to set off one is absolutely not going to set off the other one. Someone who knows this will be extremely helpful. Also, the sequential finger movement and finger extension are quite different movements, when we consider them as options. It is time to add in the neurophysiology we actually know now.

Virginia Slaughter: I agree with you and really like what you're saying but that's never entered into the debate previously as we have operated with this active intermodal matching that's driving these matching behaviours. Mark Bloomburg could be someone we could invite.

Kathleen Akins: It is mystifying which structures in the brain present at birth would make imitation possible. It couldn't be cortical, not that

subcortical stuff doesn't do a lot of stuff and it must do a lot of stuff in babies. As I say, we need someone who knows.

- ◆ Sumeet Farwaha: I agree with you. With that said, if you could please suggest names and then I can relay them to Heidi and the manybabies organization can reach out to them – if they are interested in coming on board. They can review the slides and meetings as part of the study design subgroup. The more interdisciplinary experts the better as it leads to a more well-rounded project that addresses everyone's concerns. Jumping back to Stefano, I think everything you said is fair and we are open to discussion on those topics. In terms of adding baselines, we want to see what your suggestions would be in terms of study design. Once we see it visually through a presentation to the study design subgroup, and if it's simple enough and easy enough to incorporate, we might be able to do that across all the labs around the world. But of course, we have to open it up to the other members of the leadership team to finalize the details before we submit it to a journal for peer review.

Stefano Vincini: I would be happy to try to do that but I am not a psychologist so I

would need help. It is not true that there is a debate on neonatal imitation to me,

there has never been a debate and it is clear to me that all psychologists agree

imitation is distinct from arousal. It has always been clear that arousal is an illusion

of imitation and it is common sense too.

- ◆ Nazim Keven: Why is Susan Jones not part of this group – she did a lot of studies on arousal. I'm sure she knows, she should have been part of this project.

Virginia Slaughter: Everyone was invited and it is voluntary. But she has retired

seven or eight years ago.... Otherwise, we would love to have her as part of it. I'm

assuming she knows about it as she still has her emeritus position. I had contact

with her six or seven years ago and she said she's not really doing that kind of

stuff anymore. I think this has been useful. I think it would be great if we could get

a design that could both establish the phenomenon *and* tell us about the underlying mechanism. If we can figure out the design that everybody across the

world can implement reliably that will accomplish that then that would be a huge

win. Nazim, I take your point that it could be a closed book if we find some

matching... but don't forget that it is a collaborative write up so you won't just have only one perspective. If we have a design that only allows us to say there is matching but we don't know the underlying mechanism, we will write it up in a way that makes it clear that the next piece of work has to be done.

Nazim Keven: That is why I feel like we need to have this baseline. If we have a baseline we can compare this and we might consider having a heart rate monitor as a control... it can help you make better inferences once things like arousal are empirically controlled for.

Sumeet Farwaha: I 100% agree with you Nazim. The heart monitoring might be hard to implement because not each lab will have access to resources to require those tools. A baseline is definitely something we need to hear more about and possibly include that.

Kathleen Akins: Presumably, you're going to be doing some trial runs of your methodology and I think it would be really good to have heart monitors in the trial runs. It is not the case that every person has to use them to have statistically meaningful results so we shouldn't rule it out just because not everyone can do it at least try it out.

Sumeet Farwaha: We want to make it as inclusive as possible and have no barriers to participation.

Kathleen Akins: I am all in favor of inclusiveness. But if you can't show what you think you're showing...in any event, inclusiveness doesn't have to mean the same thing for everybody. Right? You just have to design your experiment well enough. Obviously, the more data the better but if you don't test the obvious stuff at the onset. Someone might say "what about the heart monitors".

Sumeet Farwaha: Would a baseline be a acceptable substitution for a

heart rate monitor?

Virginia Slaughter: Even a baseline is problematic as something like a still face

then you will have a confound there as that is a drag on arousal.

Nazim Keven: Heart monitor is the best for this. Another worrisome thing is that

arousal is an exclusion condition. Arousal is not controlled, but if you are not

aroused enough you are excluded, which is the complete opposite of what it

should be.

Sumeet Farwaha: This was just based on the guidelines used in previous work

in favour of neonatal imitation.

Nazim Keven: How do you know that a baby will not go from state 4 to state 5

during the testing session?

Sumeet Farwaha: These are tricky bits that we see people debate on in the

literature. Will they stay in state 4 during the entire session? This is the difficulty

of testing babies.

Virginia Slaughter: Remember, that all is only relevant if we find, across the

world and across all these samples that babies who see tongue protrusion

increase tongue protrusion but not sequential finger movements and babies who

see sequential finger movements increase sequential finger movements and not

tongue protrusion. That's a pretty high bar already.

2023-03-22

[Meeting recording](#)

Attendees: Heidi Baumgartner, Sumeet Farwaha, Rechele Brooks, Andy Meltzoff, Liz Simpson, Angela Lukowski, Anastasia Kyvelidou, Anne Gordon, Arushi Malik, Benazir Neree, Caitlin Stone, Carol Cheatham, Chiara Turati, Chiara Capparini, Elizabeth Renner, Emma Visilbelli, Francys Subiaul, Geraci Ale, Gordonad, Guangyu Zeng, Jill Heathcock, Laurie Bayet, MG, Mikael Heimann, Nazim Keven, Rachel Tang, Rana Abu Zhaya, Sophie Milward, Tara Callaghan, Tiffany Leung, Valentina Sclafani, Daniela Santos Oliveira

Agenda:

→ Introductory video ([link to slides](#)) ([link to video](#))

→ Sign up for a subgroup ([link](#))

→ Discussion

- ◆ Tara Callaghan: Has done a 7 culture study and expressed concerns about inclusion criteria (not knowing gestational age, “complications at birth”, 2.5kg baby sizes are smaller in some places, setup with so many cameras may be perceived as too intrusive).
 - Heidi Baumbartner: We hope to have standardization but also flexibility (as will all MB projects) so this is something we need to figure out. We want to design the study to be culturally appropriate and as inclusive as possible.
 - Potential workarounds (e.g., weight babies when they arrive for the study)
- ◆ Tara Callaghan: Types of behaviors used and way that imitation is assessed
 - Andy Meltzoff: Burst-pause method appears to elicit higher rates of imitation than other approaches, so we should consider using this approach.
 - The proposal is to use: Repeated measures, counterbalanced order, so each baby sees both conditions
- ◆ Tara Callaghan: Any plans in the future to do instrumental actions on objects or intentional imitation?
 - Sumeet Farwaha: The initial proposal isn’t able to capture that, but that could be a future direction that is possible and that people would be interested in.
 - Heidi Baumgartner: parallel and spin-off projects are common in MB projects. For example, in MB1 that explored infant-directed speech, there was a spin-off that looked at bilingual infants.
- ◆ Rana Aba Zhaya: I’ve never tested babies younger than 3 months. There have been a lot of discussion around recruitment issues. That may be even harder for neonates. Connections with local hospitals may be attempted but may not always be possible.
 - Valentina Sclafani: I recruit pregnant people and babies. What has worked for us is recruitment online through social media.
 - Jill Heathcock: Our most successful strategy is to go through our hospital system and they send an email to people who meet our criteria. We also have parents collect data themselves.
 - Sumeet Farwaha: We go to a pregnancy/baby expo even and connect with families that way.
 - Liz Simpson: Local birth centers may allow you to connect with their families. Paying families can help, especially to offset travel costs to get to the lab.
 - Andy Meltzoff: We send out mailers and interested families respond back.
 - Heidi Baumgartner: MB2, 3, and 4 are all collecting data right now and people are having success right now, so we can share recruitment ideas not only among our group but also across the wider MB community.

- ◆ Chiara Turati: You mentioned the participant will get reimbursed for their time. Will this be mandatory to give money? Or can this be a small present? Our families are volunteers and may prefer this.
 - Andy Meltzoff: That may be a decision made by the local site.
- ◆ Valentina Sciafani: Should individual labs go through their own ethics procedure?
 - Heidi Baumgartner: In general, every participating lab is responsible for ensuring that they have ethical approval from their own local approval board. For most people, that's their institution. For some people, that doesn't exist, in which case we figure out what the appropriate thing is. That said, lots of projects create materials that labs can use, so there's a lot of sharing. Since videos can't be de-identified, there may be special approvals needed locally for sharing those.
- ◆ Rana Aba Zhaya: For the procedure, most baby labs don't have a setup with 3 cameras. Are labs required to get extra cameras? Can we just use one camera? We must consider how to be inclusive for labs who don't have access to these resources.
 - Liz Simpson: We can work through these challenges and try to come up with ways to still enable data collection potentially with fewer cameras.
 - Valentina Sciafani: We may need to find ways to synchronize multiple cameras.
 - Rechele Brooks: There is software we've used that works for post-processing videos.
 - Heidi Baumgartner: We're constantly trying to get money for the MB networks as a whole, to provide infrastructure. MB5 was successful in getting Einstein Foundation Award that can be distributed to labs for equipment/recruitment costs. Lots of traditional funding sources don't like money being sent out of the country. As a project group, our group is welcome and encouraged and supported in submitting grants for our project. We now have a relationship with a fiscal host, so we now have nonprofit status and can accept donations, which can be used for purposes like this. If you have creative ideas for soliciting donations from individuals or foundations, or private sector (companies/sponsors, e.g. GoPro, Cannon), that's new, but we can be creative in thinking about soliciting/distributing those internationally.
 - Tara Callaghan: Phones are another option for videotaping.
- ◆ Rana Aba Zhaya: For the coding process afterwards and how we figure out whether the infant imitated the adult... is there a pipeline for how these videos will be coded? Will we create a template that all labs will follow? Software/platforms?
 - Andy Meltzoff: As long as you have a time stamp on each video frame, you don't need fancy software to code.
 - Rana Aba Zhaya: There may be some free software we can use - ELAN (may work better than Datavyu)

- Valentine Sclafani: Intra and inter rater reliability - will that be across labs and also within labs?
 - Sumeet Farwaha: Yes, if ethics allow sharing videos, then labs will code both their own videos and other labs' videos. There may be some limitations with video sharing that we need to deal with.
- Heidi Baumgartner: Databrary is a video-sharing repository in the US that can help us manage videos and address ethical sharing concerns.
- Sumeet Farwaha: If you have experience with Databrary, was it hard to get ethical approval?
- Rana Aba Zhaya: There was lots of back and forth but eventually we got approval. We do have to listen to each individual recording and check to see that it's OK to share (no sensitive information), so it's labor-intensive.
- Laurie Bayet (in chat): No issues for us (in the US).
- Heidi Baumgartner: The non-sensitive nature of the videos we're collecting may make it easier for us.
- Valentina Sclafani: We use mostly microsoft onedrive and we grant access to folders through collaborators. One way we could do it is to include the collaborators on our ethical approval, so that everyone could access the videos in the project. We can add collaborators with a simple amendment.
- Jill Heathcock: In the US, OneSource is not an option if you are in a medical center (but I wish it was).
- Heidi Baumgartner: MB4 spin-off has a required video, but for the main project it's not required, so they've gotten around restrictions by setting up bilateral sharing agreements.
- Sumeet Farwaha: Parents may be willing to participate, but may not be willing to share the videos (e.g., on Databrary) so may be a two-stage consent process.
- ◆ Rana Aba Zhaya: Would all the data need to be shared? If data are coded locally, then maybe it's OK?
 - Sumeet Farwaha: Yes, that might be possible.
 - Laurie Bayet: We've been using Databrary sharing as an optional "add on" within the consent process. I wouldn't expect all parents to consent to it given the identifying nature of the videos.
 - Heidi Baumgartner: We should try to share as much as possible as openly as possible, but it's not a problem if there are some case-by-case/ethical limitations.
- ◆ Tara Callaghan: I see the timeline but don't see any dates. Any thoughts on dates for when data collection is aiming for?
 - Sumeet Farwaha: Based on previous projects, the entire project may take 2.5 to 3 years:
 - ~ 8 months to finalize the project method details
 - 4-5 months from submission to acceptance for stage 1 report
 - ~ 1 year for data collection

- ◆ Tara Callaghan: Is the other group (for meeting #2 accommodating other time zones) focused on the same project as us?
 - Sumeet Farwaha: Yes, it's all one project.
 - Heidi Baumgartner: Yes, all one team and one project. The reason why we're having two meetings is purely from a logistics/time-zone perspective. The leadership team has 3 individuals in the US and 3 in Australia, so it's tricky with only very narrow windows of time that work for everyone. So setting up two meetings was needed.
 - Liz Simpson: Everyone is welcome to come to both meetings!
 - Heidi Baumgartner: We can also try to do more work asynchronously to avoid time zone issues, e.g., communicating via slack or listserv.
- ◆ Andy Meltzoff: the leadership group has been meeting to try to come up with a tentative method but there are many trade-offs/issues that we'll need to work through. There's a tension between standardization and flexibility. There are also many possibilities for spin-offs and we must balance the specific focus and primary goal with additional future projects that may run in parallel or after this one.
- ◆ Rana Aba Zhaya: The ACLEW community of coding day long audio recording data can be a really good model for streamlining coding and training (part of the DARCLE group).