**How will data be collected?**

We will collect data via the Lookit online platform, run by MIT. Lookit facilitates online research with infants and children, allowing researchers to create and post studies on the Lookit website (https://lookit.mit.edu). Families participate in these studies from a home computer, with webcam video of their responses sent to the lab for later analysis. The purpose of the platform is to lower barriers to conducting and participating in rigorous, reproducible developmental research that advances the understanding of development and its implications for education, parenting, policy, and medicine. Lookit aims to support researchers in working with larger sample sizes (to study small or graded effects with adequate power, or to run necessary manipulation checks); working with more representative and diverse samples; observing more natural behavior in the home environment; recruiting special populations; using longitudinal designs to observe individual differences, changes over time, and effects of interventions; and sharing protocols and materials to enable cumulative and reproducible scientific progress.

Our usage of the Lookit platform is subject to the Lookit Usage Agreement (attached), which governs acceptable uses of the platform and data collected by our lab and by MIT.

Researchers at MIT who maintain the Lookit platform will also have access to the data we collect, and may use it to monitor and improve the platform. For instance, data may be used to detect and fix technical problems or identify new features that would be helpful; provide support to study researchers; assess data quality; develop tools for data analysis; evaluate the site’s success in reaching a diverse population; and characterize family engagement.

Several forms of data are collected on Lookit:

* Account data: To create an account, a parent provides an email address and chooses a password. The account is randomly assigned a unique ID string. For families who choose to participate in one of our Lookit studies, we will have access this unique ID string, a nickname optionally provided by the parent, a mailing address optionally provided by the parent, a set of email preferences (whether email of various types may be sent to the address on file), and the date/time at which the account was created.
* Child data: At any point after registration, parents can register their children as participants by filling out a brief survey which includes the child’s nickname, date of birth, gestational age at birth, gender, and an opportunity to provide any additional comments likely to be relevant (e.g., hearing or vision impairment). Each child is randomly assigned a unique ID string. We will have access to child data from any children who participate in our studies.
* Demographic data: Before participating in their first study, parents are asked to fill out a demographic survey. All questions are optional and this survey may be updated at any point. Each time the survey is updated, a record of its current state is stored; *demographic data* represents a particular “snapshot” of the survey and consists of the ID of the associated account, a timestamp, and responses to questions about the home environment and family background, including: responding parent’s gender and age, family race(s)/ethnicities, number of parents/guardians, number of children in the home, parents’ education levels, household income, location (country, state, and “urban/suburban/rural”), number of children’s books. We will have access to a demographic snapshot for each child, captured at the point at which he or she participates in our study.
* Study session data: To participate in a particular study, the parent selects a child registered under their account and then completes an activity in the web browser with that child. This session data consists of a timestamp, the associated child ID, any counterbalancing information associated with this session (children may be randomly assigned to different experimental conditions or to see different orders of questions, for instance), and data recorded during each page or “frame” of the study (instructions pages, experimental trials, debriefing page, video privacy level selection page, etc.). Frames record information such as event timing (e.g., when a video started playing, when the user entered/left fullscreen mode), user actions (e.g., which of two animals a user clicked on), and user-entered data (e.g., a form filled out by a parent to describe the child’s sleep habits). If video recording happens during a frame, the filename of the video is included in the frame data.
* *Study video*: Video recordings (including audio) are collected via participants’ webcams during studies. Video data will be streamed to the Lookit server during the experiment but will not be viewed until we have confirmed consent to participate. Video filenames include the unique ID of the study, the name of the study frame during which the video was collected, the unique child ID, a timestamp, and a random suffix.

*If applicable: We may study relationships between the same child’s behavior in the same study (some studies may comprise multiple sessions, for instance to look at individual differences, test-retest reliability, or the effects of an intervention); between the same child’s behavior in different studies run by the same research group; and between siblings’ behavior on the same study or different studies run by the same research group.*

Lookit users may manually submit or email bug reports or questions about our study, in which case we may have access to their email address and/or name. This information is not recorded aside from our email records or used as a subject of research.

Before viewing video collected during a study session, we will check for an associated consent recording that demonstrates informed consent. If the parent’s verbal statement of consent is audible, appropriate study measures will then be coded. If a technical issue (e.g. lack of audio recording) prevented collection of informed consent, and the parent has set communication preferences to allow researchers to email with questions about their participation, consent may instead be confirmed by contacting the email address on file for the account and receiving back a reply that contains the statement “Yes, I am this child's parent or legal guardian and we both agreed to participate in this study.” Unless consent is confirmed, no other video associated with this study session will be viewed, and no other data from the session will be used in study-specific analysis, although the number of such records and aggregate data about the associated accounts (e.g., how many unique children, how many were in the age range) may be reported.

**Is there audio or videotaping? YES**  **NO**  ***Explain the procedures you plan to follow.***Audio and videotaping of the experiments will be performed via the participants' webcams and streamed to a server maintained by the Lookit project at MIT. Parents have the right to withdraw their video at the conclusion of the study.

**Will data be associated with personal identifiers or will it be coded?**

**Personal identifiers**  **Coded**  ***Explain the procedures you plan to follow.***All records, including account and child data, are identified primarily by randomly assigned unique alphanumeric strings. These are used as database keys when retrieving records. While child and demographic data includes the account ID, and session data includes the child ID, the reverse does not hold true: child and demographic ID strings are not included in account data, and session IDs are not included in child data. Therefore, for instance, when we have access to data for a particular account we do not automatically have access even to the IDs of all children associated with that account.

Account data encompasses personal information including a nickname (some parents may choose to enter their full name) and optionally a mailing address. While personnel working on the Lookit project may have access to email addresses, we do not have access to email addresses unless participants initiate contact with us or respond to email sent via the Lookit site. Child data encompasses personal information including a nickname (some parents may choose to enter the child’s name), date of birth, gender, and gestational age at birth.

The following restrictions on the use and publication of data apply to research conducted on Lookit, as per the Lookit Usage Agreement.

Researchers using Lookit:

* May not publish, or conduct research on, child or account names, email addresses, or mailing addresses. Child names must be censored from written comments from parents if published. Parent and child nicknames are used only for communication with the family.
* May not publish child birthdates or information that would allow calculation of child birthdates (i.e., exact age plus date of participation).
* May not publish any of the unique IDs used on Lookit for account, child, or demographic data, as these are shared across the site and would potentially allow a reader to connect children across multiple published studies.
* May not publish demographic data from individuals in a way that would allow a reader to link demographic data to session videos.
* May not use video or other data in order to link outside information available about a specific participant to the child or session, unless they have specific IRB approval to do so. Any planned integration of outside data must be reported to Lookit for review at the time the study is submitted.

Researchers may share video data only in accordance with the parent’s privacy selections at the conclusion of the study. Researchers may share video and other data on Databrary in accordance with parent privacy selections.

**Where will the data be stored and how will it be secured?**

We will download video, account, child, demographic, and session data from Lookit. This comprises:

* Video and other session data from our study/studies
* Child data from children who participate in the study
* Account data from accounts associated with children who participate in the study
* Demographic data from accounts associated with children who participate in the study

*Details of your own storage and security. Points that may or may not be required by your IRB: On which computer(s) and/or cloud backup service(s)? Are these networked/accessible via the internet and account login details? Who or which credentials have access – e.g. on a shared computer in the lab, do all undergrads in the lab have access? Will you [temporarily, permanently] store a copy of some data on a personal laptop? Our own IRB at MIT covers that last one, although we don’t actually allow undergrads to do the same:“Study personnel named in this protocol may also temporarily download video and other data onto password-protected devices in order to enable local processing.”*

As per the Lookit access agreement, MIT may also retain an independent copy of all of the above data.

We access the Lookit experimenter interface to download data by authenticating using their Open Science Framework (OSF) account. Authentication is based on OSF access tokens of individual researchers. All downloads occur over a secure https connection, and all video data is encrypted at rest on the storage platform maintained by MIT. We download individual study videos via the experimenter interface, or download a collection of videos. When a collection of video is requested for download, the video is collected into a .zip archive, and once ready, a unique download link is emailed to us. This long unique link essentially acts as a password to access the archive. The link expires after 30 minutes, so that any later security breach does not compromise the video archive.

If consent for a session cannot be confirmed, if video is withdrawn at the conclusion of a session, or if a child participant is at least eight years of age, we will delete without viewing any other associated session video we have downloaded. As this determination occurs after the collection of the video data, and based on judgments from the individual researchers, such video data may not be deleted from Lookit storage.

Automated emails on the Lookit system are mediated via SendGrid, a cloud-based SMTP provider. Lookit user email addresses are used by SendGrid solely on Lookit’s behalf to send email, in accordance with SendGrid’s Services Privacy Policy.

*If applicable: We may share video and other session data on Databrary for sessions where parents opt to allow this usage, subject to approval of the appropriate IRB. Databrary is a secure library developed to allow sharing and reuse of video data from developmental research. From the Databrary mission statement:*

*“Most developmental scientists rely on video recordings to capture the complexity and richness of behavior. However, researchers rarely share video data, and this has impeded scientific progress. Enabling reuse of video data is essential to increasing openness, maximizing the efficiency of limited resources, and accelerating the pace of discovery in the developmental and learning sciences.”*

*In order to gain access to the data in the Databrary archive, investigators must be eligible to conduct independent research at their own institution, have human subjects certification, and agree to treat Databrary data with the same high standard of care that they treat data collected in their own lab. Please see the Databrary Access Agreement at* [*https://databrary.org/access/policies/agreement.html*](https://databrary.org/access/policies/agreement.html) *for details.*

**What will happen to the data when the study is completed?**

Data will be kept indefinitely [*on your particular storage solution].* Data will also be retained indefinitely by Lookit. *If applicable: For sessions where parents opted to share their data, data will also be archived on the secure Internet library Databrary.*

**Can data acquired in the study affect a subject’s relationship with other individuals (e.g. employee-supervisor, patient — physician, student-teacher, family relationships)?**There is no foreseeable risk that data collected in this study will affect participants' family, school, or other relationships. [*Obviously change if this might not be true!]*

**Subject compensation**

This is really up to you, but here are your options and notes about each:

As applicable: we will pay participants in Lookit points / email gift certificates / mail physical items.

If mailing: Participants are never required to provide a mailing address to participate, and the mailing address is used solely for sending such awards; it may not be used for other communication.

If using Lookit points: These points are always redeemable on the Lookit site for gift certificates at a posted rate, and may also be redeemed for other items (e.g., books, toys, baby gear), via a “store” administered by the Lookit project.

Some notes on restrictions:

Compensation may be limited to one session per child within a given timeframe and may depend on the family successfully submitting at least a valid consent video and on there being a child of approximately the expected age visible. Compensation may depend on the parent’s behavior but may not depend on the child’s behavior or performance, even if the child’s behavior makes the data unusable (e.g., points may not depend on “correct” answers given by a child or whether an infant fusses during a study). For longitudinal studies, compensation may be allocated unevenly across sessions to reflect the greater value of data collected later in the study and the greater commitment required by parents to return for a follow-up.

Please check with us about your planned compensation strategy! Lookit may set acceptable ranges for the monetary value of study compensation, both points and other independent compensation, as necessary to avoid coercive payment or large disparities between studies.

Lookit itself may also choose to offer points (at MIT’s expense) for study participation, for instance to balance participation across studies.

**Will subjects be reimbursed for travel and expenses?**Generally, subjects will not be reimbursed for travel and expenses, as we do not anticipate any expenses or travel associated with participation.

**What are the risks / discomforts associated with each intervention or procedure in the study?**There are no known risks for these studies.  We do not anticipate that participants will experience any discomfort from these studies; however, babies may become fussy and children and adults may become bored.

Parents may be uncomfortable sharing video of their child’s participation, or may have concerns about how the video will be used.  We have several measures in place to minimize risk and make sure we only use videos in ways parents are comfortable with (see below).

As with any in-lab studies, when data is published from multiple Lookit studies that a family has participated in, it may be possible for a reader to connect an account or child across multiple studies. (For instance, if the parent opted to allow scientific or public sharing of both videos, he or she may be recognizable as the same person in each; or a particular set of responses to a language or motor development survey may be unique within the Lookit participant pool.)

Contacting parents by email has the potential to be a nuisance if parents cannot opt out easily.  For this reason we parents are able to set their own communication preferences and Lookit provides a link to change these preferences as a footer in all automatic emails.

**What procedures will be in place to prevent / minimize potential risks or discomfort?**

The parent or guardian will be able to remain in the room with the child throughout the experiment. Caregivers will be instructed that they can pause or stop the experiment at any point.

In order to ensure that parents understand and accept the potential uses of their video or audio recordings, they are able to select from three privacy levels after each study:

The following text describing privacy levels is shown at the end of each study:

Data sharing

Would you like to share your video and other data from this session with authorized users of the secure data library Databrary?

        [] yes            [] no

Only authorized researchers will have access to information in the library. Researchers who are granted access must agree to maintain confidentiality and not use information for commercial purposes. Data sharing will lead to faster progress in research on human development and behavior. If you have any questions about the data-sharing library, please visit Databrary < https://nyu.databrary.org/ > or email ethics@databrary.org.

Use of video clips and images

() Private: Video may only be viewed by **authorized scientists**. *[ If the previous question has been answered, a parenthetical note describing who is authorized will be added: “(This means the MIT researchers who run Lookit and the [Institution] researchers working on [Study name])” if no and “(This means the MIT researchers who run Lookit, the [Institution] researchers working on [Study name]), and authorized Databrary users)” if yes.]*

() Scientific and educational: Video may be shared for scientific or educational purposes by any of the authorized scientists described above. For example, we might show a video clip in a talk at a scientific conference or an undergraduate class about cognitive development, or include an image or video in a scientific paper. In some circumstances, video or images may be available online, for instance as supplemental material in a scientific paper.

() Publicity: Please select this option if you'd be excited about seeing your child featured on the Lookit website or in a news article about this study! Your video may be shared for publicity as well as scientific and educational purposes; it will never be used for commercial purposes. Video clips shared may be available online to the general public.

Withdrawal of video data

Even if something went wrong, every video is useful to us! However, if you need your video deleted (your spouse was discussing state secrets in the background, etc.), check here to completely withdraw your video data from this session from the study: []

Only your consent video will be retained and it may only be viewed by the MIT researchers who run Lookit and the [Institution] researchers working on [Study name]. Other video will be deleted without viewing.

Private use of video and not sharing with Databrary will be assumed in the event that technical difficulties prevent a parent from selecting from these three options at the conclusion of the study.

To avoid unexpected use of participant identity across studies by Lookit researchers, we do not publish the unique identifiers used for Lookit accounts or child profiles, and do outside information about a participant [without specific IRB approval] (see 8., “Will data be associated with personal identifiers or will it be coded?”).

In order to ensure that parents do not receive unwanted emails from the Lookit project, they set their own communication preferences under a “Communication” section of the “My account” page.  Parents can select whether they would like to receive an email when a new study is available for their child(ren), whether they would like to be reminded when it’s time for another session of a longitudinal study, and whether they would like to hear when results of studies they participated in are published.  Parents can also select whether they can be contacted personally if we have any questions about their or their child’s responses. We do not receive direct access to user email addresses; we instead send email through an experimenter interface on the Lookit site by first selecting the type of email to send, then the recipient(s). We are only able to send email to users who have chosen to receive this type of email and who have a child who has participated in at least one of our studies.

**What potential benefits may subjects receive from participating in the study?**We do not expect individual children to receive any direct benefit from their involvement, although children usually enjoy participating in these studies. Parents usually enjoy learning more about cognitive development. *If applicable:* *Parents may be given individualized information about their child’s responses when practical, for instance to show the percentage of time that their infant looked at an unexpected vs. expected outcome in each of several types of events. This is analogous to the certificates often given as keepsakes of participation in lab studies.*

**Procedures**

On Lookit, infants and children from birth through seven years of age and their parents/legal guardians may participate in studies. All subjects participate from a familiar environment (usually their own home) over the internet. Audio and video data are recorded via webcam while they complete a study in the web browser, and streamed to a Lookit server for later analysis.

To participate, a parent first creates an account on the Lookit site, adds at least one child to the account, and fills out a demographic survey. Then he or she can select a current study to participate in, based on the child’s age and other eligibility criteria. At the beginning of a study, a consent form is displayed and the parent is asked to read aloud a statement of consent which is recorded via webcam. At the conclusion of the study, the parent is asked to select a privacy level for the videos collected, and has the opportunity to withdraw video from the study.

*Describe the actual content of your study. Here is what we describe in our umbrella protocol for the alpha testers:*

*A typical infancy study would involve displaying a short video or a sequence of images with accompanying audio to an infant in order to measure looking time or preferential looking. Older children may additionally see more abstract representations of scenarios or data (e.g., storybooks, charts, maps). Participants may be asked to give verbal responses to questions or to look or point at particular objects on the screen. The parent or guardian of an infant or child participant may be instructed to read a script, interact with the child, incorporate materials readily available at home, or draw the child's attention to a particular aspect of the display. Alternately the caregiver may be asked, as in typical lab studies, to try to avoid speaking with the child or paying attention to the display until the experiment is over. Wherever possible, if parents are asked not to view or listen to stimuli during the study, they are offered the opportunity to preview the stimuli without their child beforehand.*

*Looking time, direction of gaze (e.g. to the left or right of the screen), overt responses (e.g. facial expressions, pointing), and/or verbal responses may be coded from the webcam video recorded.  This is noninvasive and requires no additional equipment beyond the webcam. Adult participants, older child participants, and parents of child and infant participants may also be asked to provide written or multiple-choice answers to questions. For instance, a six-year-old might be asked to click on the toy animal he thinks is really inside a box after hearing guesses from several characters. Parent speech and behavior may also be coded when relevant; the parent, parent-child dyad, or interaction may be the subject of study.*

Children are always in the presence of a parent during the study; their positioning is generally at the parent’s discretion (e.g. in a high chair, held on the parent’s lap, or sitting independently in front of the parent). No infancy experiment session (for children 0-12 months) will be designed to last longer than 30 minutes, and no experiment session will be designed to last longer than 90 minutes, although typical studies are much shorter.

The participant (and/or the participant’s parent or guardian, as applicable) has the option to stop the experiment at any point by pressing a key or closing the browser window. They may also choose for any reason upon completing or ending the session to withdraw their video data from the study; in this case no video beyond the consent recording will be viewed.

*If applicable: Because some studies are training studies, or focus on individual differences or change over time, we may run multiple sessions with the children.  Families may participate in as many or as few sessions as they choose. Families may be invited by email to participate in follow-up sessions if they have set their communication preferences accordingly.*

**Inclusion**

**i. What are the criteria for inclusion or exclusion?** All parents will be able to provide informed consent (either by reading aloud in English or in ASL). All families will have a working computer, webcam, and internet connection in order to proceed through a study. *Individual studies may have additional criteria, including criteria based on children’s ages, gestational ages at birth, gender, or behavior during an initial section of a study.*

**ii. Are any inclusion or exclusion criteria based on age, gender, or race/ethnic origin?** *If so, please explain and justify.* This is a platform for developmental research, so age is generally a factor in participant inclusion. For our own research questions, no inclusion criteria are based on gender or race/ethnic origin.

*Individual studies may use age and/or gestational age at birth (e.g. born at 32 weeks vs. 40 weeks) as an inclusion criterion and/or to generate adjusted ages for premature infants. Individual studies may test hypotheses about other characteristics including gender, race, ethnic origin, linguistic background, family structure, vision or hearing impairments, developmental or genetic disorders, or motor development, and therefore recruit subjects and/or exclude data on these bases.*

Families and children are never prevented from taking part in studies, but their data may not be used in primary analyses if they do not meet the inclusion criteria.

**iii. Please explain the inclusion of any vulnerable population (e.g. children, cognitively impaired persons, non-English speakers, students), and why that population is being studied.**

As developmental researchers, our goal is to characterize the early stages of learning and reasoning, so children are the focus of our research.

**Recruitment**

Participation will be possible via the Lookit website (<https://lookit.mit.edu>). We will *[describe your own recruitment/advertising efforts: e.g., posting flyers locally, mentioning study to in-lab participants, calling from database, mailings to families or inserts in hospital folders, social media, etc.]*

MIT personnel also advertise the Lookit site to build its userbase. Lookit may advertise on relevant websites or online forums, including social media, or send information to family-related email lists. They may participate in local outreach events, distribute flyers, etc. Their flyers and posts may mention new or ongoing individual studies conducted by the platform and/or research progress enabled by Lookit.

The family’s decision about whether to participate is always made privately, online, while viewing a written description of the aim of the study, time involved, and procedures. In contrast to recruitment for an in-lab study, there is no social pressure or “commitment to participate” earlier in the process, for instance on the phone with study staff to schedule a visit.

Current Lookit users (families with an account) receive automated emails announcing new studies that their children are eligible for (either when a new study is posted, or when their child enters the age range). These emails give a brief description of the study, provided by the responsible researcher, and a link to learn more. Users only receive these emails if they have chosen to receive announcements of new studies, and can change their email preferences at any time. All automated emails contain a link to change email preferences/unsubscribe.