Table of contents

• Terms and Definitions 3
• Step by Step Instruction for Creating Assignments 4
• Uploading Your Input Data 9
• Sandbox 10
• Paying for the HITs 12
• Timing of HITs 13
• Filtering the Subjects 14
• Publishing Our Own Surveys via MTurk (survey link) 18
• Approving/Rejecting the Workers 16
• Some Suggestions 19
• Comparison with SurveyMonkey 20
Terms and Definitions

• Amazon Mechanical Turk (MTurk) is a crowdsourcing internet service through which individuals and companies can survey a group of people.

• The individuals or businesses who develop the survey are called ‘requesters’, and the participants are known as ‘workers’, or ‘turkers’. The job that the worker performs in MTurk is called a Human Intelligent Task (HIT).

• Before publishing a HIT, users have to determine the number of ‘assignments per HIT’, which is the number of times a HIT will be published. Each participant will perform one assignment, so the number of assignments per HIT is equal to the number of data points a researcher intends to collect.

• A ‘batch’ is a survey package that the requesters publish. Each batch contains a number of assignments.
Step by Step Instructions

**Step 1:** Create an account: You can go to https://requester.mturk.com and create your account (Olson Lab has an account).

**Step 2:** Click on ‘create’ on the top bar. From there you choose to whether start creating a batch (HIT) from scratch (New Project), or modify one of your older projects to create a new HIT (New Batch with an Existing Project).
Step 3: If you want to make a new project from scratch, you can click on the 'new project' tab under 'Create'. Now you need to select which type of survey you want to create. There are several different project types you can choose from. Here is a brief summary of different task templates:

-Survey link: you can place the link to your customized survey on your own website. (This is explained in more detail later)

-Survey/Other: This option helps you create a questionnaire with various questions types (multiple choice, text box, radio buttons, etc)

-Tagging of an image: In this kind of assignments, the participants write short captions or descriptions for images.

-Moderation of an Image: The participants select an image based on the instructions by clicking on them.

-Writing, Data collection/Transcription from A/V/Transcription from an image: The participants write their answer to questions in a text box.

-Sentiment/Categorization: The users answer a number of multiple choice questions to select the sentiment of contexts or categorize them.
After choosing your survey type of interest and clicking on "Create Project", you will see three tabs:

- The "Enter Properties" tab allows you to set the general settings as well as the number of HITs per assignment (see page 3), and a few options for filtering out the subjects.

- After you fill out the form in "Enter Properties", you can change the design of the task via the "Design Layout" tab.

- In the design layout section you can see/edit the HTML/Javascript code of your task by clicking on the 'source' button (switch from the view mode to the editor mode). Note that in order to save the code you need to click on the 'source' button again and switch to the view mode.
After saving the design layout, the final section is “Preview and Finish”. You can always come back to “Design Layout” or “Enter Properties” to edit those sections. You need to click on the “finish” button in “Preview and Finish” tab in order to be able to have your task ready for publishing. Clicking on “finish” does not mean the task will be published. It means that it is a finished task and you can publish it if you want.
Step 5: After clicking on “finish” you will be sent to this page:

- Here you can see a list of the HITs you have so far created.

- By clicking “Publish Batch”, you will be sent to one last review page, similar to the “Preview and Finish” tab, and then to payment to see your receipt and finalize your payment.

- If you click on the “Edit” button, you will be redirected to step 4.

- After finalizing the payments this page appears, which shows that your task is getting published. Note that it can take around 30 seconds to a few minutes for the publish bar to say “100% published”, which means that your task is published and the workers can see it in their search list.

- In order to see the results, you can click on the result button at the bottom right. You can then download your results as a CSV (comma separated values) file, which can be opened in Excel or as a text file.
Uploading Your Input Data

- While using some template types, you can upload your input as a CSV file. This is optional, but it can help specially when you have a large number of inputs.

- An example: If after clicking on ‘Create’ and ‘New Project’ you choose the “tag an image” template, after completing the the “enter Properties” section, and clicking the “edit” button you can see the page in the right

You can see that there is a ‘$’ sign in the code, which indicates it is an input variable. In this example, the image URL is an input variable, which needs a value given by you.

- You need to just leave the variables and save your task and go to ‘preview and finish’ and finish it. When you want to publish your task, after clicking publish, this dialogue box appears, which asks you for the input variables. Before uploading your input CSV file, you can download the sample file to see how the right format looks like. The column headers in the CSV file need to match the variable names that you defined, and each row of data in the file represents a HIT that will be created.
In software engineering, developers test their products in an environment called sandbox, before releasing them, to see how the experience of the users would look like. In Mturk also you can test your HIT in the sandbox environment:

• First, create an account in the requester sandbox at: [https://requestersandbox.mturk.com/](https://requestersandbox.mturk.com/). The requester sandbox environment looks very much like the requester environment discussed in previous section. Therefore, you can create your task in the requester sandbox the exact same way as steps 1-5 in previous pages.

• After you create your task in the requester sandbox, you can publish it. Although a finalize payment page will appear at the end, it is free and no money is charged from your account. The payment page is there to just show how much the HIT would cost you in reality.

• After your task is published, you should sign out of your requester sandbox, and sign in to your worker sandbox. This way, you will see what a user would experience. To create an account in the worker sandbox, you can go to [https://workersandbox.mturk.com/](https://workersandbox.mturk.com/).
• After creating your account in the worker sandbox, (sign in as worker in the top right section of the page) by clicking on HITs tab you can see the list of all HITs that a user with your qualification is able to see. It can take a few minutes before your HIT appears on the list. You can also search your requester user name in the search box and find your HIT faster.

• After finding your HIT, you can click on ‘View a HIT in this group’ button on the right side. Then you need to click on “Accept HIT” at the bottom of the page so you can perform the HIT task and see what the workers’ experience would look like.
Paying for Your HITs

• The amount to be paid in total is decided by the requester at the beginning of creating the HIT in the “Enter Properties” section in step 4. The requester needs to enter the amount of money in US dollar per participation in the “Reward per assignment” section. For example, if a HIT would take a participant 2 minutes in total (since accepting the HIT till they are completely done with the task; you can find this out by the preview and finish page or trying the task in worker sandbox a number of times), you can write 0.4, meaning that they will earn $0.4 for their participation. Also note that each participant can take each HIT only once.

• This reward is the multiplied automatically by the ‘Number of assignments per HIT' by MTurk, and is added to an amount that Mturk charges. The total amount is only displayed in the final step right before publishing a HIT (Step 5). You can always edit your project and change the amount per participation before confirming the payment.

The current pricing (August 2016) policy can be found under the “pricing” tab under the “Home” tab.
Timing of your HITs

- Requesters can estimate the amount of time that their HIT takes through previewing it in “Preview and Finish” section, or via worker sandbox.

- In the “Enter Properties” section there are two fields that deal with timing of your task: “Time allotted per assignment”, and “HIT expires in”. The first field is asking how much time are you willing to give the worker to finish her/his task. You can give the workers a higher amount of time than the actual time it takes them. In fact, it's better to not rush the workers. This does not change the amount of money you will pay them. The rewards can only be changed via the “Reward per Assignment” section.

- The “HIT expires in” field just determines how many days the HIT should show in workers' list if all the assignments are not completed.

- The ‘Auto-Approve and Pay workers in’ field is asking you how much time you need to go through the results to approve/reject them. After that time period all remained workers get approved automatically.
Filtering the Subjects

• Mturk allows requesters to limit their subjects based on a limited number of qualifications. The qualifications that Mturk provides include the country of the subjects (the location field), the HIT approval rate, which is the percentage of the HITS that workers have previously finished that were approved by the requesters, and Number of HITS approved, which is the number of the previous HITS that the workers have done and were approved by the requesters.

• The HIT approval rate for a large number of workers is above 90%. Based on experience, for a typical assignment of, for instance 1000 HITS (1000 subjects), you can safely assign the approval rate as above 90% with no problem of finding enough workers in one or two days. Using only this measure is enough for filtering out good workers, and it’s not necessary to filter them based on the number of approved HITs.

• The number of options that Mturk provides for narrowing down the subjects is very limited. For example, it is not possible to get only subjects of a certain gender, age, etc. Therefore, requesters need to come up with their own way to filter out the workers. Using Javascript code in the “Design Layout” part is one way of screening out the subjects with certain features. A screening question at the beginning of the task is the best way of doing it, however, the knowledge of Javascript is needed to avoid issues such as same worker taking the assignment again by refreshing the page, etc.

• If Requesters want to filter out the workers who have taken their assignment before, they can save the worker IDs of the previous workers and filter out the ones that take the test again at the beginning of the task. Most workers do not remember if they have taken a task before because they do many assignments in a day, so it is required that the requesters filter them out using screening out question at the beginning of the assignment.

• Who are the Masters? According to Mturk, Masters are the workers who have demonstrated excellence across a wide range of areas.
Publishing Your Own Surveys via Mturk (Survey Link)

• Despite the several different templates that Mturk provides, still it is not possible to create interactive surveys (meaning that the question or sequence of the task changes based on the worker’s answers). This is a common problem with behavioral/decision making tasks.

• The way to tackle this issue is to create our own surveys in our own website and connect it to the Mturk, so the workers take the survey there. In order to make this happen, we need to chose the option “Survey Link” in step 3. There is a field in the template that the requester fills with the link to the test in another website, and the worker clicks on it to see the task.

• After the workers perform the assignment on your website, they need to be given a random code or password (using The task code) by the task at the end, which they can submit so they can prove that they have taken the task. The requesters obviously need to save the codes in their database so they can match them with the code that the workers submit in Mturk. In this case the instruction should be clear for the Workers to avoid confusion.
Approving/Rejecting the Workers

• Not every worker gives valid answers to the assignments. Requesters can use various accuracy measures to find if the answers are right or not. For instance, the time that took the workers to perform the task, which is provided by Mturk in the results, can be used as a measure to see which workers performed the task too fast. In case of using a survey link, requesters can internally include the Javascript code for measuring the timing of a certain part of the task. Mturk results only gives the total time the user spent to perform the task since accepting the hit until final submission of it.

• Requesters can reject workers in the result page. The results can be viewed easily by clicking the “Manage” tab (the picture in the left).

• In order to view/download the results, or approve/reject them, the requester can then click on the result button for each HIT.
Approving/Rejecting the workers

• After clicking on the “results” button, a page similar to the page below appears. In order to approve/reject workers, you can click on the checkbox on the left side of each worker ID, and then click Approve/Reject. You can also click on the checkbox on the top, and select all of the workers in one page and make a decision about their assignments. When you reject a worker, a dialogue box will appear which asks you for a reason for rejection. Mturk lets you republish the rejected assignments, so other workers take it. This will not cost any extra money.
Approving/Rejecting the workers

Another way of approving/rejecting assignments is to download the results through “Download CSV” button, edit it, and upload the edited file back. This method is more efficient when the number of assignments is high. The CSV file has the worker ID in it, so after you download it and open it in Excel, you can edit the cell in the excel file that corresponds to each worker. In order to approve a worker, all you need is to put an "x" under a column titled "Approve", and for disapproving the user, you need to write briefly why you reject that result under the column titled “Reject”. After uploading the edited CSV file back in, Mturk will take care of the results automatically.

<table>
<thead>
<tr>
<th>MSID</th>
<th>Worker ID</th>
<th>Lifetime Approval Rate</th>
<th>Surveycode</th>
</tr>
</thead>
<tbody>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A05CMQRVYR0N</td>
<td>0% (0/0)</td>
<td>43.6,2.4</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>AJ2QSCQ7ZB2E</td>
<td>0% (0/0)</td>
<td>57.7,8.3</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A2JSCQ9K5F43</td>
<td>0% (0/0)</td>
<td>81.1,10.2</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>AP2Q87T58Y0D</td>
<td>0% (0/0)</td>
<td>84.7,7.5</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>ANP7D96LOQY0</td>
<td>0% (0/0)</td>
<td>1.0,0.0</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A3N7T80OQCG8</td>
<td>0% (0/0)</td>
<td>50.9,8.2</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A2QJT9Q5T0C8</td>
<td>0% (0/0)</td>
<td>85.9,2.6</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A2ZK9S468KB</td>
<td>0% (0/0)</td>
<td>46.9,9.8</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A3QJ8Q5T0C8</td>
<td>0% (0/0)</td>
<td>38.8,5.3</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A1QVQRQ0QGS4</td>
<td>0% (0/0)</td>
<td>5.4,2.6</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A2QJ8K5Q890PB</td>
<td>0% (0/0)</td>
<td>43.5,5.4</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A3QJ8Q5T0C8</td>
<td>0% (0/0)</td>
<td>59.8,4.3</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A2N5ODCQ0CF</td>
<td>0% (0/0)</td>
<td>5.1,4.4</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A3QJ8Q5T0C8</td>
<td>0% (0/0)</td>
<td>25.3,8.8</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A2N5ODCQ0CF</td>
<td>0% (0/0)</td>
<td>15.3,8.3</td>
</tr>
<tr>
<td>3XN299FFX4OGXSTLXVXU4XJ5X0C8</td>
<td>A1B1H5R5K02MBT3</td>
<td>0% (0/0)</td>
<td>3.10,1.6</td>
</tr>
</tbody>
</table>
Some Suggestions

• Try to be responsive: The workers might contact the Email address connected to your Mturk requester account or the contacts that you provide in the task or in the consent form. Being responsive to their Emails is a good way to avoid receiving bad reviews.

• Try to reject only the outliers: This depends on your task, but it is better if you do not reject everybody who gets the task partially wrong. This helps you be able to provide a reason for rejecting the subjects. For example, if the subject put her/his salary as 800,000 dollars a year, it is a good idea to reject that assignment, because it is an extreme outlier among the workers in the US in 2016. Another example: if the worker puts a wrong survey code (in case of using the survey link template), it means that the user did not take the task, and only wrote a random code and submitted it. When the user takes a task that usually takes 5 minutes in less than a minute another example.

• If you do not reject workers within the number of days mentioned in the “Enter Properties” page, they will all be approved. But also it is better if you approve/reject the workers in a few days. Otherwise you can get bad reviews or many Emails.

• If you see an issue with your HIT and want to cancel a batch after publishing it, you can go to “Manage”, then cancel the batch. You will be charged only for the approved users, and the amount Mturk charges you for that number of users. So if you do it quickly enough, you will not lose money, and it will be saved in your account for republishing it.
Mturk VS. SurveyMonkey

• SurveyMonkey is a well known crowdsourcing platform where researchers and businesses can survey groups of people. Below a comparison is provided between the two (including the paid method in SurveyMonkey) based on experience:

• **Advantages of Mturk over SurveyMonkey**

  • We can change the Prices on Mturk while on the SurveyMonkey’s paid method, the prices are fixed. According to experience, SurveyMonkey prices are higher than typical Mturk HITs that the requesters decide (This difference is significant when the number of tasks is higher. However, it is very important that the requesters pay a fair amount to the workers).
  • We can connect our own survey link to the Mturk, but in SurveyMonkey that is not possible. This is a big issue when dealing with interactive assignments, where the assignment logic/etc needs to change based on the users’ choices or performance.

• **Advantages of SurveyMonkey over Mtruk**

  • The paid SurveyMonkey platform provides the researchers several ways to limit their subjects. This is an important problem with many studies, and if the requesters want to limit their users via Mturk, they need to integrate screening functions in their task code.
  • The interface for SurveyMonkey is easier to work with and more user friendly, specially for the researchers who do not have the experience of working with web programming languages.
Good Luck With Your Surveys!

Nima Asadi
nima.asadi@temple.edu