

# Notes on Dedoose Analysis

## Contents

Naming Convention for Interview Files .....	2
Data Structure in Dedoose .....	2
Code Structure .....	3
Broad Themes .....	3
Granular Node Structure .....	3
Round 1 Coding .....	5
IRR Testing .....	6
Summary of Results from the IRR Test .....	7
Round 2 Coding .....	9
Protocol for Coding for Round 2.....	9

## Naming Convention for Interview Files

The interview files need to be de-identified before they can be uploaded to Dedoose to ensure that individual privacy is retained. A unique identifier has been created for each transcript based on the primary and secondary categories (i.e., detector, analyst, policymaker) as well as a count variable. See example below:

<b>Primary Category</b>	<b>Secondary Category</b>	<b>Count</b>	<b>Unique ID</b>
Detector	Analyst	01	DA01

If there are multiple files associated with a particular individual, then the second file's Unique ID would have an added "-#." For example, DA-2 for the second file and DA-3 for the third file.

## Data Structure in Dedoose

As files are imported to Dedoose as "Media." The following variables are added as "descriptors" or attributes of the media.

- **Primary Classification:** The primary category for an interviewee (detector, analyst, policymaker)
- **Secondary Classification:** The second category that an interviewee could be classified in the process of producing and utilizing research (e.g., detector, analyst, policymaker).
- **Date of Interview:** The date the interview took place. Currently look for a way to indicate if the interview took place over multiple dates. TBD. Supplemental documentation (e.g., handwritten notes and those that sent their answers in addition to the call) default to the date of the interview.

Currently exploring whether the format the content of the files is sufficient or whether clearer headers are needed. Also exploring whether PDFs can be read.

## Code Structure

Two different sets of nodes appear in our notes. The first set is the macro-level coding nodes based on initial coding of transcripts by hand. The second set is the actual structure of codes that are in Dedoose

The coding structure is described duplicated below along with the color coding that relates the more granular nodes to the broad themes. Note that the color coding is not a perfect system - colors are changeable and granular nodes can apply to multiple themes. We are most interested in how the broader themes relate to more granular nodes. Coding in Dedoose allows for statements to be coded for multiple nodes at once. Update this table as applicable.

### Broad Themes

Theme	Categories	Color
Data	Data Processing (RQ1) Knowledge Claim (RQ1) Reliability and Robustness (RQ3)	Purple
Institutional	Academia vs. Other Contractors (RQ3)	Yellow
Media		Pink
Policy Environment	Pre-Existing Directive (RQ2) Scientific Urgency (RQ3)	Blue
Technology	Data Processing (RQ1) Black Boxes (new)	Green

### Granular Node Structure

Parent Code	Child Code(s)
Institutional (Yellow)	Academia
	Academic Specialty/Area of Expertise
	Intelligence
	Educational background and training
	Field Convergence
	Policies and Legislation
Data (Purple)	Credibility
	Reliability
	Robustness
	Data Source
	Data Accessibility and Restrictions
	Directives
	Evidence
	Example
	Finding
	Interpretation
Objective	

	Analytical Process
	Metadata
	Reputation
	Standard
	Trust
	Subjective
Other (Red)	Ethics
	Translating to Different Audiences
	Looting
	Financials
Media (Pink)	
Policy Environment (Blue)	
Technology (Green)	Method
	Equipment
	Developments
	Satellites and images

## Round 1 Coding

- Go to Media tab and click on the "descriptor" button. If an appropriate entry already exists (e.g., if the interview was conducted on the same day and for the same classifications) link that set of descriptors. Otherwise click the button at the bottom right that says "create and link" and then fill out the descriptor attributes accordingly.
- click on the "memo" button and create a "Metadata" memo for the Media you are about to code. Use the memos to note changes to the coding structure or decisions you are making about coding that media in the moment.
- double click on the file to open it and start coding
- When coding, highlight the excerpt and hit the space bar on the keyboard to bring up the coding tree. Double click on a code to apply it. If realize that you have missed a code, you can look to the right and drag the code from "codes" to "selection" after the fact. If the excerpt is relevant to at least 1 of the 5 broad themes, make sure to select that code as well as any relevant child codes. Try to be parsimonious with the code applications.
- If the code you want does not exist, add it to the code structure and then make a note that you added it in the metadata memo for that media. Then send an email to the other person (or chat them if both are online at the same time).

## IRR Testing

Once all of Round 1 coding has been completed, Michelle will select a 10% stratified random sample of excerpts (2 per code category so they are all included) and will then create an IRR test that both Fiona and Michelle have to complete. That way we can see the results of how our coding compares and whether there are any inconsistencies that need addressing prior to Round 2. All Excerpts were identified and coded in round 1, then exported to excel. Counts for each code are calculated to make sure there are at least 2 of each code (see “Round 1 Coding Excerpt Randomization” spreadsheet for summary statistics).

A stratified random sampling method with replacement was employed so that each Code received at least 2 excerpts selected. Replacement is allowed for efficiency, meaning that the same excerpt could be selected multiple times for each code. The only excerpts excluded from the sampling are those that have no codes attached - these are likely ones that have memos/notes attached to them. There are only 10 excerpts without codes, their unique IDs are:

- AD06.106
- AD06.111
- DA08.513
- DA08.518
- DA08.526
- DA16.604
- AD10.629
- A36.653
- P22.871
- P26.1040

The stratum is the code. There are 35 unique codes and 1050 excerpts so 10% is 105 excerpts, which translated to exactly 3 rounds of sampling. The following are the excerpts selected from the random sampling. To see the specific excerpts attached to each ID, look at the “Round 1 Coding Excerpt Randomization” spreadsheet. There are a few duplicates, as intended:

Excerpt Unique IDs		
A02.448	A36.666	DA08.536
A02.464	A36.672	DA08.540
A02.478	A36.685	DA08.546
A04.419	A36.687	DA08.553
A05.217	A36.688	DA08.555
A05.226	AD01.86	DA08.557
A05.228	AD01.87	DA16.611
A05.239	AD01.88	DA16.614
A05.240	AD06.137	DA16.620
A05.244	AD06.147	DA16.623
A05.245	AD07.358	DA21.968
A05.247	AD07.362	DA24.908
A05.258	AD09.961	DA29.64

A05.267	AD09.966	DA29.64
A14.705	AD10.634	DA33.346
A14.706	AD10.637	DA33.351
A17.745	AD28.585	P13.198
A17.761	AD28.590	P13.199
A17.774	AD28.595	P22.856
A18.481	AD28.597	P22.869
A18.488	AP12.23	P22.874
A20.325	AP12.5	P22.878
A20.331	AP19.159	P22.880
A20.336	AP19.164	P22.882
A20.337	AP19.176	P22.890
A25.718	D27.795	P26.1020
A25.729	D27.801	P26.1031
A25.734	D27.802	P26.1031
A32.502	DA03.816	P26.1034
A34.560	DA03.839	P26.1037
A35.922	DA03.841	P26.1046
A35.952	DA08.508	PA23.274
A36.650	DA08.519	PA23.282
A36.652	DA08.520	PA23.285
A36.662	DA08.529	PA23.301

Equation (1) was used to calculate IRR at the excerpt level, where  $i$  and  $j$  are two individual coders. The numerator is the total number of codes that both  $i$  and  $j$  applied for a given excerpt in the sample. The denominator is the total number of codes applied by either coder  $i$  or coder  $j$  for that excerpt. To calculate the Inter-rater reliability between two coders ( $IRR Agreement_{i or j}$ ), take the average of all the scores for  $Excerpt IRR_i$  and  $Excerpt IRR_j$ , respectively. You need to calculate both  $IRR Agreement_i$  and  $IRR Agreement_j$  because each coder can apply widely different numbers of codes for the same excerpt and that will affect the IRR agreement.

$$Excerpt IRR_{i or j} = \frac{\sum(Code Agreement_{ij})}{\sum Codes_{i or j}} \quad (1)$$

### Summary of Results from the IRR Test

Dedoose calculates IRR based on the code application, which is less desirable for this project since the code application is context dependent in these interviews. Moreover, the goal for this coding is not to be exactly the same (100% agreement) but rather to have sufficient overlap in coding to indicate an alignment in *how* the codes are being used but to make sure that the coding is complementary. Some divergence is expected and desirable as the coders have different backgrounds and interview experiences informing how they look through the data.

The table below provides an overview of the different ways in which IRR can be calculated based on the excerpt. The first column “W/o Modification” presents the percent agreement based on the codes per excerpt without any changes or assumptions made of the data. The second column excludes the topcodes (or parent codes) of *institutional*, *data*, *other*, *technology*, *media*, and *institutional*. These were excluded because halfway through coding round 1, we adjusted the parameters of Dedoose to automatically apply them when a child code was selected and missing topcodes will be retroactively applied by Dedoose before round 2 coding begins. The two values of most interest – MF Reliability and FM Reliability – are below in green. By excluding the topcodes, both agreement score calculations meet the threshold of 50%.

<i>Desired IRR Threshold Goal: &gt;50%</i>		
<b>Avg IRR Scores by Excerpt</b>	<b>W/o Modification</b>	<b>Excluding Topcodes</b>
<i>MF Reliability</i> (# Codes Agreed on/ Total # M Codes)	32.88%	50.45%
<i>FM Reliability</i> (# Codes Agreed on / Total # F Codes)	54.11%	54.43%
M Reliability (# Codes Agreed on / Total # M Codes)	48.53%	50.59%
M Reliability (# Codes Agreed on / Total # M & T Codes)	23.88%	23.18%
F Reliability (# Codes Agreed on/Total # F Codes)	47.56%	45.78%
TF Reliability (# Codes Agreed on / Total # T&F Codes)	19.00%	20.40%

To further ensure that qualitatively both coders are in alignment in how they approach three key areas of interest, both coders reviewed patterns of code application with respect these areas of interest and then compared them. The three areas of interest are: (1) scientific urgency, (2) whether this is a subfield, and (3) credibility and reliability in data/findings production. Based on the qualitative comparison, both coders approach these three areas similarly, with a few exceptions. Fiona tends to code robustness more narrowly with a focus on the technological elements of the term. She also is more restrictive in how she applies credibility and reliability. Between both coders there was sufficient overlap between *credibility*, *standard*, and *trust* that further refinement to the coding schema is needed to ensure a more consistent and targeted approach to coding. The results of this are adjustment are discussed below along with the Round 2 coding protocol.



## Round 2 Coding

Round 2 coding is designed to be complementary coding rather than a full blind coding. This is more efficient but also dependent on us having a solid IRR score (threshold at least 50%). In essence, instead of going through and coding everything again, we will go through and review the other person's coding adding additional codes where needed and making comments where coding ideas diverge for later review prior to analysis.

Based on the IRR test and a review of our coding applications/clusters for three subject areas (subfield, credibility/reliability, and scientific urgency) we came to three decisions for coding for round 2. First, the definitions for "trust," "standard," and "credibility," should be made more specific so they can be used in a more targeted manner. Second, a new code "reputation" should be added. Third, the "robustness" code should be used more broadly than just a technological focus moving forward. The updated definitions, including for "reputation" are below.

- **Trust:** First person discussions of confidence in findings and black boxes. Discussing whether they "trust" another person's work or their findings should be coded as "Reputation" not "trust."
- **Standard:** Related to questions on standards of excellence and best practices. If they answer the question on credibility and reliability with a walkthrough of their analytical process it should be coded as "standard" not "credibility."
- **Credibility:** A first person discussion of how the interviewee assesses data quality and data sources. This includes discussions their analytical processes and methods. It focuses on how the individual engages with their data to determine if it meets a standard.
- **Reputation:** Housed under the "Data" parent code. Third person discussions of people and institutions that have a high reputation as well as the effects or influence of the perception of reputation on the findings and products that those people/groups produce. Discussions of "trusting another person's findings" belong under reputation not "trust."

## Protocol for Coding for Round 2

- Read the interview in its entirety. If there is a section without coding that you think should be coded, apply codes following the Round 1 coding as appropriate. For example, if information on academic specialty has not been coded, highlight and mark both the parent and child codes of Institutional and Academic Specialty, respectively.
- When reading through the interview, review all instances of coding in the document and follow the appropriate path below:
  - If you agree with the coding and no changes need to be made, leave it as is and continue reading.
  - If you agree with the coding in general but want to adjust it by adding/removing a code, select the passage by clicking the dot on the side of the bracket and then add/remove codes as necessary.
    - I think it would be prudent to keep a record of codes added/removed - the easiest way to do this would be to attach a memo to that passage and note the change to coding in the memo with the subject line "CODING ADJUSTMENTS" You can link these to excerpts and/or the media in

general. We should be able to filter easily as long as they have this subject line.

- If you disagree with the coding, add a memo to the passage with the subject line "CODING DISAGREEMENT" and then in the body note why you disagree and what your proposed coding would be. You can link these to excerpts and/or the media in general. We should be able to filter easily as long as they have this subject line.
- If you find a passage that you would have highlighted differently, you have two options: (1) review and adjust the coding as necessary per the above decisions, or (2) highlight your own version of the passage and code it with an attached memo using the subject line "CODING ADJUSTMENTS".
  - Generally try to avoid the second option, unless it makes a substantive difference from an analytical perspective.
- Once all of the coding has been completed, we can go back and filter memos by subject line and address all the coding disagreements at once. This will add a layer of review at the end of the coding process.