**E-thos Project Coding Manual (Scientific Witnesses)**

**Introduction**

This manual is designed for use for the E-thos analysis project. The goal of this project is to identify and analyze appeals to expertise and credibility made by witnesses giving testimony before congress on scientific issues including climate change, cloning, genetically modified organisms, vaccinations, and nanotechnology. The goal of this manual is to provide definitions and examples of the various categories used in analysis for the purpose of promoting a disciplined qualitative assessment of ethical appeals to witness expertise and credibility in the corpus of testimonies being examined.

**Analytical Categories**

***Ethos***

The argument feature that this project is interested in investigating is ethos. An ethical appeal is an **appeal by a speaker to their own character**. A speaker may want the audience to believe they are **knowledgeable/experienced** (*phronesis*), they are **virtuous** (*arête*), or that they have **goodwill** (*eunoia*) towards the audience. Of these three appeals to ethos, this project is dedicated to investigating the first, appeals to knowledge/experience. Specifically, this project endeavors to investigate how and how frequently experts from different disciplines as well as non-experts make appeals to expertise when testifying about scientific topics (climate change, nanotechnology, cloning, genetically modified organisms (GMOs), and vaccination) before congress.

**Categories of Ethical Appeals**

**Achievement (ACHIEVE\_INS or ACHIEVE\_INT):** In these appeals to expertise, witnesses emphasize their record of significant personal success in their field. This might include pointing out that they were the first to do something and can be considered the pioneers or founders of an institution (ACHIEVE\_INS) or the inventor of a technology or discoverer of a phenomenon (ACHIEVE\_INT). It might also include reminding the audience that they played a role in developing some procedure, method, or technology that has had a significant impact within or outside of their discipline (ACHIEVE\_INT).

E.g. I am the founder of the Berkeley Earth Study. (ACHIEVE\_INS)

E.g. I have developed technologies in gamete culture and manipulation, cryopreservation

and others. (ACHIEVE\_INT)

E.g. I am a Senior Research Fellow with the Pew Center. (ACHIEVE\_INT)

**Authorization (disciplinary) (AUTH\_P\_D)**: With these appeals, the speaker identifies the disciplinary area where they are claiming to draw their authority to speak on the issue at hand. Authorization statements based on disciplinary identity can include references to professorships, research fellowships, or memberships or service in professional organizations as well as general statements of expertise in an area.

E.g. I am a professor of environmental sciences at the University of Virginia.

E.g. Since this is within my own area of scientific expertise…

**Awards (AWARD)**: In these appeals to expertise, the witness recalls past recognition of their importance or contributions to their professional field. These appeals are meant to show that the witness is not only a member of a professional community but highly esteemed by other professionals in that community. This category includes any non-leadership position or society that the witness explicitly comments they were elected or chosen for.

E.g. He recently was awarded the Heinz award for his pioneering research.

**Education (Disciplinary) (LEARN\_D)**: In these appeals to expertise, the witness highlights their academic record suggesting they have completed the requisite intellectual training at credible institutions of higher education to be considered a credible source of information and argument on the topic they are testifying about.

E.g. I received my PhD and Master’s degree from Penn State.

E.g. I have also received extensive training in the areas of gamete physiology…

**Experience (Disciplinary) (EXP\_D)**: These appeals highlight the length of time the witness has been engaged in their professional community or professional activities in that community. By highlighting the number of years of experience, the witness shows that they have accumulated practical knowledge in their area of expertise.

E.g. I have worked for NOAA for 36 years.

E.g. I have been actively involved with climate science since the early

1980s.

**Leadership (LEADER\_D)**: Appeals in this category draw attention to the leadership roles that the witness has had in their scientific community. In these cases, the credibility of the speaker or their expertise is based on the fact that they have been recognized as an important member of their community by being elevated to a position of leadership. This category includes positions like president, chair, co-chair, director, dean, chancellor, etc.

E.g. I am president of the national academy of sciences. (LEADER\_D)

**Publications (PUBLISH\_D):** Appeals in this category draw attention to the number or authorship of publications and in some cases the prestige of those publications. In many academic disciplines the number and quality of publications is a measure of scholarly success; therefore, publications can also be used to highlight the expertise and credibility of a witness.

E.g. I have published over 100 peer-reviewed papers.

E.g. As the lead author of the IPCC…

**Coding Exercises**

**Exercise #1**

Label the following sentences or phrases using **EITHER** the appropriate category (Achieve (**AC**), Authorization (**AU**), Award (**AW**), Education (**ED**), Experience (**EX**), Leadership (**LE**), or Publication (**PU**)) **OR “None”** for sentences or phrases that do not contain appeals to expertise or credibility.

* …is a Senior scientist at the National Center
* I received a special commendation from President Eisenhower.
* Dr. Cicerone was educated at the Massachusetts Institute of Technology
* Phil [is] not obligated under conditions of past or present DOE proposal awards to provide…
* For two years I wrote an online column.
* Dr. Curry is a fellow of the American Meteorological Society.
* She is a prominent public spokesperson on issues associated
* I am not sure how educated the American public is about GMOs.
* I have been involved with the IPCC assessments since the first one that was published in 1990.
* I am a geochemist with years of experience studying the arctic.
* I hold a degree in engineering from Ohio State
* Leaders in our field tell us that climate change is happening more rapidly…
* He has received a number of honorary degrees and awards for his scientific work.
* My experience as lead author in the IPCC…

**Exercise #2**

**Read** the paragraphs below, **underline** any instances of ethical appeals expertise you find, and **label** each instance using the following abbreviations: (Achieve (**AC**), Award (**AW**), Education (**ED**), Experience (**EX**), Leadership (**LE**), Authorization (**AU**), or Publication (**PU**).) In a paragraph does not contain any ethical appeal write “None.”

Mr. Chairman and members of the subcommittees, I appreciate the opportunity to appear before you to discuss the Department of Energy’s FY 2000 budget request related to Climate Change.

Before I turn to a description of our budget request, however, I would like to note that since 1993 President Clinton has put into place dozens of win-win programs to develop and deploy energy efficient technologies and spur the development and broader use of renewable energy. The Climate Change Technology Initiative, announced in 1998, accelerates these efforts through a vigorous program of tax incentives and R&D investments. Together, these mutually reinforcing efforts constitute stage one of the President’s Climate Change plan, which seeks to lay a solid foundation for cost-effectively meeting the challenge of climate change.

I am professor emeritus of environmental sciences at the University of Virginia, and president of the Science and Environmental Policy Project, which is a nonprofit, nonpartisan research group of scientists. We all work pro bono, without salary, and we do not solicit money from industry or government, so we are fairly independent. We speak our minds on many issues as we see fit. We are mainly interested in making sure that the science underlying the various policies, environmental policies is correct and sound.

My name is Richard Alley. I am Evan Pugh Professor of Geosciences and Associate of the Earth and Environmental Systems Institute at the Pennsylvania State University. I have authored over 200 refereed scientific papers, which are “highly cited” according to a prominent indexing service, and I have made many hundreds of public presentations concerning my areas of expertise. My research is especially focused on the great ice sheets of Greenland and Antarctica, their potential for causing major changes in sea level, the climate records they contain, and their other interactions with the environment; I also study mountain glaciers, and ice sheets of the past. I have served with distinguished national and international teams on major scientific assessment bodies, including chairing the National Research Council’s Panel on Abrupt Climate Change (report published in 2002), and serving the Intergovernmental Panel on Climate Change (IPCC) in various ways, and the U.S. Climate Change Science Program. I had the honor of testifying to the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology in 2007; my testimony today updates and extends the material I presented then.

I really do appreciate this opportunity to speak. I want to bring some hard metrics to the hearing today. The first one comes from my testimony in Federal Court about California’s proposed auto emissions standards that the EPA may allow to go forward. I calculated using IPCC climate models that even if the entire country adopts this rule, the net global impact would be at most one hundredth of a degree by 2100, and even if the entire world did the same, the effect would be less than four hundredths of a degree by 2100, an amount so tiny we cannot measure it with instruments or notice it in any way.

I am Chair of the School of Earth and Atmospheric Sciences at the Georgia Institute of Technology. As a climate scientist, I have devoted 30 years to conducting research on a variety of topics including climate feedback processes in the Arctic, energy exchange between the ocean and the atmosphere, the role of clouds and aerosols in the climate system, and the impact of climate change on the characteristics of hurricanes. As president of Climate Forecast Applications Network LLC, I have been working with decision makers on climate impact assessments, assessing and developing climate adaptation strategies, and developing sub-seasonal climate forecasting strategies to support adaptive management and tactical adaptation. Over the past year, I have been actively engaging with the public (particularly in the blogosphere) on the issue of integrity of climate science, and also the topic of uncertainty.

**Instructions for Formatting Texts for Analysis**

1. Open the rich text file (.rtf) of the full testimony.
2. Scroll to the “Table of Contents?”
   1. Highlight all of the texts you want to extract for analysis.
3. Proceed to the page number of the first text you intend to prepare.
   1. The **oral statement** of the witness will be marked with an all caps header beginning with the words “Statements of…”
4. Highlight the full text of the oral statement including the header.
   1. Oral statements are often followed by **prepared**, or written, **statements** which begin with the words “Prepare Statement of…” Do not include these statements in the oral statement. These should be saved in a separate file.
5. Copy the text.
6. Open a new Word document
7. Paste the text into a new Word document using the “A” (Keep text only) option.
   1. Using the other paste options makes text cleanup more difficult.

**Cleaning the text (Round 1)**

1. Eliminate from thetestimony **introduction**
   1. Everything in the all caps header after the name of the witness.
   2. The name of the witness which precedes the text of the testimony. (E.g. Dr. Wegman.)
   3. Greetings or statements of appreciation (E.g. Good morning, thank you Senators, etc.)
   4. Statements expressing how honored the witness is (E.g. It is an honor to appear before this committee.)
2. Eliminate from the **body** of the testimony
   1. All gaps or spaces between words and paragraphs.
      1. You can use the replace function to do this automatically.
         1. Click “replace” on your top tool bar in Word.
         2. In the “find what” box hit the spacebar twice
         3. In the “replace with” box hit the space bar once.
         4. Click “replace all”
   2. All unnecessary hyphen line separations created in the previous formatting (e.g. “ex- plain” should be “explain”)
      1. You can use the replace function to do this automatically.
         1. Click “replace” on your top tool bar in Word.
         2. In the “find what” box type a hyphen (-) then a <space>
         3. In the “replace with” box input nothing.
         4. Click “replace all”
   3. Inappropriate breaks within paragraphs.
      1. Sometimes the parts of a paragraph will be separated by a number of lines. This space needs to be eliminated so the paragraphs follow their original formatting.
      2. If you are not sure whether parts go together, check the original text.
   4. Footnotes
      1. There are **two kinds of footnotes**: bottom of the text footnotes and in-text footnotes. Each are cleaned in different ways.
      2. **Bottom of the text** footnotes
         1. These may appear as numbers followed by text (E.g. 2 In 2002 the IPPC showed…). They usually occur at the bottom of the page.
         2. Select the number and all the text which follows it that appears associated.
         3. Delete
         4. If you are unsure about the extent of the text that belongs to a footnote, refer back to the original text
      3. **In-text** footnotes
         1. In-text footnotes appear throughout the body of the testimony, typically at the end of sentences.
         2. In-text footnotes can be cleaned using find and replace function in Word.
            1. Click “replace” on your top tool bar in Word.
            2. In the “find what” box type (.^#)

This will eliminate a period followed by any number.

* + - * 1. In the “replace what” box type period (.).

We still want the period.

* + - * 1. Place the cursor at the top of the text.
        2. Click the “Find Next” button

This should take you to the first instance in the text with a period followed by a number.

Look at the instance to see whether this is sentence ending with a period followed by a number.

If it is, then click “replace”

If it is not, then click “Find Next.”

We do not want to eliminate numbers with decimals, for, example which are also caught using this method.

Keep moving through the document until all in-text footnotes are replaced.

* 1. Any **dialogue of congressman** interrupting the witness.
  2. Any **witness responses** to an interruption.
     1. (E.g. I will refrain from doing that. To answer your question…)
  3. **Any charts, graphs, or tables** 
     1. These will likely already be eliminated because of the file format.

1. Eliminate from the **conclusion**
   1. Parting sentiments (Thank you, I look forward to your questions, etc.)

**Saving the Cleaned File**

1. **Name the file** using the following format
   1. **Year** (e.g. 2003)
   2. **Hearing Type**
      1. HR = House of Representative Hearing, S = Senate Hearing, H&S = joint House and Senate Hearing.
         1. (E.g. 2003\_HR)
      2. If there are two hearings in a given years, then include a number to designate where the hearing falls in the sequence of hearings.
         1. (E.g. 2003\_HR2)
         2. “HR2”would signal that this was the second hearing in the House on a subject in 2003.
   3. **Testimony Type**
      1. The testimony type represents the field of science that is the subject of the testimony. See the “Instructions for File Labeling” sheet for the list of abbreviations and descriptions of how to identify the testimony type.
         1. (E.g. 2003\_HR2\_CC)
   4. **Last Name** of the witness
      1. (E.g. 2003\_HR2\_CC\_Jones)
      2. If there are two witnesses with the same last name, add the first letter of the first name of the witness to the last name. For example, Quincy Jones would be.
         1. (E.g. 2003\_HR2\_CC\_QJones)
   5. **Witness Type** 
      1. Witness type identifies the professional identity of the witness. See the “Instructions for File Labeling” sheet for the list of abbreviations and descriptions of how to identify witness types.
         1. (E.g. 2003\_HR2\_CC\_QJones\_GOV)
      2. If a witness can be associated with two professional identities list each **in** **alphabetical order** separated by an ampersand (&).
         1. (E.g. 2003\_HR2\_CC\_QJones\_GOV&SCI)
   6. **Oral** or **Prepared**
      1. Add **“O”** for oral or a **“P”** todesignate whether the testimony was presented in oral or written form. See the “Instructions for File Labeling” for how to correctly identify the distinction.
         1. (E.g. 2003\_HR2\_CC\_QJones\_GOV&SCI\_P)
2. Save as a **plain text** file
   1. Choose “plain text” in the options on the “save as type” drop-down menu.
   2. Click “Save”
      1. A dialogue box will pop up.
   3. Choose the third option **“Other Encoding”** on the dialogue box.
   4. Scroll up the list to **“US-ASCII.”**
   5. Select this as your save option.
      1. ! This step is crucial because this is the only format DocuScope and the Python program can read!
3. Save the file in the folder which corresponds to the year of the Congressional hearing.

**Cleaning the text (Round 2)**

1. When documents are transformed from rich text file (.rtf) format to plain text (.txt) ASCII format certain characters (“ , ‘ , -) aren’t recognized and get converted to question marks (? or ??).
2. These question marks are problematic because they create problems when later analytic tools are used to identify sentence boundaries.
3. To avoid problems in later automated analysis, all question mark punctuation needs to be checked and if necessary replaced with the appropriate punctuation using the following procedure:
   1. Open the text in Notepad
      1. Left click the saved ASCII file you want to clean.
         1. A dropdown menu will appear.
      2. Click “Open With.”
      3. Click “Notepad.”
   2. Click “Edit” on the top tool bar.
   3. Click “Replace” in the dropdown list.
   4. In the “Find what” box type “?”.
   5. Place the cursor at the top of the text and click to set the cursor there.
   6. Click the “Find Next” button
      1. This should take you to the first instance in the text with a question mark.
      2. Look at the instance to see whether the question mark is being used appropriately as punctuation.
         1. If it is, then
            1. Click “Find Next”
         2. If it is not, then
            1. Identify the correct punctuation to insert (“ , ‘ , -)

Consult the original rich text file if you are not sure which punctuation to insert.

* + - * 1. Enter the appropriate punctuation into the “Replace with” box.
        2. Click “Replace”
        3. Click “Find Next.”
    1. Keep moving through the document until all incorrectly used question marks are replaced.
    2. At the end of the cleaning **save** the changes.
       1. Click “File” in the top toolbar on Notepad.
       2. Click “Save.”