

## FYS 196: Thing Explainer

### Important dates

- **10/24** email Dan with your selected animal + communication system
- **11/14** mid-process version of the write-up (illustration optional)
- **11/26** final assignment due (illustration + writing)

### Assignment in a sentence

Illustrate and annotate one animal's communication system that could appear in a science book for middle school or high school students.

### Learning goals

- Practice visual communication in conjunction with written science communication
- Focus on translating complex things in (very) simple language

### The assignment

Create one infographic in the style of a *Thing Explainer* depiction that annotates how one specific animal species communicates. While it does not have to be explicitly or exclusively focused on courtship communication, it must be primarily about one specific type of communication that animal uses (how it produces the signal, how the signal is perceived, in what context, what behavior does it elicit). Additionally, given Smith's "Year on Climate Change", I invite you all to (**optionally**) incorporate some aspect of how global climate change is affecting your selected specie's communication (e.g. urban noise and birdsong; water pollution and impaired chemical communication with fish).

This assignment comes from a beloved internet comic you may be familiar with (*xkcd*) by former NASA engineer and current science cartoonist Randall Munroe. One of his most popular comics "[Up-Goer Five](#)" explains how NASA's *Saturn V* rocket works based on the 1,000 most commonly used words. This comic was the launchpad for an entire book (*Thing Explainer*) translating complex things and concepts using the same rules, including: "bending computer" (laptop); "bags of stuff inside you" (anatomy of the human torso); and "food-heating radio box" (microwave). **\*\*See the course Moodle page for a few biology-related examples!\*\***

Your job will be to work in pairs and to research one animal we haven't discussed in class and create an annotated illustration of that animal communicating using only the 1,000 most commonly used words.

### Your audience

Aim for a middle-school to high-school aged young adult. As recent high school graduates yourself, think back to what information you would find accessible, entertaining, and informative.

### What to do

**First**, you'll research some animals or communication modalities you find interesting. I've come up with a list of possible topics and resources you can choose from, but you can also propose your own topic:

[https://drive.google.com/open?id=100Npl4bl3FoLGH5bBbGAeKT\\_Sj-1RnoNuVE9enwjrg8](https://drive.google.com/open?id=100Npl4bl3FoLGH5bBbGAeKT_Sj-1RnoNuVE9enwjrg8)

If you need help finding an animal/communication system, please email me and I'd be happy to brainstorm with you. Your group's topic should focus mostly on the communication aspect, but you have some flexibility about what component you focus on. For example:

- how it uses its communication (e.g. courtship dance in jumping spiders)
- how the animal learns its communication (e.g. song learning in zebra finches)
- how climate change is changing its communication (e.g. urban noise and vocal communication)

**Next**, read up on your selected animal. What's known about how this animal courts a mate (or communicates in other ways)? An initial preliminary search using Google Scholar or Web of Science might be: "[your animal] + courtship" is advisable. Review articles are helpful too. Again, contact me if you have any difficulties finding background on your topic.

**Finally**, synthesize what you've learned! Now that you're an expert on this animal/its communication system, draw a scene including this animal in its typical environment using any medium you'd like (pen n' pencil; painting; digital illustration; collage – it's up to you), and annotate the different parts of the animal and its anatomy/environment/behavior/etc.

**The twist:** **You can only use the 1000 most commonly used words (like the real [Thing Explainer](#)).**

Check out this [text editor](#) to make sure your vocabulary is ok. Note – it will be hard, and hopefully fun, but that's the point 😊

### Requirements: what a successful finish product will include

- 1) **The annotated illustration (aka, the infograph)**
  - Overview (intro) paragraph (~100 words)
    - One paragraph briefly introducing the animal and the topic
  - Text "blurbs" (paragraphs; 10 min. – aim for 50 – 100 words per blurb)
    - **Importantly – your text must only use the 1000 most common words**
    - Each paragraph/topic "bubble" should have a fun, brief + informative title
    - 2 boxes/paragraphs about some anatomical aspect of how it communicates (e.g. syrinx [vocal muscle] + HVC [brain region] for songbirds).
    - Remaining paragraphs are up to you! But will need to thoroughly explain how, why, where, etc it communicates/behaves.
  - Illustration
    - A drawing, collage, painting, or photograph of your topic and focal specie + topic
- 2) **A text file**
  - Actual write-up used for the illustration
  - Topic/theme for each blurb you translated

- For each “blurb”, provide the translated + technical language
  - E.g. A paragraph on songbirds vocal muscles might be: “Sound Maker (Syrinx)”
- 3) ***APA-formatted works cited***
  - Minimum 2 primary resources
  - 5 resources in total at minimum are required (including the 2 primary)

Thing Explainer - Grading Rubric

	<i>Exemplary (100%)</i>	<i>Proficient (70%)</i>	<i>Partially proficient (50%)</i>	<i>Unsatisfactory (0%)</i>	<i>Points</i>
	20 pts	14 pts	10 pts	0 pts	
<b>Introduction; overview paragraph</b>	Catchy & clever introduction. Provides relevant background and establishes a clear purpose, as well as previews the theme/topic. Engages audience immediately.	Describes topic and engages the reader as the introduction proceeds.	Somewhat engaging. Provides a vague purpose.	Irrelevant introduction that minimally engages reader. Does not include an introduction or purpose is vague and unclear.	
	30 pts	21 pts	15 pts	0 pts	
<b>“Blurbs” (descriptive paragraphs)</b> *10 min. in total *2 of the 10 must be on anatomy (can do more if you want)	Paragraphs are consistently well structured and developed. They are organized around a clearly stated, well-positioned central idea (title + topic sentence), which is thoroughly supported with evidence. The sentences are coherent (they are clearly linked) and unified (they stay on topic).	Paragraphs are well structured but there are lapses in development. They exhibit all the essential elements, but often these elements could be developed more fully and/or in a more orderly manner. The sentences may show minor lapses in coherence and unity.	The paragraphs are poorly developed. They barely manifest the essential elements, or not at all. The sentences often show major lapses in coherence and unity.	No clear organization within paragraphs, nor any topic cohesion, evidence, etc.	
	15 pts	10.5 pts	7.5 pts	0 pts	
<b>Evidence &amp; Scientific Content</b> *2 primary resources min. *5 resources min. in total	Accurate information from many primary and secondary sources. Citations provided at the end include several scientific studies and non-primary resources to substantiate claims. APA formatted.	Accurate information, but from fewer sources. Well-researched topic, but limited in scope. APA formatted, but may have minor errors.	Accurate information from minimal sources, and is under the total minimum requirement. APA formatted citations list contains multiple errors.	No citations list provided and/or no semblance of APA format.	

	5 pts	3.5 pts	2.5 pts	0 pts	
<b>Mechanics</b>	The writing is free of errors in grammar, punctuation, and mechanics.	The paper contains minor, occasional errors in grammar, punctuation, and spelling.	The paper contains numerous errors in grammar, punctuation, and spelling.	The paper manifests major, persistent errors in grammar, punctuation, and spelling.	
	20 pts	14 pts	10 pts	0 pts	
<b>Clarity and Accessibility</b>	Vocabulary is appropriate for the specific target audience and only uses the 1,000 most common words. Uses metaphors or other ways of explaining complex material in simple terms.	Vocabulary is appropriate for a non-scientist audience. Occasional use of words outside of 1,000 most common words.	Some technical jargon used and not explained. Many instances of words used outside of 1,000 most common.	Vocabulary is inappropriate for non-scientist audience, and/or multiple uses of words outside the 1,000 most common.	
	10 pts	7 pts	5 pts	0 pts	
<b>Illustration</b>	Depicted animal and communication system is creatively displayed. “Blurbs” are clearly connected to nicely visualized components of the science/environment and the focal animal(s).	Depicted animal and communication system is creatively displayed with occasional ambiguity or inaccuracy.	Depicted animal and communication system is displayed with several unclear connections with the writing or inaccuracies.	Shows no originality or clearly annotated images/scene for the chosen animal and communication system.	
					<b>Total pts</b>

Comments: