

Communication Networks in Richard Marsh's *The Beetle*

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Artifact type: In-class activity and discussion

Developed for: Upper-level undergraduate survey

Audience: English majors

Time required Two 90-minute class sessions + outside work

Method and tool: Network analysis and data visualization with Gephi

Description:

This in-class activity and discussion aims at generating different kinds of questions and insights about Richard Marsh's *The Beetle* than those produced through the experience of reading. To do so, students will create data visualizations using Gephi and analyze their communication networks in small groups. I selected *The Beetle* for this activity for two reasons: 1) it is a short novel, so groups can create their data sets and visualizations in a single class period under my supervision, and 2) the novel has four different character narrators and thus invites comparative assessments. A useful model for creating this activity was Scott Weingart's blog entry on a similar use of Gephi to map *Dracula* ("DH Toe Dip: Character Networks in Gephi," <http://chuckrybak.com/teaching/dh-toe-dip-character-networks-in-gephi/>). Like *Dracula*, *The Beetle* also makes use of multiple character narrators. However, unlike Weingart's assignment, which considers characters as well as the medium through which they communicate, this activity only focuses on communication between characters. As this will be my first time incorporating data visualization network analysis into my pedagogy, I wanted the process to be as simple as possible. For the same reason, there is no assessment except for participation and completion. The activity requires two class periods: one day in a computer lab to create the visualizations, and another for discussion. (N.B., for students to navigate Gephi effectively, they will need a desktop computer with a mouse.) Ultimately, by remediating communication in this novel into a data visualization, I hope to foster students' awareness of structural, relational, and (possibly) ideological dynamics by foregrounding networked connections. Also, because neither the students nor I will have any idea of what these visualizations will look like or reveal, I hope this activity will foster a collaborative sense of experimentation as we explore new ways of approaching and analyzing fictional narratives.

Supporting materials:

In-class activity directions and in-class discussion prompts

Communication Networks in Richard Marsh's *The Beetle* (Day 1)

Assigned Texts (to be completed prior to class):

- ❖ **Read** Scott B. Weingart, “Demystifying Networks, Parts I & II,” *Journal of Digital Humanities* 1:1 (2011), <http://journalofdigitalhumanities.org/1-1/demystifying-networks-by-scott-weingart/>
- ❖ **Watch** Jesse Fagan, “Gephi: Making Your Relational Data Very Pretty,” <https://www.youtube.com/watch?v=2FqM4gKeNO4&t=1206s>

In-class Activity:

A central narrative concern in Richard Marsh's *The Beetle* is the transmission of information. Marsh foregrounds communication by using four different character narrators, whose different perspectives, when pieced together, finally demystify the Beetle's agenda and motivations. In order to examine how these separate narratives compare with one another—and exactly how they fit together—we will be building communication network data visualizations using Gephi, the open-source network analysis tool which you learned about in Fagan's tutorial.

You will be creating a network of all characters who communicate with one another in your section. Because communication (including speaking, writing a letter, sending a telegram, etc...) is a symmetric relationship (i.e., the communication between x and y is the same as the connection between y and x), your final network will be undirected. With your team, you will create an Excel spreadsheet file in which all nodes will be character names, and all edges will stand for “communicates with.” For our purposes, any direct, completed transfer of information, whether written or oral, counts as “communication.” After you have completed your file, you will import it into Gephi, clean up your network, and export it as a PDF.

Character Narrators for Groups

Group 1: Robert Holt

Group 2: Sydney Atherton, Esquire

Group 3: Miss Marjorie Lindon

Group 4: Detective Augustus Champnell

Directions:

Step 1: Create your Data

Divide your section by page numbers among all members (roughly 10 pages per member) and have each person jot down every character and with whom that character communicates. Use **only the last name to refer to the character**. Your list will look something like this:

Character	Communicates with
Holt	Atherton
Holt	Champnell
Holt	Grizzled pauper
Lindon	Atherton

FYI: Because your character narrator is reporting from his/her perspective, he/she will naturally be the most connected node. Technically, this is an “ego-network,” which Weingart defines as a “network of one person.”

Step 2: after you have all completed your list, create an Excel spreadsheet in which you enter the data from each member of the group (don’t worry about labeling the columns). Save the spreadsheet as an Excel file with the name of your narrator (e.g., “Holt.xlsx”) and upload to our class page on Canvas.

Step 3: download Gephi: <https://gephi.org/> and import your excel file.

Step 4: clean up your network using Gephi. Feel free to refer back to Fagan’s tutorial. You can use whatever colors and node aspects you like, but make sure that all connections between nodes are **visible and clearly labeled**.

Step 5: export and your network as a PDF, and upload it to our class page on Canvas labeled with the name of your narrator (e.g., “Holt.pdf”).

That’s all for now! Next class, we will take a look at each of your networks and discuss what they reveal singularly and in comparison with each other. I will also show you the **full character communication network** that I will create using your combined data sets which we will also discuss in relation to the individual ego-networks.

Communication Networks in Richard Marsh's *The Beetle* (Day 2)

Small-Group Discussion (Part 1):

Return to your group and together study your character communication network in relation to the others. Discuss what these visualizations reveal about your character (15 minutes). Some things to consider:

- Is your character more or less connected than the other character narrators? Find out by calculating the *degree* of each character narrator in each network (remember, degree is the number of edges to which a node is connected).
- What other network does your group's most resemble? Which does it least resemble? What might account for these similarities or differences?
- Do you think your character's sex, class, or occupation has any relationship to the shape of your character's network? If so, how so?
- Do you think the shape of your character network has anything to do with its location in the novel (first, second, third, or fourth)?
- Does the experience of seeing your character narrator through network visualizations change or alter your perspective of your character narrator in any way?

Toward the end of your discussion, decide on the 2 most interesting insights about your character narrator this activity has provoked. You will share these with the class.

Small-Group Discussion (Part 2):

Now, look at the communication network for the novel as a whole. With your group, discuss what the complete network reveals about communication in the story in comparison with the ego networks. Some things to think about:

- Does the complete network surprise you in any way? What is its most interesting feature?
- Find your character narrator on the complete network. In what ways does the representation of your character's connectivity differ from your ego network? Does seeing your character's position in the complete network change or shift your perspective on him/her in any way?
- If you removed your character narrator from the network, which other relationships would it effect? What might this reveal about the significance of your character in terms of the narrative's structure?
- Overall, do you feel that data visualization is a useful tool for examining a text? I.e., does it help you to ask different kinds of questions about the text that might not otherwise occur to you from just reading the novel?

At the end of 15 minutes, we will have an open discussion of these and other issues raised by all of the visualizations.