Increasing Open Inquiry, Viewpoint Diversity, and Constructive Disagreement on College and University Campuses

A Toolkit

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Introduction

This toolkit is a collection of two empirically validated interventions for use on college and university campuses that contribute to a climate of free expression on those campuses. These interventions evidently increase empathy and perspective-taking, intellectual humility, and open-minded cognition among the students who make up a campus community, individual-level changes that relate to an overall culture of free expression on campus. Including the instructions, recommendations, and stimulus materials for each of these interventions, this toolkit will help campus stakeholders implement these interventions on their own campuses.

Context

These interventions came out of a grant by Heterodox Academy (HxA), which funded research to identify interventions that evidently increase empathy and perspective-taking, increase intellectual humility, increase open-minded cognition, increase curiosity, and decrease self-censorship among college students. Each proposal to this grant identified an intervention that arguably has any one or combination of these effects and it proposed one or two studies that determine if said effect or combination of effects is empirically valid. These studies had to take place at U.S. colleges or universities, on samples of undergraduate students, and during the 2021–2022 academic year. HxA funded five of these research projects at $30,000 each. More details about this grant are available in this request for proposals.

This grant funded the last subseries of research projects in a three-project research series that HxA is undertaking to identify ways of improving campus expression climate.

1. The first project created a survey that measures campus expression climate, the Campus Expression Survey, which HxA has administered annually since 2019 to monitor campus expression climate among undergraduate students.

2. The second project identified individual student changes that theoretically relate to a climate of free expression on campus; selected measures of these individual characteristics; and then empirically validated the relationship between these individual characteristics, according to corresponding measures, and campus expression climate. These individual characteristics

and their corresponding measures are: (a) empathy and perspective-taking, according to the Empathic Concern and Perspective-Taking Subscales of the Interpersonal Reactivity Index (Davis 1980, 1983); (b) intellectual humility, according to the Intellectual Humility Scale (Leary et al. 2017); (c) open-minded cognition, according to the General Open-Minded Cognition Subscale of the Open-Minded Cognition Scale (Price et al. 2015); (d) curiosity, according to the Joyous Exploration, Deprivation Sensitivity, and Stress Tolerance Subscales of the Five-Dimensional Curiosity Scale Revised (Kashdan et al. 2020); and (e) self-censorship, according to the Willingness to Self-Censor Scale (Hayes et al. 2005).

3. This grant, which is the third project in this series, funded five research projects to identify interventions that decrease self-censorship and increase empathy and perspective-taking, intellectual humility, open-minded cognition, and curiosity, according to corresponding measures of these individual characteristics above.

Interventions that Evidenced Target Effects

Two of these five research projects found evidence that their corresponding interventions have at least one of the effects that this grant targets (i.e., increasing empathy and perspective-taking, increasing intellectual humility, increasing open-minded cognition, increasing curiosity, or decreasing self-censorship). One of these interventions asks participants to follow and unfollow certain Twitter accounts, which evidently increases perspective-taking and political open-minded cognition. Another one of these interventions involves making mental models of issues from multiple perspectives, which evidently prevents declines in empathy and perspective-taking, intellectual humility, and open-minded cognition that would have otherwise occurred throughout a semester. More details about these two interventions and their corresponding research projects are below, with corresponding appendices containing the instructions, stimulus materials, and other things necessary for professors and administrators to implement these interventions on their own campuses.

Can Changing One's Online Social Network Increase Open-Minded Cognition?

Authors

- **Jay Van Bavel**, Associate Professor of Psychology and Neural Science at New York University
- **Steve Rathje**, Ph.D. Candidate at University of Cambridge and Postdoctoral Researcher at New York University

Outcomes

- Empathy
- Perspective-taking*
- Intellectual humility
- (Political) open-minded cognition*†

Intervention Description

This intervention is a social media strategy in which Twitter users follow certain Twitter accounts and unfollow certain other ones. Participants in this intervention follow any of 18 specific Twitter accounts that they are not already following (many of these accounts are related to science, nature, and space) and unfollow any of 60 specific Twitter accounts that they are currently following (many of these accounts belong to partisan politicians or politically slanted news sources). Lists of Twitter accounts that students are to follow and unfollow as part of this intervention are in Appendix A.

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* Outcomes with asterisks are ones on which this study found effects whereas outcomes without asterisks are ones on which this study tested and found null effects.

† These results on political open-minded cognition are noteworthy, even though this grant targeted general open-minded cognition, because these two versions of open-minded cognition are quite alike: The subscales measuring them are identical, except that items in the Political Open-Minded Cognition Subscale contain "political" as a qualifier while items in the General Open-Minded Cognition Subscale do not contain qualifiers (e.g., "I have no patience for political arguments ..." vs. "I have no patience for arguments ...").

Intervention Application

This intervention applies to any academic context relevant to social media or issues related to the Twitter accounts that it asks students to follow and unfollow. Its social media component makes it applicable to courses on psychology, communications, and media studies. As this intervention asks its participants to follow and unfollow Twitter accounts about politics, science, nature, space, as well as several other topics, it is also applicable to course content related to these topics. Part of this research used a web application (https://newsfeedback.shinyapps.io/HaveISharedFakeNews) that gives feedback on the political slant as well as the amount of fake or hyperpartisan news that a Twitter account has shared; using this application can be a fun and informative exercise in classroom and nonclassroom academic settings, with recommendations to follow and unfollow certain Twitter accounts to come afterward.

Project Description

This research project includes two studies that identified Twitter accounts that might increase empathy, perspective-taking, intellectual humility, and political open-minded cognition among their followers as well as Twitter accounts that might decrease these things among their followers. Study 1 was an exploratory study that identified Twitter "influencers" who might possibly have these effects, based on theory and on the correlations between following these Twitter accounts and personality characteristics among Twitter users in this study; it identified 18 Twitter accounts that might be related to high empathy, perspective-taking, intellectual humility, and political open-minded cognition as well as 60 Twitter accounts that might be related to low levels of these individual characteristics. Study 2 then assigned some of its participating Twitter users to follow and unfollow Twitter accounts per above, following any of those 18 Twitter accounts that they were not already following and unfollowing any of those 60 Twitter accounts that they were already following, and it assigned some of these Twitter users to unfollow eight Twitter accounts that Study 1 found to be unrelated to this project's target characteristics. Before and 1 month into making their assigned changes, participating Twitter users completed the measures of empathy and perspective-taking, intellectual humility, and political open-minded cognition that HxA chose for this grant. Comparing post-intervention responses on these measures between the two groups of Twitter users in this study, while controlling for corresponding scores beforehand, found that Twitter users who followed and unfollowed Twitter accounts per this intervention reported higher perspective-taking (but not empathy) and higher political open-minded cognition. These results evidence that following and unfollowing these specific Twitter accounts increases perspective-taking and political open-minded cognition.

Promoting Viewpoint Diversity and Perspective-Taking Through Fuzzy Cognitive Mapping

Authors

- **Cynthia Frantz**, Professor of Psychology and Environmental Studies at Oberlin College
- **Paul Brehm,** Assistant Professor of Economics and Environmental Studies at Oberlin College
- **Steven Gray**, Associate Professor of Community Sustainability at Michigan State University
- **Johanna Jauernig**, Research Associate at Leibniz Institute of Agricultural Development in Transition Economies
- **Rebecca Jordan**, Professor and Chair of Community Sustainability at Michigan State University
- **Evan Kresch**, Assistant Professor of Economics at Oberlin College
- **John Petersen**, Paul Sears Distinguished Professor of Environmental Studies and Biology at Oberlin College
- **Rumi Shammin**, Professor of Environmental Studies at Oberlin College

Outcomes

- Empathy and perspective-taking*
- Intellectual humility*
- Open-minded cognition*

Intervention Description

This intervention involves using Mental Modeler, a fuzzy cognitive mapping software that students can use to make cognitive models of complex issues from conflicting viewpoints. Students in this intervention complete three assignments, each of which involves reading two conflicting arguments on an issue and using Mental Modeler to create cognitive models of these conflicting positions.

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* Outcomes with asterisks are ones on which this study found effects whereas outcomes without asterisks are ones on which this study tested and found null effects.

The assignments in this research were about genetically modified foods, price gouging, and social media, but these assignments are adaptable for any issue. Specific instructions for using Mental Modeler and for these assignments are in Appendix B.

Intervention Application

This intervention is applicable to academic contexts where visualizing complex relationships among multiple parts of an idea is relevant and helpful, like a cognitive psychology course and lessons involving debates or understanding complicated issues. Courses that can naturally incorporate issues of genetically modified foods, price gouging, and social media can use the assignments in Appendix B as they are; other courses can adapt these assignments to the topics that suit their lesson plans.

Project Description

This research project includes one study in which students of several introductory courses did the Mental Modeler assignments in Appendix B as part of their coursework. This study assigned some of its participating classes to incorporate these Mental Modeler assignments into their coursework and some of them to proceed with their regular course content without Mental Modeler activities. In courses that included these assignments, students did each of them as a homework assignment and turned in their resulting files at certain times throughout their semester. Students in every participating class completed the measures of empathy and perspective-taking, intellectual humility, and open-minded cognition that HxA chose for this grant at both the start and end of their respective courses. Comparing these responses over time (start vs. end of course) and between conditions (Mental Modeler vs. non-Mental Modeler classes), while controlling for several demographic variables, found the same results for these measures: They did not change among students in classes that included Mental Modeler assignments and declined among students in classes that did not include them, such that end-of-semester scores were higher among these Mental Modeler courses than among these non-Mental Modeler courses. These results evidence that doing these Mental Modeler assignments as part of coursework prevents declines in empathy and perspective-taking, intellectual humility, and open-minded cognition that would have otherwise happened during a semester.

Interventions that Did Not Evidence Target Effects

Three of these five research projects did not find evidence that their corresponding interventions have effects that this grant targets (i.e., increasing empathy and perspective-taking, increasing intellectual humility, increasing open-minded cognition, increasing curiosity, or decreasing self-censorship). These interventions include: (a) withholding interesting information about another person to induce social curiosity, with aims of increasing empathy and perspective-taking; (b) constructing narratives about other people's behaviors, with aims of increasing empathy and perspective-taking; and (c) conveying norms that students have diverse opinions about the issues at hand, with aims of decreasing self-censorship. Despite good theoretical arguments and some previous empirical evidence that these interventions might have their respective target effects, they did not evidence such effects per the specific definitions of empathy and perspective-taking, intellectual humility, open-minded cognition, curiosity, and self-censorship that HxA chose for this grant. Note that some of these interventions did evidence effects on other indices of these individual characteristics, however.

Curiosity Kills Closed Minds: Cultivating Curiosity to Increase Empathy in College Students

Authors

- **Sara Konrath**, Associate Professor of Philanthropic Studies at Indiana University-Purdue University Indianapolis (Lilly Family School of Philanthropy)
- **Alison Jane Martingano**, Postdoctoral Researcher at National Institutes for Health
- **Victoria Lagrange**, Ph.D. Candidate at Indiana University
- **Jasmine Litton**, undergraduate student at Indiana University

Project Description

This research project includes two studies that each examined an intervention that withholds interesting information about someone to induce social curiosity, with aims of increasing empathy and perspective-taking. Study 1 examined an intervention in which people watch a video that depicts an unusual social interaction without an ending. Students who watched this video, compared with students who watched the full version of it, did not report different levels of curiosity or empathy and perspective-taking. Study 2 examined an intervention in which pairs of students, who do not know each other, share two truths and one lie about themselves with each other and then converse about these personal facts without knowing which pieces of information about their respective partners are true and which one of them is false. Students who did this icebreaker task virtually, compared with students who did a virtual control version of it in which they shared three true facts about themselves, did not report different levels of curiosity or empathy and perspective-taking. Although neither study found effects on the index of curiosity HxA chose for this grant, which is a personality characteristic, they both found their respective interventions to increase feelings of curiosity at that specific moment. These results provide no evidence that watching a social narrative without an ending or that this “two truths and a lie” task changes students’ overall curiosity or empathy and perspective-taking.

Harnessing the Power of Narrative to Improve Perspective-Taking and Empathy

Authors

- **Kristi Costabile**, Associate Professor of Psychology at Iowa State University
- **Stephanie Madon**, Professor of Psychology at Iowa State University

Project Description

This research project includes two studies that examined an intervention in which students create narratives of other people's behavior, with aims of increasing empathy and perspective-taking. This intervention involves receiving brief instructions on how to construct such narratives by thinking about the context and motivation behind other people's behaviors, and then constructing narratives of the things they see people do every day for 10 days. After these 10 days, students who did this activity did not report different levels of empathy and perspective-taking compared with beforehand and compared with students who did a control version of this task in which they described behaviors instead of narrating them; there was also no difference in the pre-post patterns of empathy and perspective-taking between these two groups of students. These results provide no evidence that creating narratives of other people's behavior increases their empathy and perspective-taking.

Self-Censorship of Political Opinion on College Campuses: Testing an Intervention to Change Campus Norms

Authors

- **Laurie O'Brien**, Associate Professor of Psychology at Tulane University
- **Danica Kulibert**, Ph.D. Candidate at Tulane University

Project Description

This research project includes one study that examined a norms-based intervention that aims to reduce self-censorship. Under the guise of being a statistics exercise, students in this intervention create histograms from data that represent student opinions on several political issues (i.e., immigration, health care, and education and defense spending) and then read quotes describing student opinions on each of these issues that emphasize the diversity of these opinions; this intervention communicates the campus norm that students accept diverse political opinions. Students who did this intervention, compared with students who did a control version of it that was about nonpolitical issues (i.e., healthy eating and exercise), did not report different levels of campus norms (i.e., the extent to which people on their campus tolerate different political beliefs) nor different levels of self-censorship. These results provide no evidence that this intervention changes campus norms, as it was supposed to do, which may be why it did not evidently decrease self-censorship in this study.

Summary and Conclusions

This toolkit describes five research projects that HxA funded to identify interventions that might increase empathy and perspective-taking, increase intellectual humility, increase open-minded cognition, increase curiosity, and decrease self-censorship. These changes in individual student characteristics are theoretically and empirically related to an overall climate of free expression on campus, according to previous work in this research series that HxA conducted. Having interventions that make these changes to the students that compose a campus may therefore ultimately contribute to that campus having an overall climate wherein people can express their viewpoints freely and learn from other people's opinions.

These research projects identified two interventions that evidently increase empathy and perspective-taking, intellectual humility, and open-minded cognition. One of these interventions involves changing the Twitter accounts that students follow, which evidenced increases in their perspective-taking and political open-minded cognition, while another one is a series of three course assignments wherein students build cognitive models of issues from multiple perspectives,

which evidenced prevention of declines in empathy and perspective-taking, intellectual humility, and open-minded cognition that students would have otherwise incurred. Some of this research also examined an intervention that arguably increases curiosity as well as empathy and perspective-taking and one that arguably decreases self-censorship, but this research did not find evidence that those interventions had these respective effects.

These two interventions have different practical and empirical advantages over each other that are noteworthy. Instead of comparing the strength of their corresponding effects, which may not be comparable because of different time lags between the studies that examined them, empirical comparisons between them should focus on the breadth of their effects: The intervention using Mental Modeler evidenced effects on empathy and intellectual humility, unlike the one using Twitter. Regarding accessibility, the Mental Modeler intervention is available to everyone whereas the Twitter intervention is available to those who are on Twitter or who want to sign up for Twitter. Regarding compliance, the Mental Modeler intervention also has the advantage of being course assignments that students are obligated to do whereas the Twitter intervention may require additional incentives to increase compliance. Despite these comparative advantages of the Mental Modeler intervention, the Twitter intervention has a large advantage in its ease of implementation and large reach: Whereas implementing the Mental Modeler intervention involves assigning and grading three course assignments for each participating student, implementing the Twitter intervention involves simply posting a set of instructions along with two lists of Twitter accounts that could reach many Twitter users at once and that those Twitter users could then retweet. So, the Mental Modeler intervention may have effects on more of these individual characteristics, inherently garners more compliance, and is very accessible, but the Twitter intervention is nearly effortless to implement and reaches many Twitter users at once; ultimately, choosing between these interventions may depend on which of them better suits the context in which one wants to implement it.

No matter which of these interventions one chooses, implementing either or both of them on a college or university campus would evidently have positive effects on participating students that relate to an overall climate of free expression on that campus. When such a culture exists in higher education, students and educators gain exposure to new and diverse viewpoints, consider new ways of thinking, ask questions, and learn from people different than themselves. Ultimately, it will help to broaden and deepen students' understanding of complex and important issues.

Appendix A

Instructions to Participants

We are interested in seeing whether certain ways of using Twitter change your experiences with Twitter. We will ask you to change minor aspects of your Twitter behavior by following and unfollowing certain Twitter accounts for one month. You must be a Twitter user to participate in this intervention.

Follow the Twitter accounts on this list:
https://twitter.com/i/lists/1527700772653346817

Click on the "members" button and then click "follow" on each account on this list that you are not already following. Once you have clicked on the "follow" button, it should say "following." For accounts on this list that you are already following, do not accidentally unfollow it.

Here is a video demonstrating how to follow all accounts in a list that you are not already following:
https://www.youtube.com/watch?v=oCEYyNIMMUw&feature=emb_logo

Unfollow the Twitter accounts on this list:
https://twitter.com/i/lists/1444489439120482308

Click on the "members" button and then click "unfollow" on each account on this list that you are following. Ensure you are already following an account before clicking "unfollow" so you do not accidentally follow any accounts that you were meant to unfollow.

Here is a video demonstrating how to unfollow all accounts in a list that you are currently following:
https://www.youtube.com/watch?v=rZfNLtvB3PA

Appendix B

Recommendations for Use

These assignments would be best if fully integrated into course content. Instead of presenting position statements, professors could assign relevant readings or videos presenting different perspectives on the issue at hand. Instructors could also devote class time to discussing the models. These assignments are adaptable for any controversial topic to suit different lesson plans.

Exploring GM Positions Using Mental Modeler

Genetically modified (GM) organisms have had their genetic material altered through genetic engineering (GE). Biotechnology companies develop most GM crops to resist direct herbicide application and damaging pest organisms. They manipulate other GM crops to resist drought or provide increased nutrient content. There are many perspectives regarding potential benefits and potential harms of GM crops.

This activity will provide two positions regarding GM crops and give you the opportunity to create conceptual models that describe different positions on this issue.

Instructions (please read carefully):

1. Read the section below on the GM debate.
2. Complete the assignment (on page 3).
3. Submit your assignment, ensuring that accompanying files are named correctly.

Different Positions on GM Crops

Position 1: I support GM use in crops.

"I support farmers using GM technology in agriculture because GM can allow plants to resist agricultural pests. This resistance provides more efficient herbicide use and can thereby increase food production efficiency and volume. Without GM, farmers applying traditional pesticide and herbicide treatments can hurt the environment because these traditional treatments wash off easily and enter the ecosystem, perhaps harming other natural plants. GM crops also produce more food, thus allowing the farmer to produce and sell more food. This benefits the farmer, the general population, the economy, and the environment. Today, many impoverished countries do not have enough food to eat and need increased food production to meet their needs. In addition to this, worldwide population growth demands equal growth in food production capabilities. Meanwhile, climate change continues to reduce the fertile regions that can produce food. If countries with GM crops can use their genetically engineered crops to feed the growing global population and alleviate

the burden climate change poses on impoverished countries' food production capabilities, then why wouldn't we support GM science and promote GM crops globally?

In addition to this new science of feeding more people by creating plants resistant to specific pesticides and herbicides (and thus increasing plant yield and overall food production quantities), it gives farmers the opportunity to stop using harmful chemicals. In short, they can spray less often (or stop altogether), and less pesticide use benefits the environment. The DDT crisis in the mid-20th century illustrates the importance of pesticide reduction. New pesticides like DDT seemed good then, but Rachel Carson and other activists revealed their horrific consequences within ecosystems. DDT decreased fertility rates and increased birth defect rates in many bird species. Pesticide use also enables farmers to reduce how much they till (or disrupt) the soil. This helps preserve the carbon in the soil, which keeps the soil healthy and in turn prevents the carbon from releasing into the atmosphere. Overtilling can lead to disasters like the Dust Bowl in the 1930s. This man-made disaster led to extreme food shortages nationwide — and during the Great Depression, no less. Furthermore, scientists can breed GM crops to have increased nutritional value. For example, if they developed a more nutritional rice grain, they could send it to areas with inadequate nutrition who rely on rice as a dietary staple. Malnutrition can lead to increased disease and mortality rates, and already exists as a worldwide issue, and with the population growing, we need more food to feed everyone. I don't know why we wouldn't use science to try to fix this problem. No scientific studies show that foods from GM crops harm human health, so why not continue to engineer crops that can produce more food and more nutrition?"

Position 2: I do not support GM use in crops.

"I do not support farmers using GM technology in agriculture because it poses serious risks and perpetuates unsustainable farming practices. It just adds more human-centered alteration and impact on the environment. Further, we are altering genetics, and those alterations may have unforeseeable consequences in the future. Instead, we should mimic natural plant/food production in our farming techniques. People overused pesticides like DDT in the mid-20th century and learned about their horrible environmental consequences only after the damage had been done. DDT destroyed pests, sure, but it also caused birds to have lower fertility rates and higher birth defect rates. Farmers should embrace sustainable farming methods and move away from GM crops. Sustainable farming methods like crop rotation, natural weed control, and natural pest

management can help us avoid tragedies like the Dust Bowl in the 1930s. Back then, farmers left the soil bare unless they were growing their crop. Over time they completely removed the grasses that kept the soil intact, and wind picked up the dry, loose soil and created huge dust storms that ravaged middle America. The dust storms ravaged America's 'breadbasket' and severely reduced our food production for years. With all this in mind, I just don't see why we would use risky science with unknown consequences when we can safely mimic nature in our farming practices.

I think we should avoid GM crops for a few more reasons. First, we haven't done much testing on their health impacts and don't really know how they affect us. GM crops also negatively affect the ecosystem's health, as GM crop production encourages single species planting, which subsequently reduces genetic diversity and biodiversity. We rely on genetic diversity to keep crops robust and biodiversity to maintain holistic ecosystem health. GM crops can also potentially breed with other species and spread their modified genes into natural plants. This can result in new plants that invade and outcompete the natural population. This resulting imbalance could disrupt natural genetic diversity and cripple the ecosystem's resilience. To that end, GM crops limit the natural mutation of genetically diverse plants, and we know that, in the long run, greater genetic diversity leads to greater disease and pest resistance. GM crops also have economic implications. Huge biotech companies own GM crops as their intellectual property, and these biotech companies then bind farmers to only use GM crops and restrict them from using any other seeds. If all farmers use one company's GM crops, then that one company controls genetic diversity in food production and effectively has a monopoly. Furthermore, widespread GM adoption disadvantages small farms or developing countries because less wealthy agricultural operations cannot access or afford advanced biotechnology. GM crops could help us expand food production and increase our crop yield, but could also cause unforeseen health consequences in both ecosystems and humans. Is it worth using GM crops with this risk in mind? Why not find natural ways to feed people?"

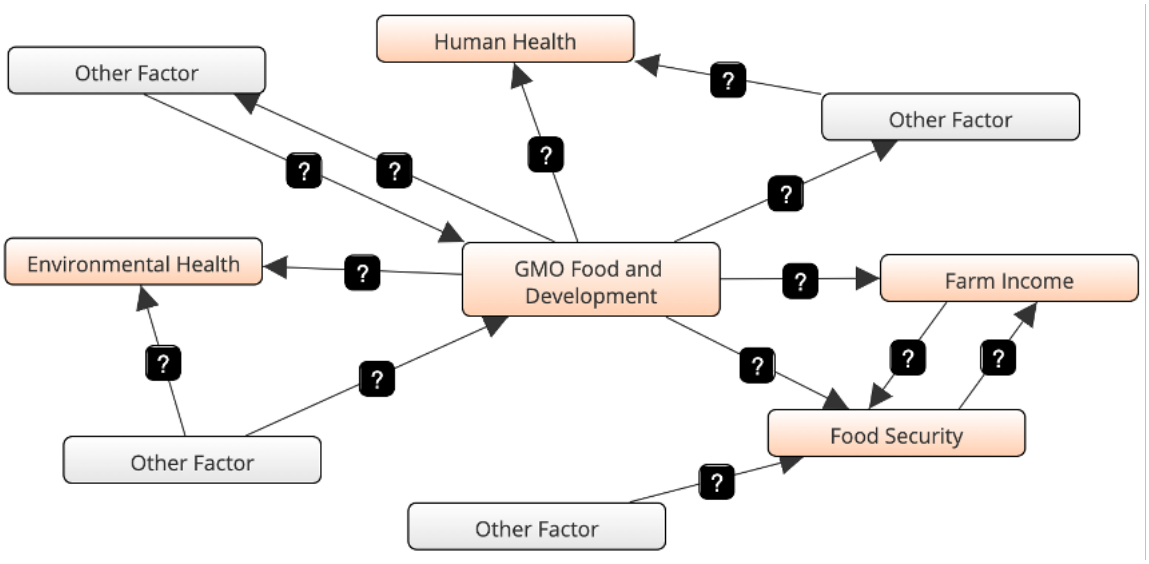
Mental Modeler GMO Debate

1. Student name

2. Introduction to Mental Modeler: This video provides an overview of how to develop fuzzy cognitive maps using Mental Modeler, describing the different parts of this software and demonstrating how to use it to make a simple model. See additional resources on how to save and send Mental Modeler files.

3. Make TWO mental models using Mental Modeler that reflect Position 1 (Model 1) and Position 2 (Model 2). Go to www.mentalmodeler.org, scroll to the pink link "Use the online Mental Modeler suite …," and enter the username "mentalmodeler" and password "mentalmodeler." Save Model 1 as yourlastname.progmo.mmp and Model 2 as yourlastname.proorganic.mmp. Submit both mmp files with your assignment.

Each of your two models should include the 5 concepts of GMO food and development, human health, farm income, environmental health, and food security (people's ability to afford and access nutritional food), along with up to 10 optional concepts. We encourage you to brainstorm as many concepts as you can to represent your understanding of each perspective and then narrow them down to those you deem most important (10 or fewer optional concepts per model). While constructing these two mental models, think about how the concepts and relationships among concepts might be the same or different between them. Remember that these models represent your understanding of these perspectives and that there are no right or wrong answers.



Orange boxes represent mandatory concepts, which should be in both models, and gray boxes represent optional concepts. Notice there are "?" on the influential links, which you should change to "+" or "-" to depict positive or negative relationships, respectively.

4. Write one short paragraph summarizing each model (no more than 1 page for both models). In your summary, discuss how you chose the optional concepts in your models, the main drivers of these positions around GM food (socially and environmentally), and what these models tell us about the dynamics of using GM crops as they relate to socio-ecological processes. Also include screenshots of corresponding models in your model summaries.

5. Submit your assignment, including your Mental Modeler (mmp) files and model summaries. Remember to name Model 1 yourlastname.progmo.mmp and Model 2 yourlastname.proorganic.mmp. Submit your model summaries as a MS Word or PDF file.

Mental Modeler FAQs

Question 1: My Mental Modeler (mmp) file downloaded, but I can't find this file to save it to my desktop. How can I find it and save it within a folder or to my desktop?
Mental Modeler files are saved as mmp files. Click "Save," which will send it automatically to your Downloads folder. Rename these mmp files appropriately (see naming instructions above) and save it to your desktop or another folder. For help saving mmp files on a Mac, watch this short video.

Question 2: My Mental Modeler (mmp) file doesn't open when I click on it. What's going on?
Mental Modeler files do not automatically launch the Mental Modeler software (like it does with Windows or Adobe products). You must go back into the online Mental Modeler software website to access the modeling window and "Load" the model into your browser.

Question 3: How do I access Mental Modeler?
Go to www.mentalmodeler.org and enter the username "mentalmodeler" and password "mentalmodeler."

Question 4: How do I take a screenshot of the model to put into my Word document?
To take a screenshot of your model, either use a screen-capture software (e.g., Snagit or Snipping Tool) or simply click the camera icon located in the top right portion of the Modeling screen. On a Mac, holding "command shift 5" at the same time opens up screenshot options.

Question 5: What is the Scenario tab for?

For this assignment, you do not need to use the Scenario tab. If you are curious about how a change in your model impacts other components of this model, increase or decrease the components on the left of this screen to see if the model reacts like you think it would.

Question 6: The Mental Modeler software does not work on my browser? What gives?

Firefox and Safari are the best browsers for running Mental Modeler. If you experience browser issues while running Mental Modeler, try it in another browser.

Email mentalmodelerhelp@gmail.com if you need help with or have questions about Mental Modeler.

Exploring the Price-Gouging Debate Using Mental Modeler

Price gouging occurs when sellers increase prices during crises. They anticipate high demand for certain products or services (e.g., water, toilet paper, hand sanitizer, or private nurses) during this critical time, and exploit this high demand to increases prices.

This activity will provide two positions regarding price gouging and give you the opportunity to create conceptual models that describe different positions on this issue.

Instructions (please read carefully):

1. Read the section below on the price-gouging debate.
2. Complete the assignment (on page 3).
3. Submit your assignment, ensuring that accompanying files are named correctly.

Different Positions on Price Gouging

Position 1: In a pandemic-induced situation of scarcity, prices for necessary goods and services should not be restricted.

"I support the sellers' right to freely set their own prices, even during crises, because freely fluctuating prices improve both the access to and quantity of goods. Higher prices stop hoarding behavior, like when people buy goods 'just in case.' Plus, more suppliers will be attracted to the market if sellers retain their price-setting power, and more suppliers in the market mean supply increases. This will then increase competition among sellers, causing price wars and reducing prices. You can see how this chain reaction naturally produces both a supply increase and price reduction. I also believe that sellers will not set outlandish prices as they do not want to anger their customer base or incur the public's wrath. And if low-income people can't afford the new prices, the government can step in and temporarily provide cheap access to necessary goods and services. The sellers' price increases can also have positive effects, like using the increased revenue to offer their employees higher wages while the employees work extra hard during the crisis.

When authorities restrict price increases during a crisis, they end up allowing hoarding behavior wherein people purchase beyond what they can consume. Consider the toilet paper market in March 2020 (along with other goods like hand sanitizer, N95 masks, etc.). People's toilet paper needs hadn't changed and toilet paper production hadn't changed, yet store shelves were empty. Many individuals who didn't need toilet paper purchased it 'just in case,' preventing access for individuals who had actually run out. Higher prices would have reduced hoarding and made it so that individuals who actually needed it could still buy it.

Seemingly 'bad behavior' during a crisis, like the sellers trying to increase their profits through price gouging, ultimately benefits consumers. Case in point, this very profit increase ends up attracting more sellers to the market, with the additional sellers serving two functions. First, they produce additional goods, increasing the available supply for everyone. Second, the new sellers and additional goods spur price wars and reductions. Continuing with another March 2020 example, high hand sanitizer prices attracted liquor distilleries to begin producing sanitizer. The additional hand sanitizer supply created more competition, leading to price reductions and the lower prices we see today. So, even though sellers can set high prices initially, competition ensures that these increases are only temporary.

Egregious 'bad behavior' like absurdly high price setting will not occur. Sellers do not want to anger and alienate their customer base, so they'll set prices with continued profits in mind. Customers resent sellers exploiting their plight and will lash out against sellers setting exorbitant prices on necessities like water, sanitizer, etc. If a customer encounters an unfair price, they'll just take their business elsewhere.

Increased prices can also have uncontroversially positive effects. I think a business giving employees higher wages or paid time off is good, right? In a crisis, businesses that increase their prices can redistribute their increased revenue among their employees and better compensate their hard work. Increased prices can also apply to the price of labor. During COVID-19's first wave in spring 2020, many private practice nurses charged higher hourly prices to compensate for their long work hours. These higher wages then attracted more nurses to the labor market, resulting in more nurses and additional compensation for their risky and strenuous work.

This all happens without government intervention. While price gouging doesn't affect rich people's access to goods (because they're rich), through increased supply and decreased hoarding, it does ensure that the general population retains access to goods. Although all solutions during a shortage have undesirable aspects, allowing price increases will resolve the shortage in the quickest fashion. So, with all that said, I think we should allow price gouging, even in a crisis, as it deters hoarding, encourages supply increases, and effectively allocates goods."

Position 2: In a pandemic-induced situation of scarcity, prices should be restricted in order to prevent price gouging.

"I dislike price gouging and favor price restrictions that prevent it. I believe that price gouging unfairly harms low-income individuals and benefits sellers and high-income customers. It also erodes community solidarity during crises. Eliminating price gouging contributes to social cohesion, whereas its allowance contributes to social tension. Finally, price increases cause only small increases to the quantity of goods available. In reality, it takes time to produce additional goods, and price increases do not dissuade hoarders as they can just pay more.

Sellers can accrue unfair benefits when they engage in price gouging. When the COVID-19 pandemic began last year, individual market players made headlines as they bought up essential goods with the intent to redistribute them at higher prices. Just look at the New York Times article titled 'He Has 17,700 Bottles of Hand Sanitizer and Nowhere to Sell Them.' The article's subject bought every bottle of hand sanitizer (and Clorox wipes, etc.) he could find in large areas of Tennessee and Kentucky and then tried to profiteer. Before he was stopped, he was reselling hand sanitizer at ludicrous prices like $70 a bottle. Without Amazon's voluntary intervention, this price gouger would have reaped huge profits at others' expense during a crisis.

Price gouging disproportionately hurts low-income individuals. They have low purchasing power for essential goods during normal times, so when disaster strikes and their needs increase, price gouging exacerbates their situation. High prices can push them further into poverty and prevent access to necessities. Price gouging also hurts low-income customers beyond just unfair prices: Low-income customers may need to spend time finding the lowest prices when many stores in an area increase their prices, putting further strain on their lives and forcing them to commit valuable

time that they could otherwise spend responding to the disaster, earning income, or caring for their family. Meanwhile, those with high incomes can still afford to buy essential goods without wasting time searching for good deals. High-income individuals will also have more goods available to buy because those with low incomes will buy less. In short, price gouging hurts the most vulnerable and does not affect the privileged.

I also note that these price increases won't cause huge supply increases to magically appear. It takes time to build a factory, set up supply lines, and get a new business off the ground. So there's almost no gain in the short run. In the long run, the mere fact that you're basically guaranteed to sell your product (because the shelves are bare!) is enough to incentivize new firms to enter the market. While higher prices could cause small supply increases in the short run, the fact that you can't sell your hand sanitizer for $70 per bottle isn't what stops people from entering the market.

Overall, price gouging contributes to a general 'survival of the fittest' feeling that erodes society's cohesion. It hurts low-income individuals and leaves high-income individuals untouched, thus increasing inequality. In times of crisis, obvious inequality can cause social unrest and have lasting negative effects upon communities. If an individual cannot afford necessary goods such as face masks or sanitizer, they may understandably just take them. Laws preventing price gouging are essential because they help maintain peace during crises. Since prices stay the same, people's access to goods stays the same as it was pre-disaster (that is, all individuals lose access equally).

I also believe the government can arbitrate price levels during a crisis and act as a natural and effective alternative to the market. Governments should enforce precrisis price levels such that everyone retains their precrisis access to essential goods. Both high-income and low-income individuals endure scarcity the same. It's also easier for the government to enforce price controls over suppliers than for them to take on any additional responsibility as an active market player. Crises strain society, and price gouging just adds to that strain. Why would we want these effects to compound? We should prevent price gouging and let the government protect people."

Mental Modeler Price-Gouging Debate

1. Student name

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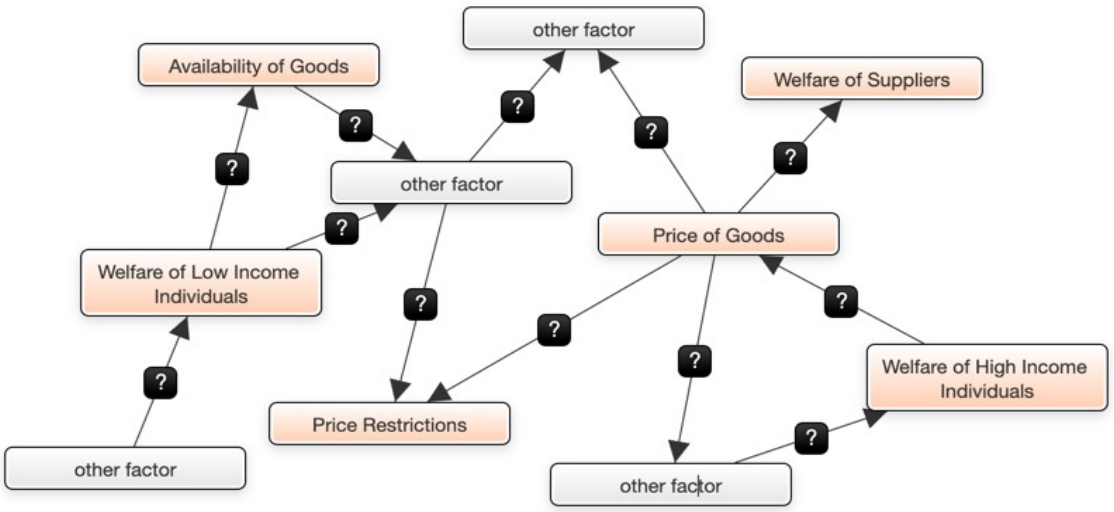
Each of your two models should include the 6 concepts of price restrictions, price of goods, availability of goods, welfare of suppliers, welfare of low-income individuals, and welfare of high-income individuals, along with up to 9 optional concepts. We encourage you to brainstorm as many concepts as you can to represent your understanding of each perspective and then narrow them down to those you deem most important (9 or fewer optional concepts per model). While constructing these two mental models, think about how the concepts and relationships among concepts might be the same or different between them. Remember that these models represent your understanding of these perspectives and that there are no right or wrong answers.



Orange boxes represent mandatory concepts, which should be in both models, and gray boxes represent optional concepts. Notice there are "?" on the influential links, which you should change to "+" or "-" to depict positive or negative relationships, respectively.

4. Write one short paragraph summarizing each model (no more than 1 page for both models). In your summary, discuss how you chose the optional concepts in your models, the main drivers of these positions around price gouging (socially and economically), and what these models tell us about the dynamics of price gouging as they relate to equity and efficiency. Also include screenshots of corresponding models in your model summaries.

5. Submit your assignment, including your Mental Modeler (mmp) files and model summaries. Remember to name Model 1 yourlastname.profluctuation.mmp and Model 2 yourlastname. prorestriction.mmp. Submit your model summaries as a MS Word or PDF file.

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Exploring Positions on Social Media Using Mental Modeler

Social media refers to websites or applications that allow users to interact socially. Unlike traditional media forms that only allow users to consume content, social media enables users to consume, create, and share content. Examples of social media include social networking sites (e.g., Instagram, Snapchat, Facebook, TikTok), text messaging and messaging apps, social gaming tools, and YouTube. There are many arguments for and against the potential benefits and potential harms of social media use for individuals who use it.

According to the Global Digital Report, 4.20 billion people actively use social media, amounting to more than 53% of the world population. The number of active social media users increased between 2020 to 2021 by 490 million, representing a 13% increase in social media users that year.

This activity will provide two positions on social media and give you an opportunity to create conceptual models that describe these different positions on this issue.

Instructions (please read carefully):

1. Read the section below on the social media debate.
2. Complete the assignment (on page 3).
3. Submit your assignment, ensuring that accompanying files are named correctly.

Different Positions on the Impacts of Social Media

Position 1: Social media benefits people psychologically, promotes connectedness with others, and increases access to information.

"I know that social media has its drawbacks, but by and large I feel it benefits people since it creates communities and connections and opens up new worlds of information. It opens up new connections of ideas among people who would never normally meet in real life — that would not otherwise be possible.

Research that I've read shows that social media strengthens relationships, facilitates communication, and helps establish new social relationships. Four out of five teens self-report that social media allows them to feel more connected to their friends and family, which I think is great. Adults can connect with long-lost friends from childhood. People can discover others who share their interests all over the world. The COVID-19 pandemic is a great example of social media's unique ability to connect people. When everyone had to lock down indoors, they took their socialization to social media. They stayed connected and safe, all thanks to social media.

Social media provides opportunities for youth who might feel isolated in their hometowns to meet in online communities. It functions as a platform for people to share their stories and find others with shared experiences. For example, LGBTQ teens who might feel like no one can relate to them in real life can find a community on the internet. People struggling with depression or other mental health issues can find support and resources online. The mere knowledge that they are not alone can help a person with mental health issues. Plus, support groups exist online that help people in ways that weren't possible before. In her book Twitter and Tear Gas, Zeynep Tufekci discusses the background of an acquaintance whom she calls 'Sana' (for the sake of privacy). Sana was raised in a family that maintained a 'fiercely apolitical stance.' She became frustrated over the lack of political discussion both at home and within her in-person social circle. Sana turned to social media, specifically Twitter, and discovered a community of politically oriented young people who shared her perspectives. In doing so, she was able to share political conversations with an inclusive community, and she felt empowered to participate in the 2011 Tahrir Square protests. I think that Sana's story exemplifies how social media can connect people with a positive community they otherwise wouldn't have in person.

Social media also connects content creators and small businesses with audiences for their causes, perspectives, and products. People can reach audiences they wouldn't have been able to before. This opens up opportunities for self-expression and e-commerce. Websites like gofundme.org allow people to crowdfund support for new projects or large or small crises. Through spaces like Instagram Shop or Facebook Marketplace, users can share their creative work and reach a wide audience. For example, I have a friend who does woodworking and sells his handmade products literally all over the world because people find him through Facebook Marketplace. His customers get something beautiful and he gets an income he would otherwise not have. Algorithms also make it easy to bring sellers and customers together — within the social media market, everyone benefits.

Social media actually gives people a way to exchange productive knowledge. Since social media exists around the world, users from all backgrounds can share their work, recipes, products, ideas, and so on. People can learn firsthand from experts they would never be able to learn from in person. For example, say your computer or phone is not working. You can find YouTube videos to help you diagnose the problem and show you exactly how to fix it. This is even more important in parts of the world where people can't easily access education, services, or help. Someone in a rural area whose tractor breaks down can watch a video on YouTube and learn how to fix it. Social media makes diverse information and content available, and thus empowers people to learn and try new things.

Overall, the positives far outweigh any negatives, so I don't see how someone can wholly dismiss social media as it is."

Position 2: Social media hurts people psychologically, erodes their connectedness with others, and exposes them to false information.

"While I understand that social media was created with positive intent to allow people who might not meet in real life to feel more connected to others and share information, I believe that over time it has turned into a place that foments psychological hurt, disconnectedness, and false information, which I find troubling. When I think about it on a large scale, I don't think it is good for people who use it. It has clear benefits, but overall I think the net gain is negative.

To start, I've read many academic papers that have documented its detrimental side effects on mental health. Because interacting with a screen reduces the opportunity for teens to read nonverbal cues and facial gestures, teens who use more social media tend to have less developed social skills in real-life relationships. Moreover, interacting with social media requires relatively less concentration and brain power than real life, so heavy social media use can result in shorter attention spans, which then inhibits learning and creativity. Social media also negatively affects mental health because of its addictive nature. Opaque algorithms intentionally present addictive content to users, as the platforms make more money when people spend more time on them. In fairness to the users, they get enjoyment out of the content, but this enjoyment can quickly lead to addiction and lead them to NOT do other things that bring more enjoyment. Academics have repeatedly shown that frequent social media users display signs of addiction — as of 2019, social media addiction affects around 12% of users.

Social media has also helped spread cyberbullying among youth and other age groups. Today, approximately 10% to 40% of internet users are cyberbullying victims. In social media, anyone can easily create anonymous profiles and say horrible things to and about someone, with no consequences. Yes, one can simply 'turn off the device' or 'not engage,' but once something gets posted and read, the psychological damage has been done. Furthermore, cyberbullied people experience greater symptoms of mental health disorders and more frequently commit self-harm. In short, the bully doesn't know the real harm they are causing because the human-to-human connection and social accountability that usually helps tamp down our mean instincts aren't there in cyber-interactions.

I understand that social media is meant to increase interpersonal connectivity, but studies have persistently found a correlation between self-reported loneliness and high social media usage. Granted, it is still unclear whether loneliness causes or results from social media usage. However, current research does prove that virtual friendships are less satisfying than face-to-face friendships, and past findings indicate that young people express increasing feelings of loneliness after virtual conversations. Social media also messes with interactions in real life. Take 'phubbing,' for example, which is when someone pays attention to their phone instead of the person who is with them. If someone starts scrolling Instagram instead of listening to their friend, they're phubbing (and also rude). An unused phone can disconnect people too. Studies have shown that a phone sitting on a table can make people feel distracted and decrease their sense of joy from socializing.

Finally, social media platforms allow nefarious individuals to disseminate false information and spread conspiracy theories, which can lead to echo chambers and entrenchment of thought. False information can be dangerous, even life-threatening! For example, some people posted on the internet last year that injecting yourself with bleach could treat COVID-19, and some people tried it. Users can have a difficult time discerning true information from false information, especially if the false information comes from a trusted source. Even worse are posts that discount experts who have a systematic way of knowing or making a claim — like scientists! When users have to sort out true information from false information, they may feel disillusioned and skeptical about ALL the sources presenting conflicting stories. They may then seek out fringe sources that explain why the mainstream seems so contradictory or misleading, and fall into a conspiratorial rabbit hole.

I feel that all these negatives far outweigh social media's positives, so I just don't see how someone can defend it in its current state."

Mental Modeler Social Media Debate

1. Student name

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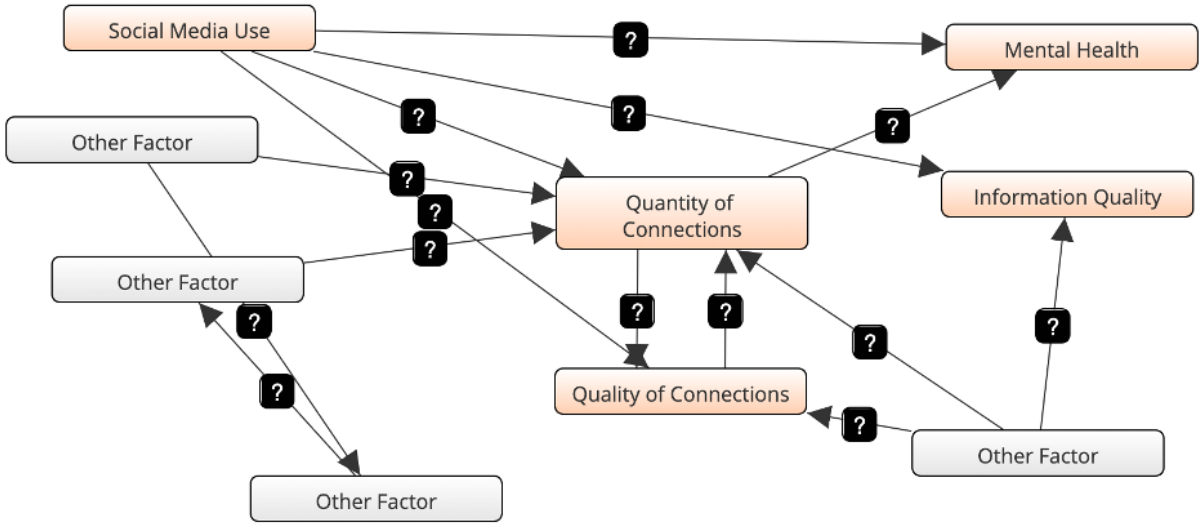
Each of your two models should include the 5 concepts of amount of social media use, mental health, quality of connections, quantity of connections, and information quality, along with up to 10 optional concepts. We encourage you to brainstorm as many concepts as you can to represent your understanding of each perspective and then narrow them down to those you deem most important (10 or fewer optional concepts per model). While constructing these two mental models, think about how the concepts and relationships among concepts might be the same or different between them. Remember that these models represent your understanding of these perspectives and that there are no right or wrong answers.



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About Heterodox Academy

Heterodox Academy (HxA) is a nonpartisan nonprofit that works to improve the quality of research and education by promoting open inquiry, viewpoint diversity, and constructive disagreement in institutions of higher learning. Our community is made up of more than 5,000 professors, educators, administrators, and students who come from a range of institutions — from large research universities to community colleges. They represent nearly every discipline and are distributed throughout 49 states and across the globe.

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- Rebecca Jordan, Professor and Chair of Community Sustainability at Michigan State University
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