



The water science communication problem

SADIE HUNDEMER
February 22, 2022



**SCHOOL OF FOREST,
FISHERIES, AND
GEOMATICS SCIENCES**



National Science Foundation

Grant Number: 2021590



United States Department of Agriculture
National Institute of Food and Agriculture

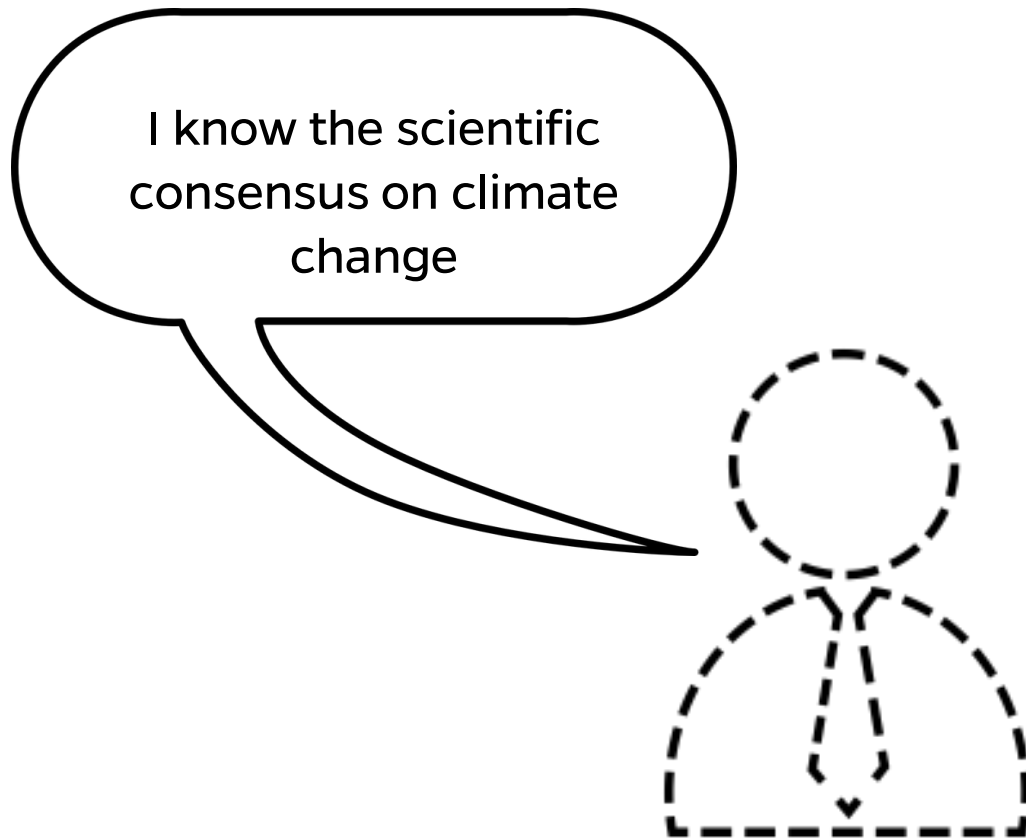
Award Number: 2017-68007-26319

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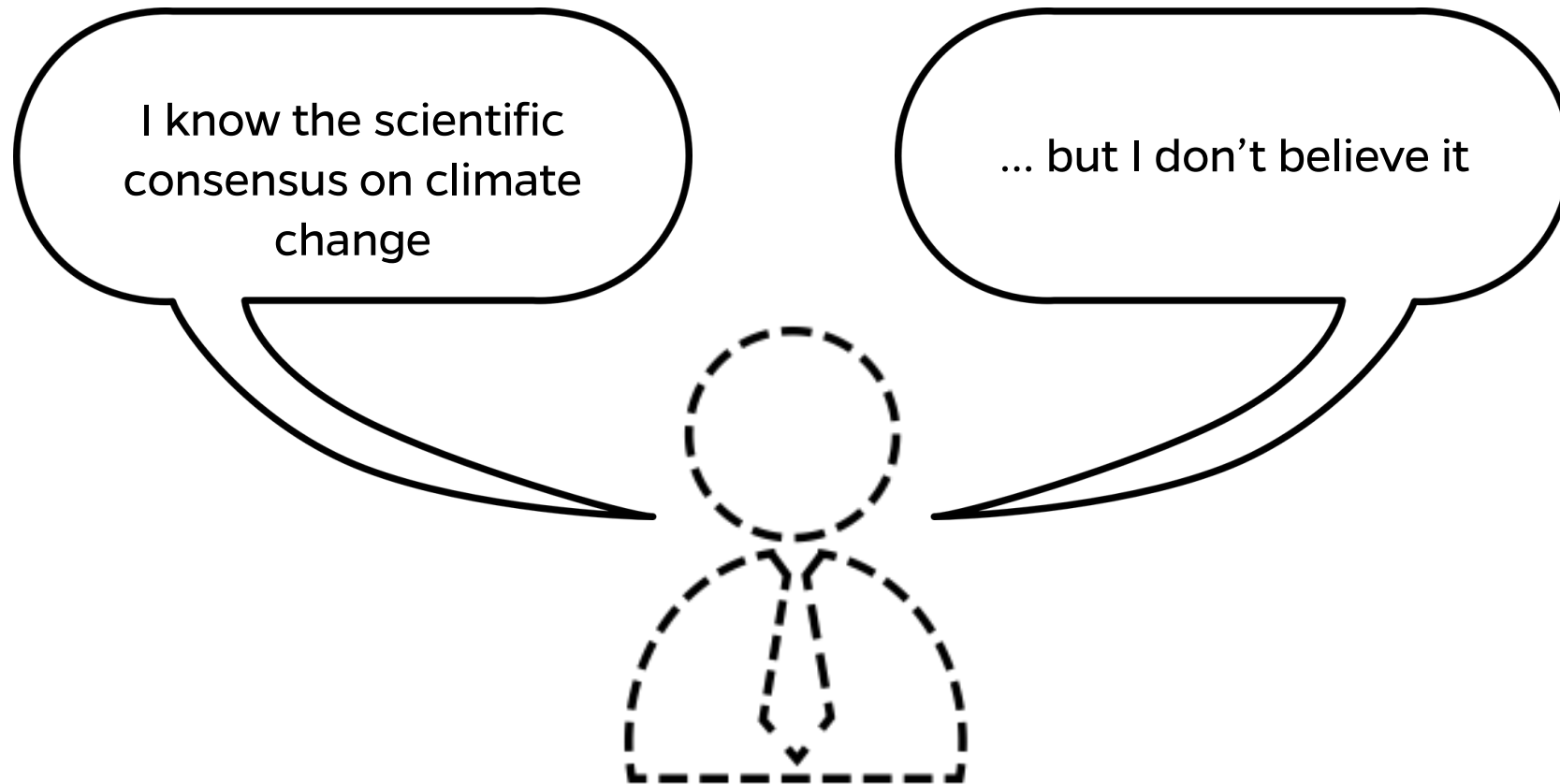
Science Communication Problem

“the failure of valid scientific evidence to quiet disputes over policy-relevant facts”

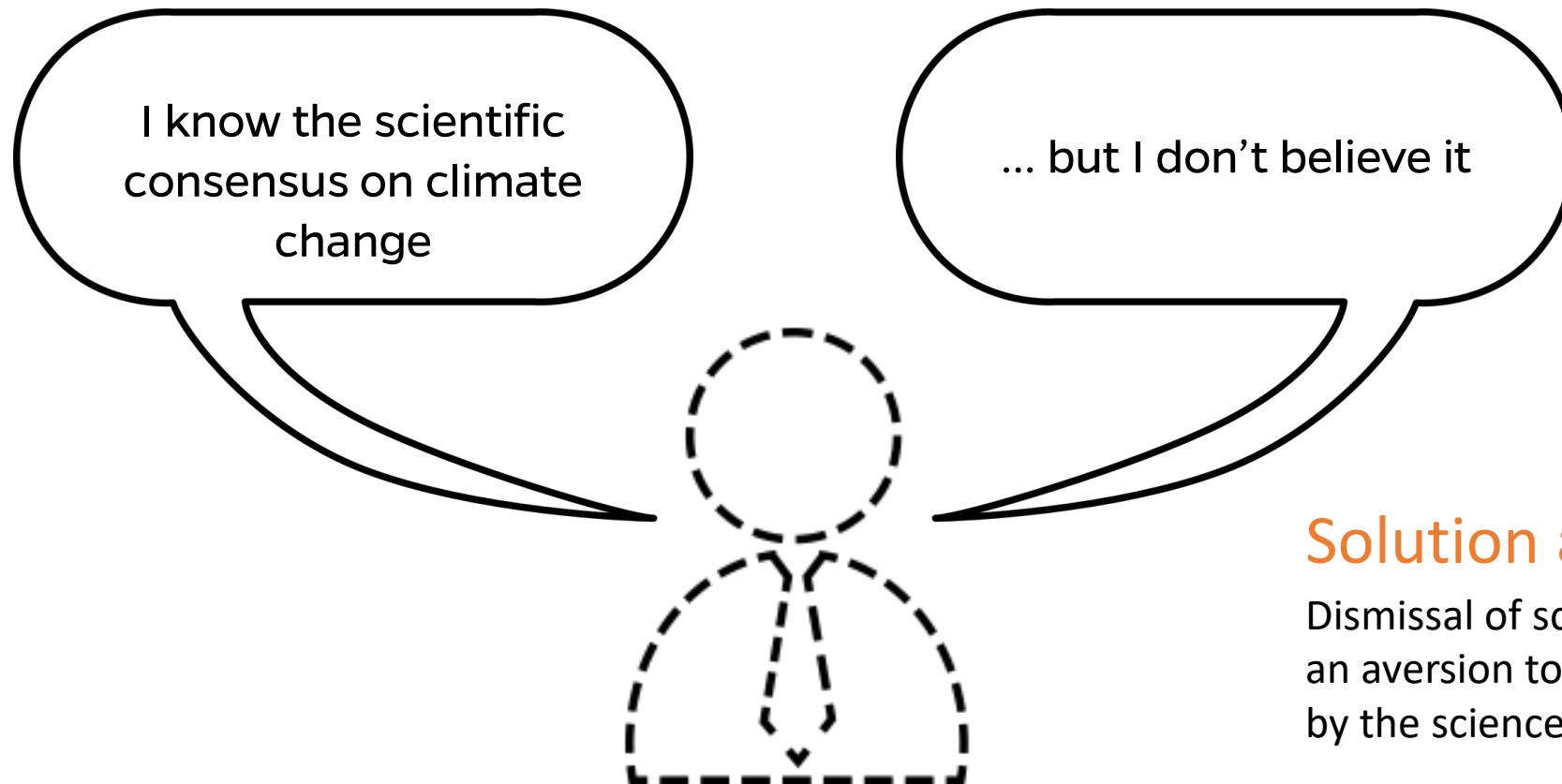
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Science Communication Problem

“the failure of valid scientific evidence to quiet disputes over policy-relevant facts”

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Can we proactively detect a
Water Science Communication Problem?

“the failure of valid scientific evidence to quiet disputes over policy-relevant facts”

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Knowledge

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Knowledge  Belief

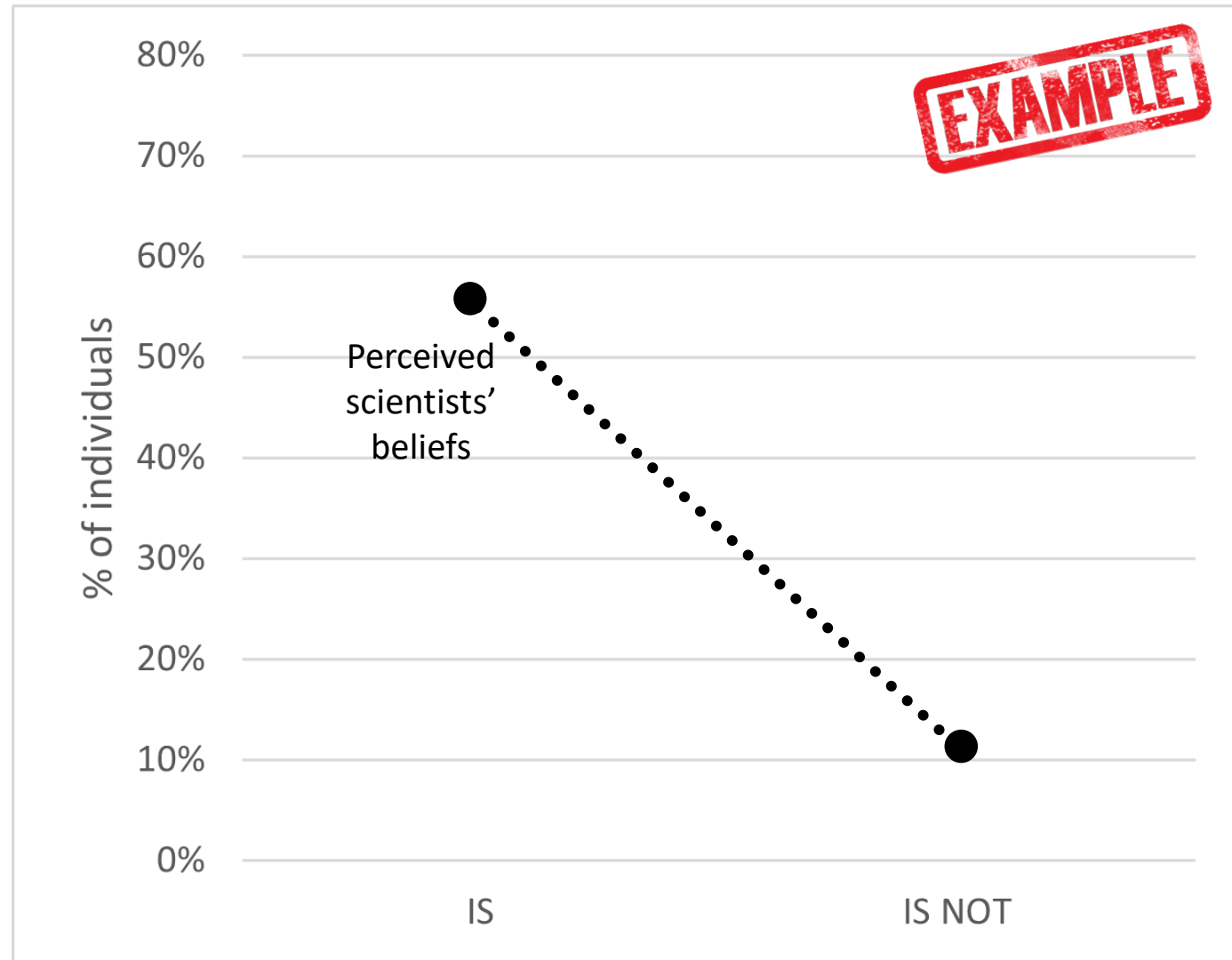
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Fertilizer [IS or IS NOT] a source of water pollution in my state.



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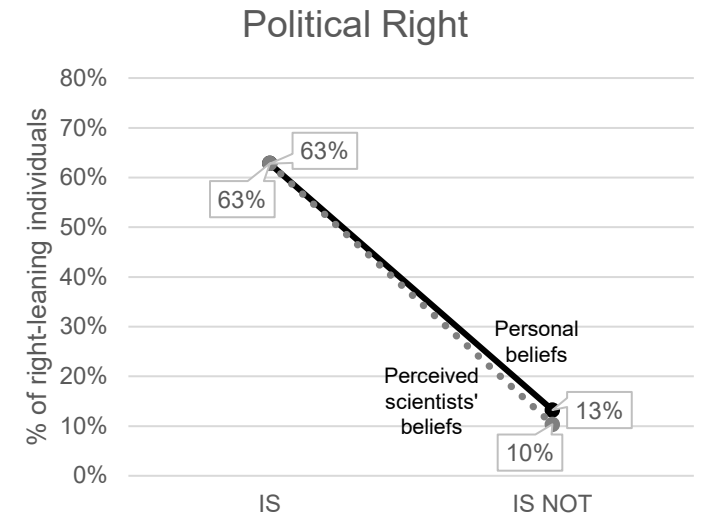
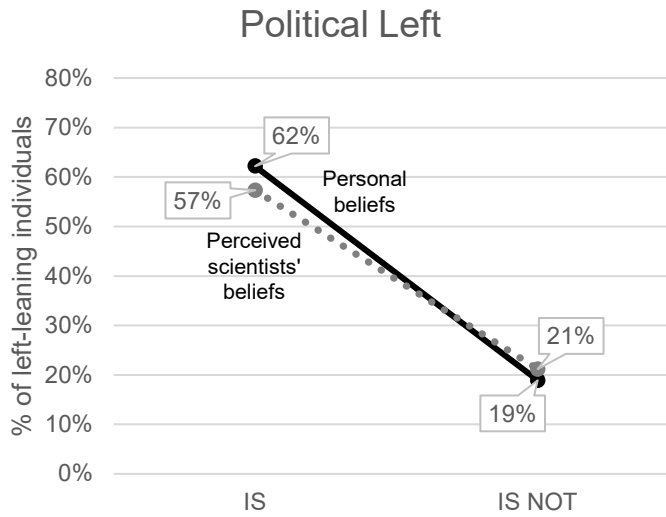
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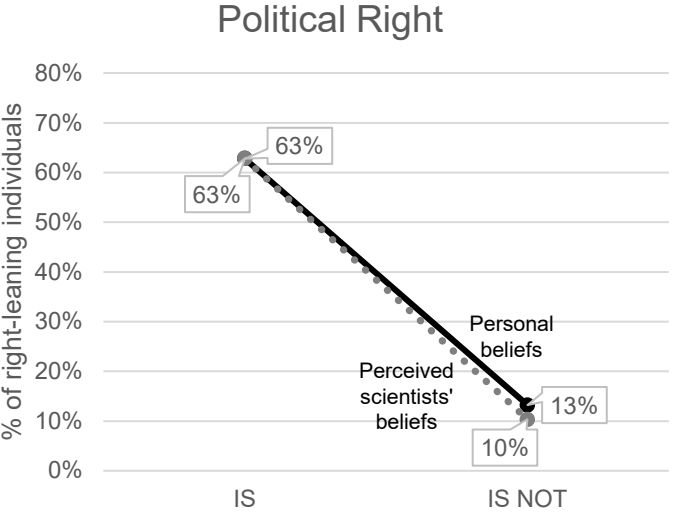
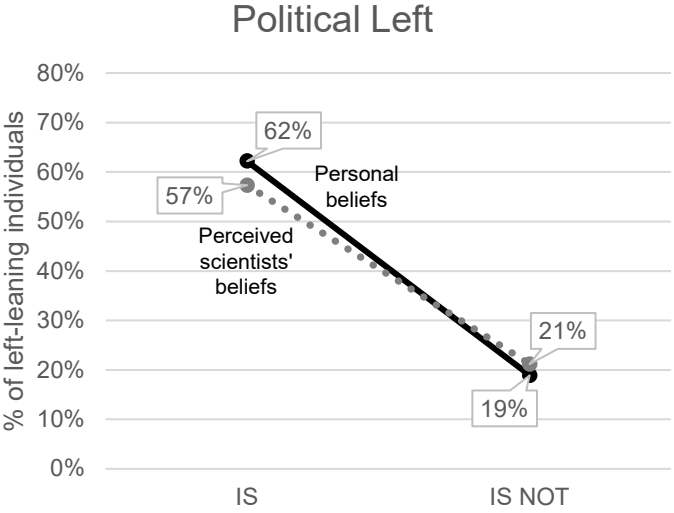
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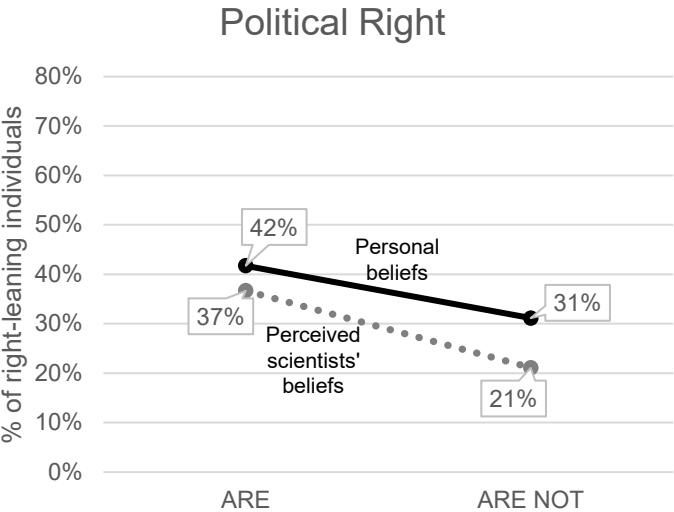
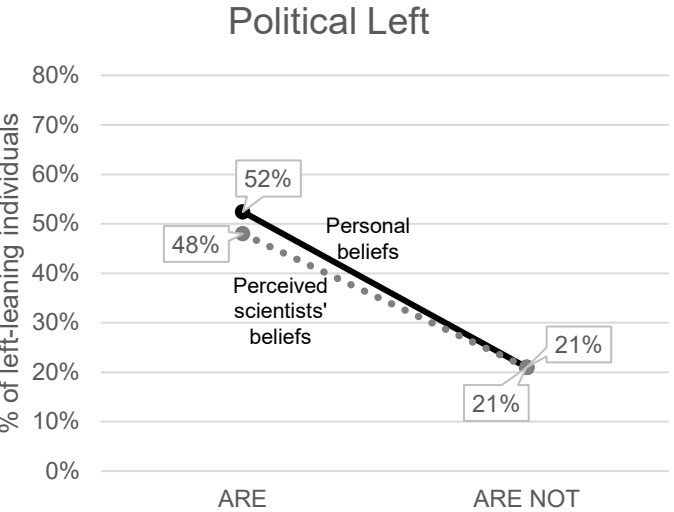


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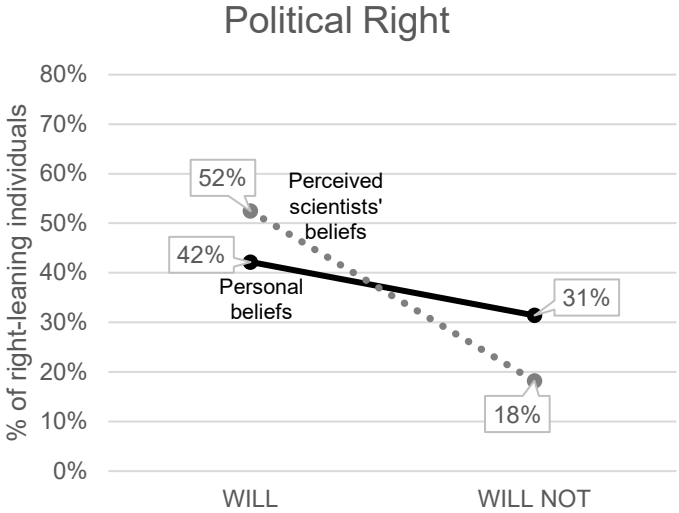
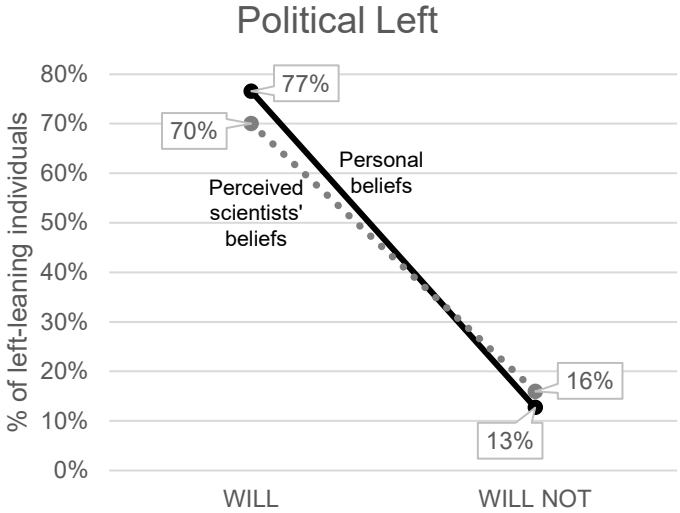


Septic systems [ARE or ARE NOT] a source of water pollution in my state.



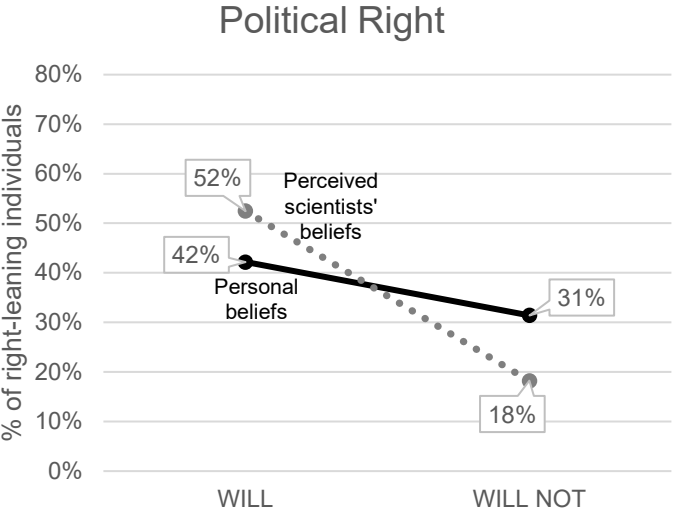
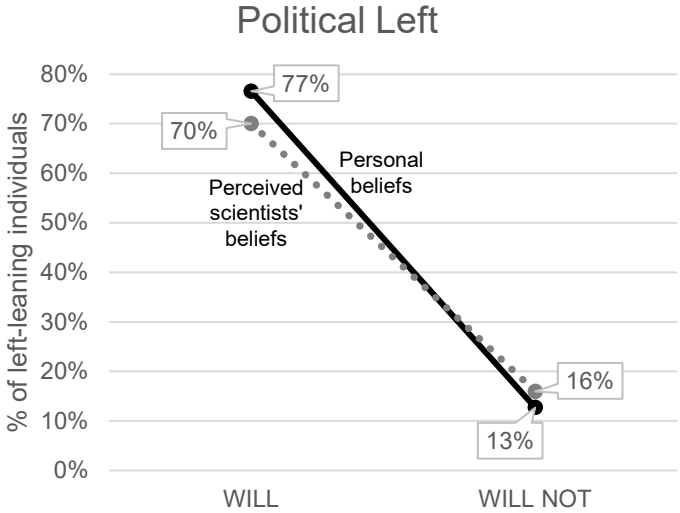
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Climate change [WILL or WILL NOT] impact the availability of water in my state.

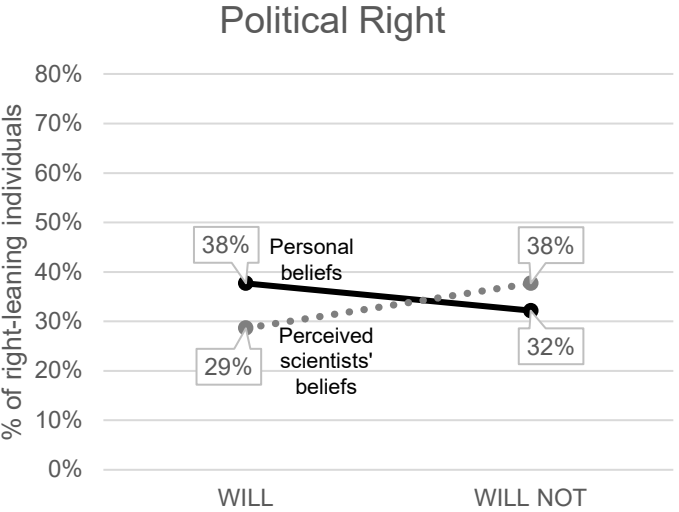
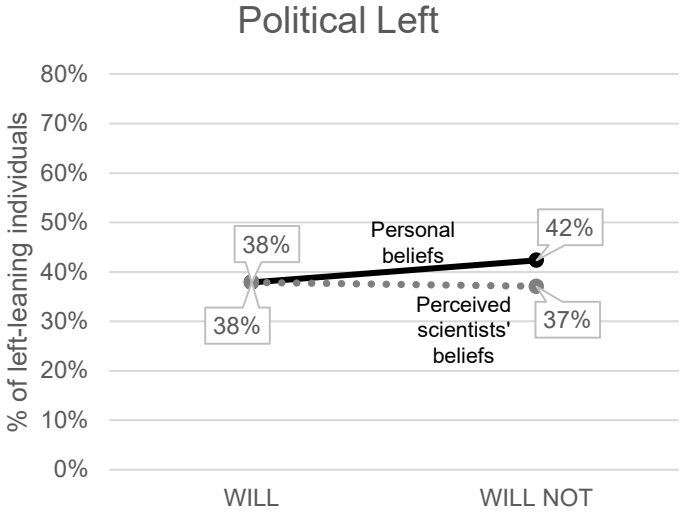


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Climate change [WILL or WILL NOT] impact the availability of water in my state.



In 20 years, there [WILL or WILL NOT] be enough surface and ground water to meet demand throughout my state.



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Belief assessment + Knowledge assessment
“Ordinary water science knowledge” (OWSK)

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Ordinary water science knowledge (OWSK)

Knowledge needed for an ordinary person to competently participate in water discussion and make citizen-level voting decisions on water topics

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Ordinary water science knowledge (OWSK)

Knowledge needed for an ordinary person to competently participate in water discussion and make citizen-level voting decisions on water topics

Q1: What is the primary source of drinking water in [North/Central Florida; South Georgia]?

- Underground water
- Rainfall collected in cisterns
- Surface water
- Ocean water with the salt removed

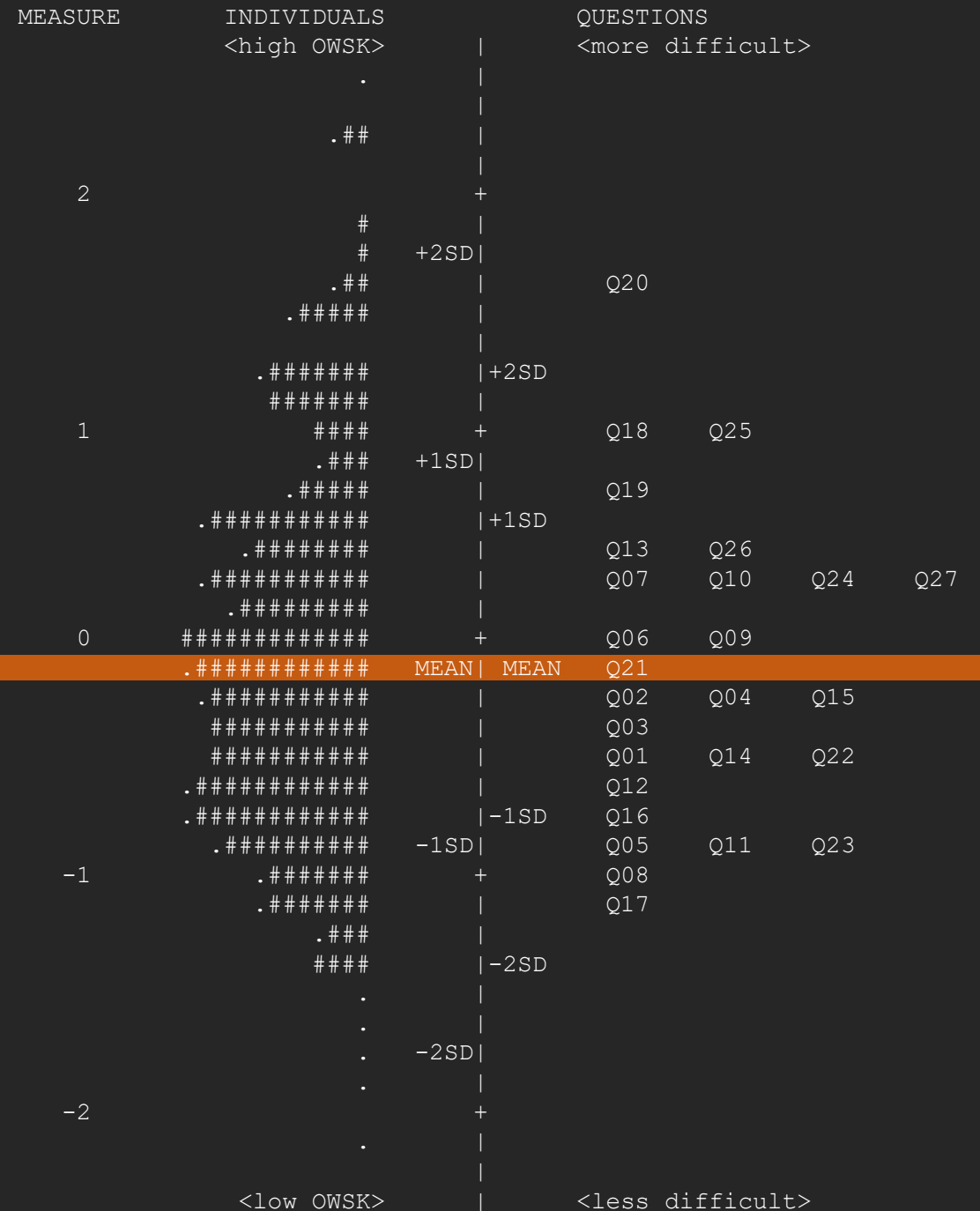
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Ordinary water science knowledge (OWSK)

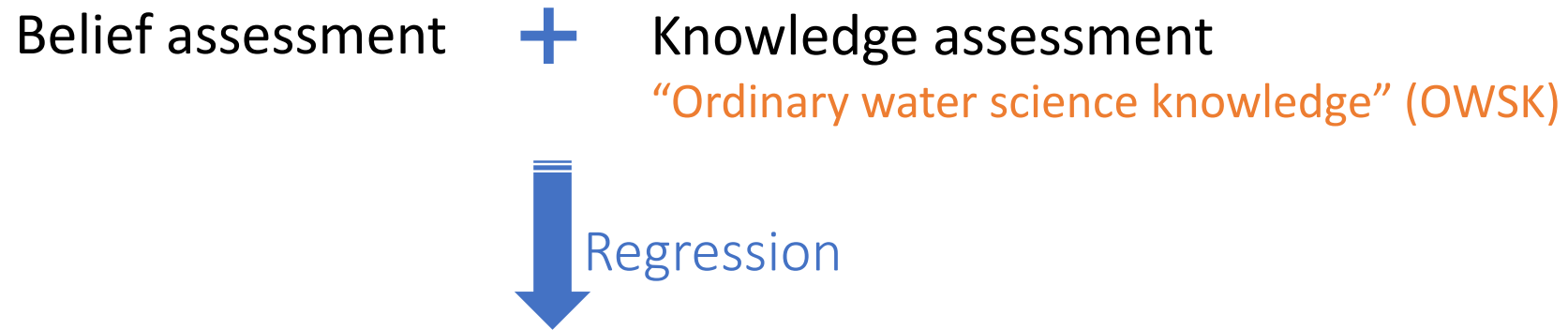
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Q1: What is the primary source of drinking water in [North/Central Florida; South Georgia]?

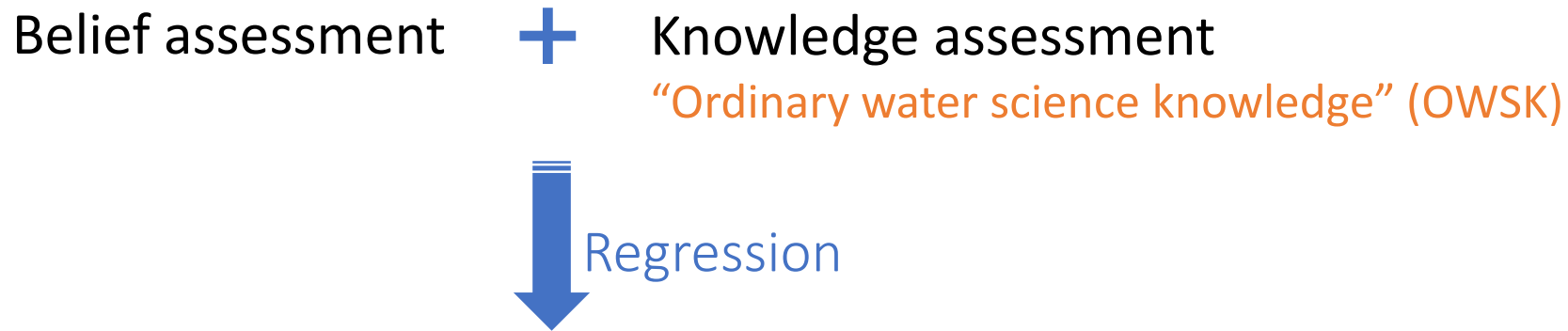
- Underground water
- Rainfall collected in cisterns
- Surface water
- Ocean water with the salt removed



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On topics that suggest politically undesirable policy:

No significant relationship between scientific knowledge and water beliefs

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Communication strategy



- Be aware that emotion can negate fact.

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Communication strategy



- Be aware that emotion can negate fact.
- Alleviate the sense that water science will inevitably force policy action contrary to partisans' political ideals.

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Communication strategy

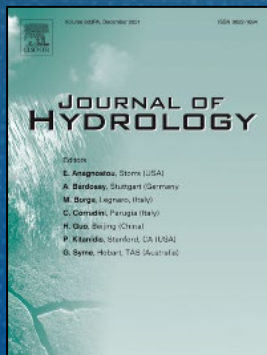


- Be aware that emotion can negate fact.
- Alleviate the sense that water science will inevitably force policy action contrary to partisans' political ideals.
- Early interventions are critical!



Thank you

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Hundemer S., Monroe M.C., Kaplan D. 2021. The water science communication problem: Water knowledge and the acceptance or rejection of water science, *Journal of Hydrology*, 604.
<https://doi.org/10.1016/j.jhydrol.2021.127230>.



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