Investigating Expectations for Voice-based and Conversational Argument Search on the Web

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Argument Search

Argument Search

args   banning plastic bags 🔍

All Discussions People   Pro vs. con view ▾   25 arguments retrieved in 58.0 ms

PRO   **CON**

Actually i have to say if I am for banning plastic bags...

▶ Show full argument

Actually i have to say if I am for **banning plastic bags** then I think that it is a good idea. TO be honest no one really carries **plastic** they always want paper so why have **plastic bags** in …
https://www.debate.org/debates/Ban-plastic-bags-in-grocery-stores/1/
score ▾

Plastic bags are being labelled as part of our disposable...

▶ Show full argument

Plastic bags are being labelled as part of our disposable culture. However, the reality is, people do re-use their **plastic bags** of their own accord. Many people will use them on their future …
https://debatewise.org/debates/1011-should-plastic-bags-be-banned/
score ▾

Plastic bags can and have killed/(have been used to kill)...

▶ Show full argument

Plastic bags can and have killed/(have been used to kill) many an animal (including human beings) and they only have one singular

Plastic bags are an easy, disposable way to transport...

▶ Show full argument

Plastic bags are an easy, disposable way to transport goods bought from the market. Indeed, they can harm the environment, but proper disposal of these **bags** will solve that problem. The …
https://www.debate.org/debates/Ban-plastic-bags/1/   score ▾

Well if Animals have to die, just force them to mate as...

▶ Show full argument

Well if Animals have to die, just force them to mate as much as you can until they are over populated, then if some are killed it will be ok, and the same thing for children. If each couple …
https://debatewise.org/debates/1011-should-plastic-bags-be-banned/
score ▾

Is infrastructure really the problem? It is because we...

▶ Show full argument

Is infrastructure really the problem? It is because we think that it is someone else's problem that we misuse the **plastic bags**. Most people don't even care about that the misuse so why …

https://www.args.me

Example of an Argument Search

SearchResearch Challenge (2/26/20): Does banning plastic bags actually help? How can you find out?

Dan Russell

View my complete profile

"So it was with great interest that I heard a story on NPR [...] pointing out that passing a law banning thin-film plastic bags in supermarkets seems to have actually caused an INCREASE in the number of plastic bags sold."

- ❑ Does banning plastic bags actually help?
- ❑ Can you find the paper of the study?
- ❑ What's the title?
- ❑ Where was it published?
- ❑ Where was the data collected from?
- ❑ How representative is this data?
- ❑ What do you call the effect when a regulation results in the increased consumption?
- ❑ Has banning plastic bags worked elsewhere?
- ❑ Is there a study for this other place?

https://searchresearch1.blogspot.com/2020/03/answer-does-banning-plastic-bags.html   ·   @KieselJohannes

Example of an Argument Search

SearchResearch Challenge (2/26/20): Does banning plastic bags actually help? How can you find out?

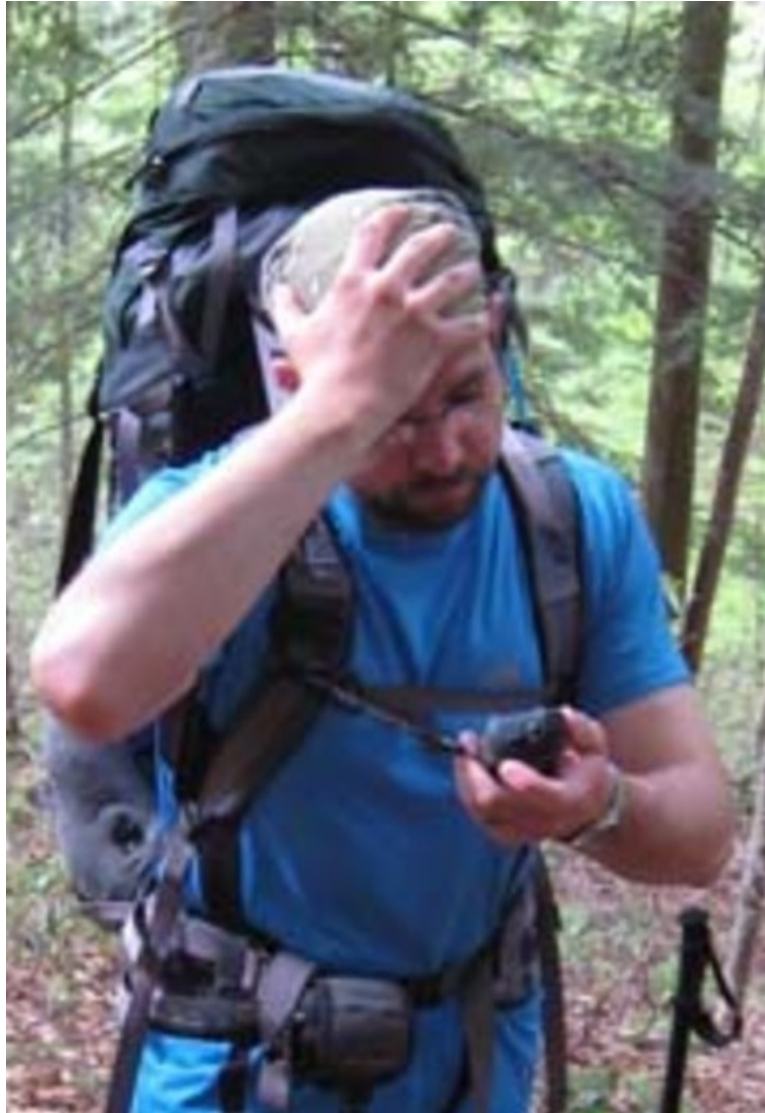"So it was with great interest that I heard a story on NPR [...] pointing out that passing a law banning thin-film plastic bags in supermarkets seems to have actually caused an INCREASE in the number of plastic bags sold."

- Does banning plastic bags actually help? → Ask for arguments
- Can you find the paper of the study? → Ask for source
- What's the title? → Ask for detail
- Where was it published? → Doubt source
- Where was the data collected from? → Doubt evidence
- How representative is this data? → Doubt evidence
- What do you call the effect when a regulation results in the increased consumption? → Ask for background information
- Has banning plastic bags worked elsewhere? → Ask for counter-evidence
- Is there a study for this other place? → Doubt evidence

https://searchresearch1.blogspot.com/2020/03/answer-does-banning-plastic-bags.html   ·   @KieselJohannes

Voice-based and Conversational Argument Search

Conversational argument search

- ❏ specifying circumstances
- ❏ demanding explanations
- ❏ demanding evidence
- ❏ doubting arguments
- ❏ questioning beliefs

Voice-based argument search

- ❏ intuitive; like in daily live
- ❏ always available (no large display)
- ❏ while doing something else
- ❏ possibly together with others

Survey

Online survey (Amazon's Mechanical Turk) with 500 participants from 10 countries

- ❑ Adaptation of product testing and service market research surveys
- ❑ Explanation of argument search with the use of `args.me`
- ❑ Participants took 12 minutes on average
- ❑ Data available at https://doi.org/10.5281/zenodo.3490948

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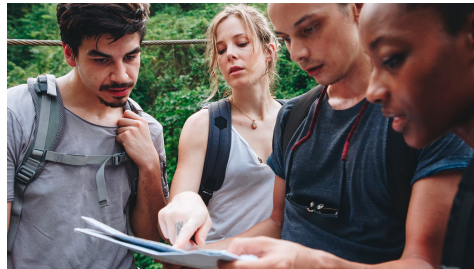
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We explored:

- ❑ In which **situation** would people use voice-based argument search?
- ❑ With which **motivation** would people use voice-based argument search?
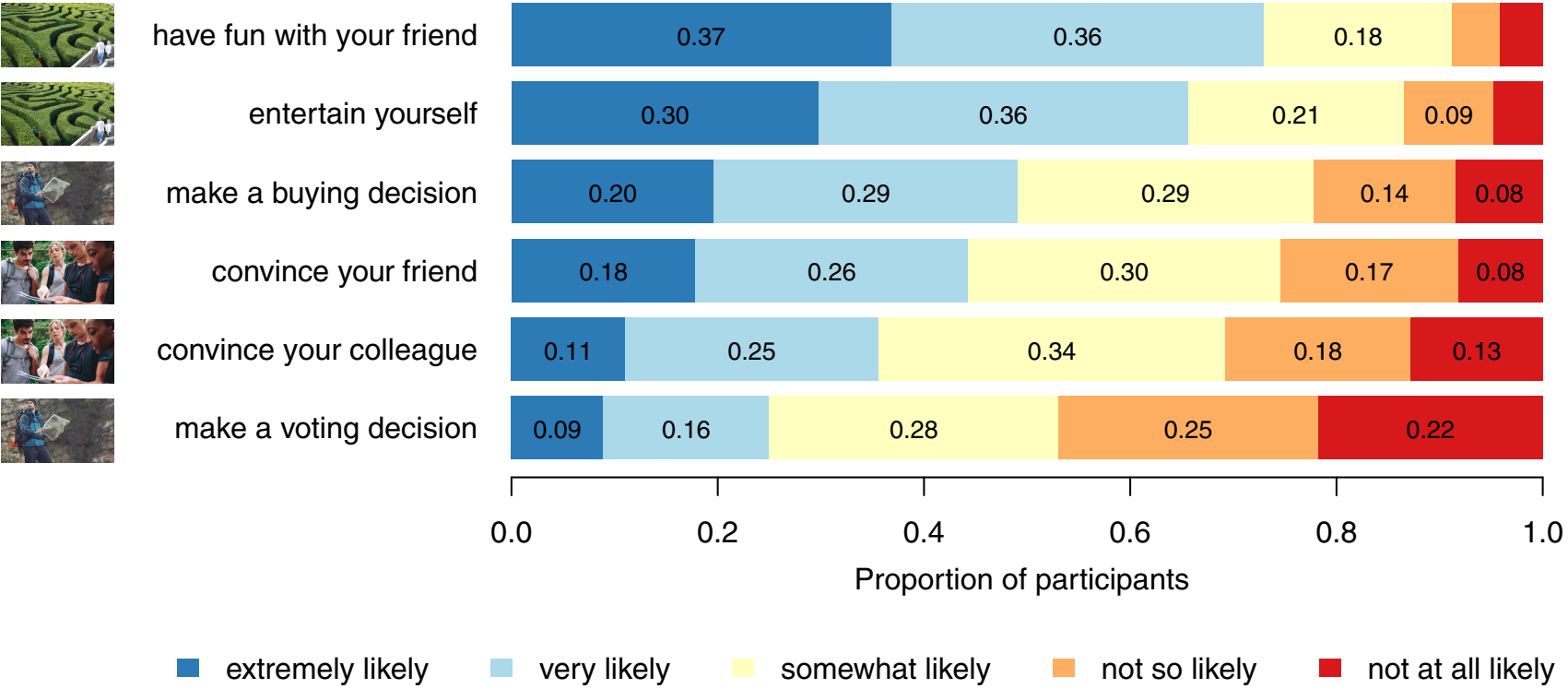

decide on something

convince somebody

entertainment

- ❑ Which **features** of voice-based argument search would people appreciate?
- ❑ Which **ranking-criteria** expect people to be the most important?

Survey: Motivations for Argument Search

If voice-based argument search were available for you today, how likely would you use it to ...

	extremely likely	very likely	somewhat likely	not so likely	not at all likely
have fun with your friend	0.37	0.36	0.18		
entertain yourself	0.30	0.36	0.21	0.09	
make a buying decision	0.20	0.29	0.29	0.14	0.08
convince your friend	0.18	0.26	0.30	0.17	0.08
convince your colleague	0.11	0.25	0.34	0.18	0.13
make a voting decision	0.09	0.16	0.28	0.25	0.22

Proportion of participants

■ extremely likely   ■ very likely   ■ somewhat likely   ■ not so likely   ■ not at all likely

Example scenario for "have fun with a friend": You are at home with a friend and you want to order pizza. For some reason, you come to argue about the sense or nonsense of pineapple on pizza, but can't come to a conclusion. To make a joke of the situation, you ask your voice assistant what arguments there are against having pineapple on pizza.

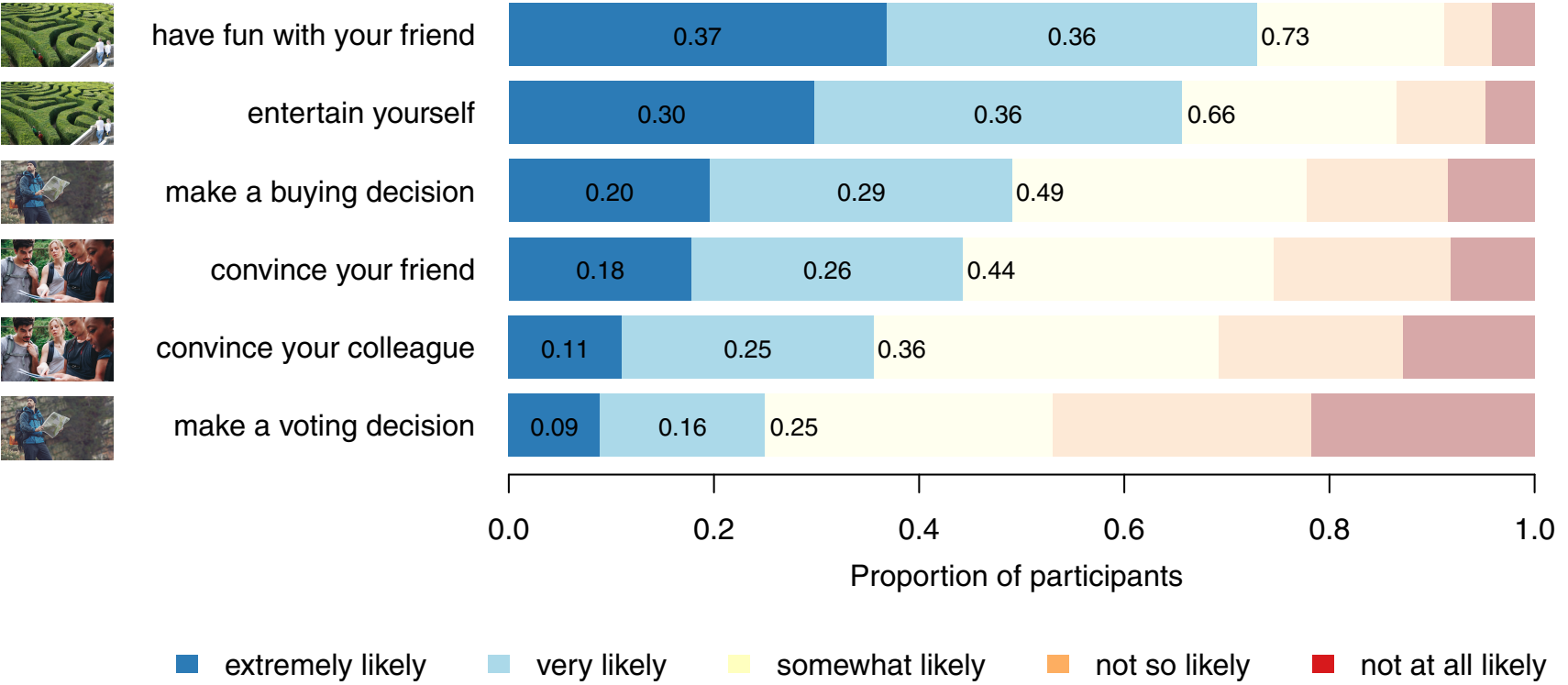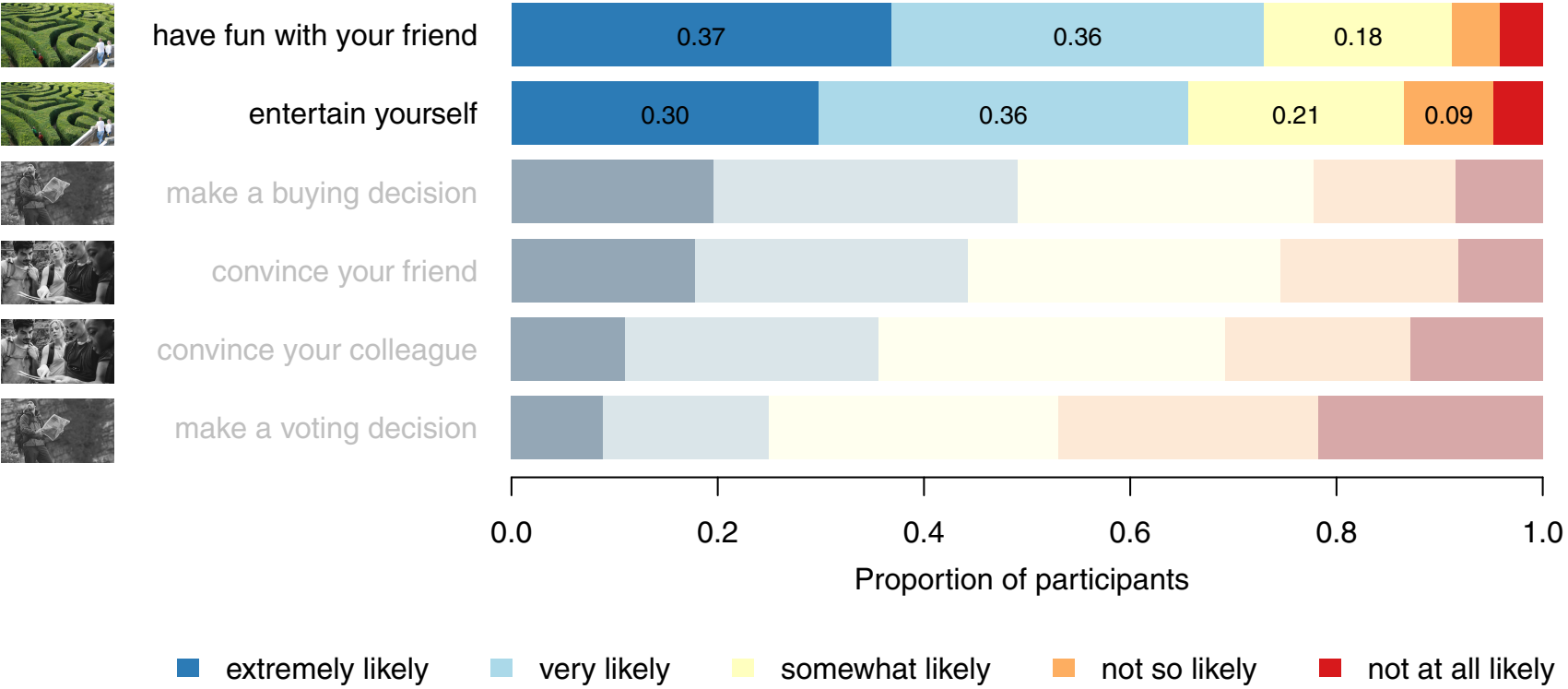# Survey: Motivations for Argument Search

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Photos: warrengoldswain, rawpixel, jonfletch   ·   @KieselJohannes

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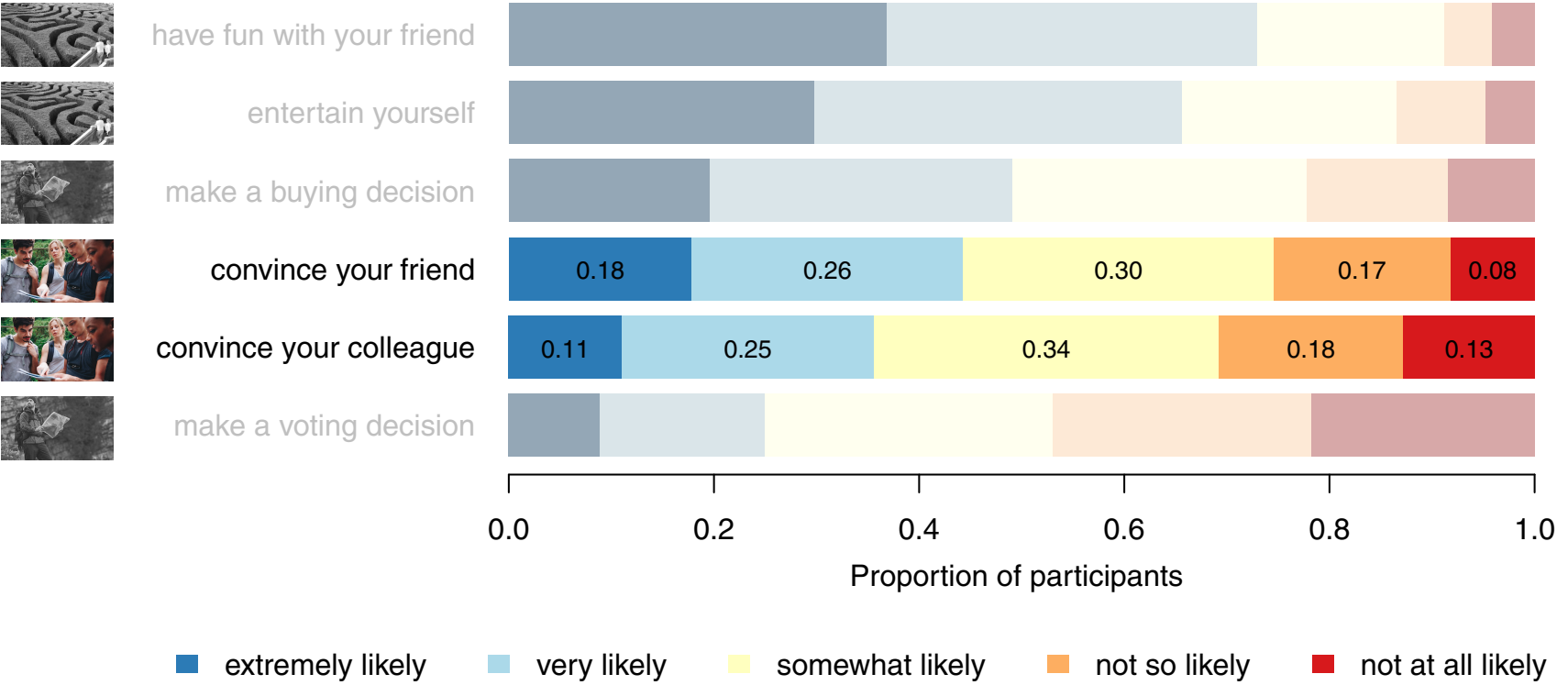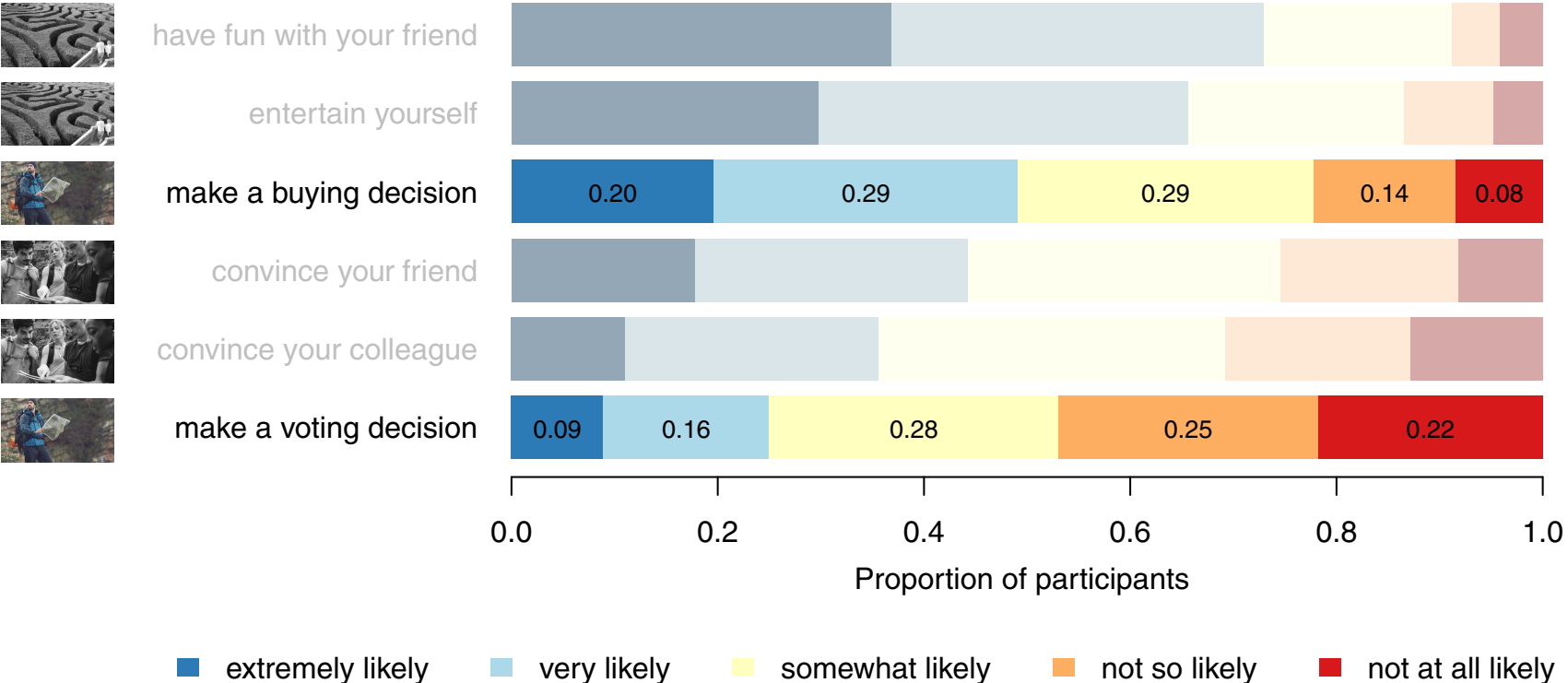
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Example scenario for "convince your colleague": Your coworker is annoyed because the staff have to start wearing specific work uniforms from tomorrow onwards. You ask your voice assistant to give pro arguments for work uniforms so that you can convince your colleague that they are actually practical.

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"Voting is such a delicate topic, I would assume extra research in other ways would benefit it."
(16 comments mention the importance of voting and/or need to check other sources)

"Difficult to answer, depends on how trustworthy and unbiased I believe the voice assistant to be."

(22 comments mention trust issues regarding AI, algorithms, assistants, or assistant companies)

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User Study

User study with simulated setup (human over voice-chat) and 18 participants

- ❑ Participants got introduction to voice-based argument search
- ❑ Each participant picked 4 topics (2 convince; 2 decide) from 6 available
- ❑ Argument search for each topic took between 1.5 and 8 minutes
- ❑ 1043 participant actions, manually labeled (4 categories; 25 sub-categories)
- ❑ Data also available at https://doi.org/10.5281/zenodo.3490948

System	... [First, electric cars fight global warming better than hybrids.]$_{Reveal}$ ... [Do you want to hear con arguments?]$_{Inquire}$
Participant	[No,]$_{Reveal}$ [but I would like to hear the source of the first argument.]$_{Inquire}$
System	[The argument is originated from the article of the portal *faz.net*.]$_{Reveal}$
Participant	[Do you have any scientific research regarding this topic.]$_{Inquire}$
System	[Do you want to hear evidence for this argument?]$_{Inquire}$
Participant	[Yes.]$_{Reveal}$
System	[Evidence that speaks for this argument is the study of Dr. Prof. Walter Herbernikus in 2014, which showed that electric cars have a two times better impact on global warming than hybrids.]$_{Reveal}$
Participant	[Okay. Thank you.]$_{Navigate}$

User Study: Participant Actions

- One third of all participant actions were inquiries to the system
- Another third were to reveal something to the system
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Participant inquire action	Occurrences	
Get arguments	219	64%
Get context information	65	19%
Get arguments by aspect	29	9%
Get evidence	20	6%
Get argument source	4	1%
Get number of arguments	4	1%

- Most inquiries were about getting arguments
- A fifth were about context information
  (e.g., definitions, product information, or comparisons)
- Very few inquiries about the argument source or further evidence

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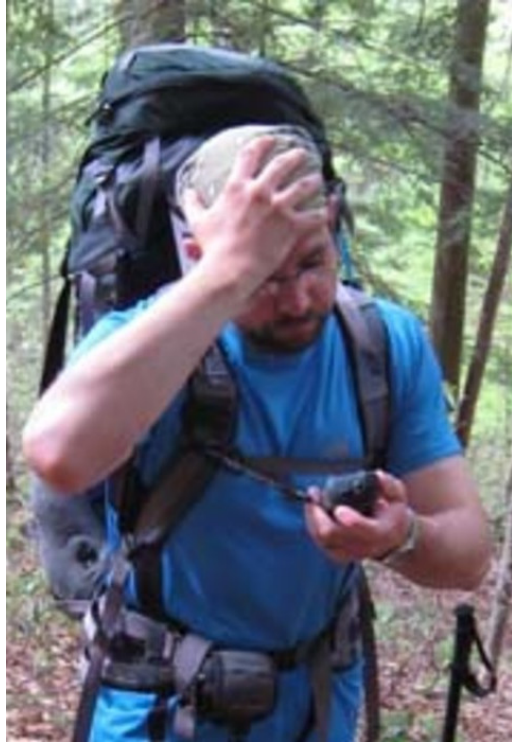
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Conclusion

Why, when, and how do people expect to perform voice-based argument search?

- Online survey with 500 participants
- User study with 18 participants

- **Why?** Entertainment, deciding, persuading; especially for "low risk" tasks
- **When?** Especially at home; both when alone and with friends
- **How?** In a conversation: aspect overview, context information, source, evidence