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Interface for collecting answers to equivocal questions for crowdsourcing

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Interface for collecting answers to equivocal questions for crowdsourcing

Constance THIERRY, Yolande LE GALL, Gery CASIEZ,
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Arnaud MARTIN, Thomas PIETRZAK

Workshop Visualization & HCI for Crowd-Sourcing
25 June 2019



UMR

IRISA



Centre de Recherche en Informatique,
Signal et Automatique de Lille



Scientific standing

- The difficulty of establishing a data collection system to collect reliable and relevant data
- The impossibility for contributors to express their contribution in detail in the event of indecision due to the limitations of the expression possibilities of the response collection interface.
- Data imperfections cannot be modeled and integrated into the information fusion process for optimal decision-making.

3 phases

- Uncertainty
- Imprecision
- Both uncertainty and imprecision

Members of the project



Arnaud MARTIN
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Phase 1: Uncertainty

Which segment is the tallest?

● ● ● ● ●

Vertical lines of varying heights are shown below the question.

What is your certitude?

Totally uncertain Uncertain Slightly uncertain Neither certain nor uncertain Slightly Certain Certain Totally certain

● ● ● ● ● ● ●

Validate

Progress bar at the bottom left.

2 campaign on Figure Eight platform [1]

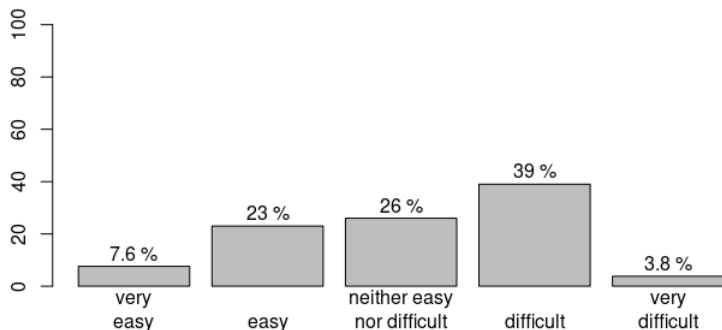
- 1st campaign: 25 contributors of area 3 (the most serious ones)
- 2nd campaign: 107 contributors of area 1 (area 1 includes contributors of both 2 and 3)
- 3 HITs composed of 30 questions
- 2 different sets of delta
 - $\text{delta0} = [0, 300, 600, 900, 1200, 1500]$
 - $\text{delta1} = [0, 300, 600, 1200, 1800, 2400]$

Half of the contributors (66) performed the campaign with delta0 and the other half with delta1

Total data = $(107 + 25) * 3 * 30 = 11880$

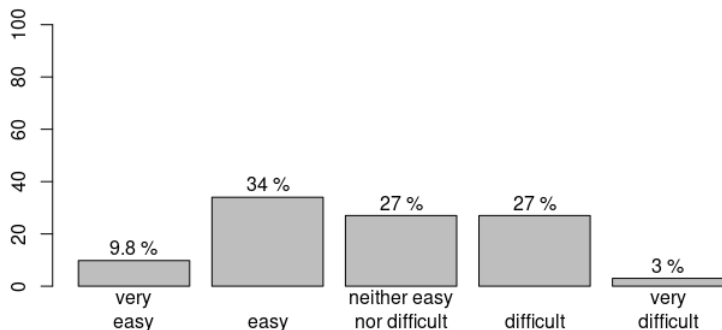
Difficulty selecting the segment

For you specify the longest segment was:

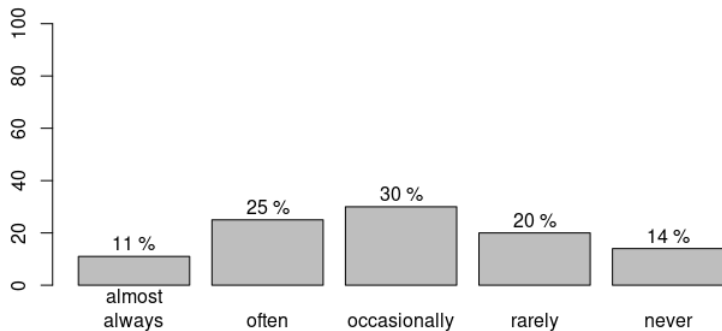


Difficulty to express certainty

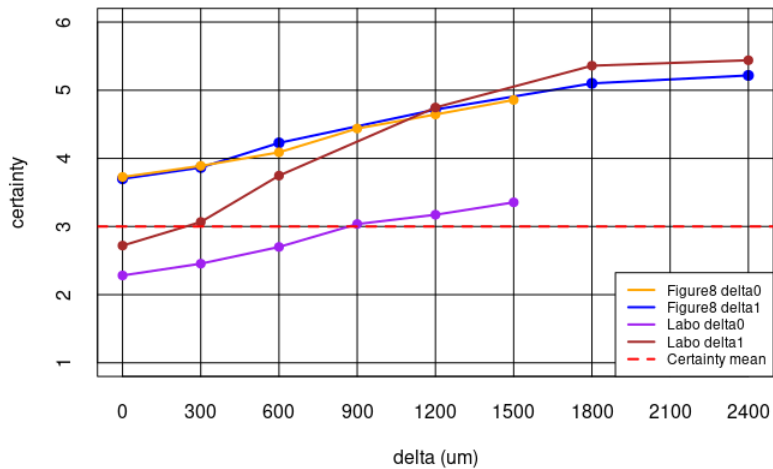
For you to express your certainty was:



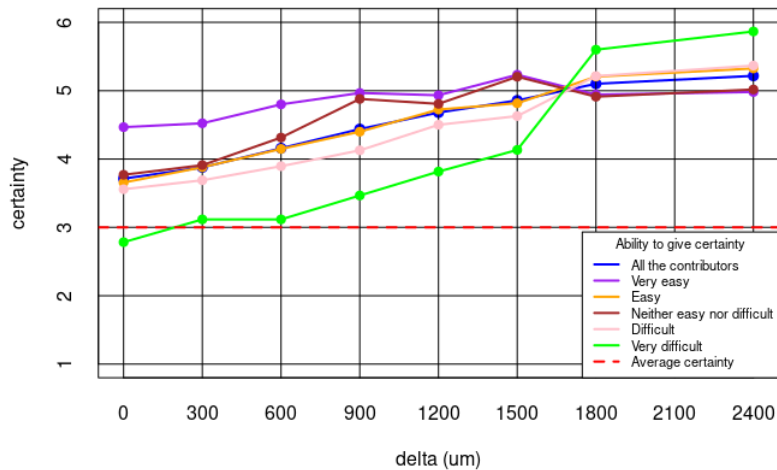
Did you hesitate before answering?



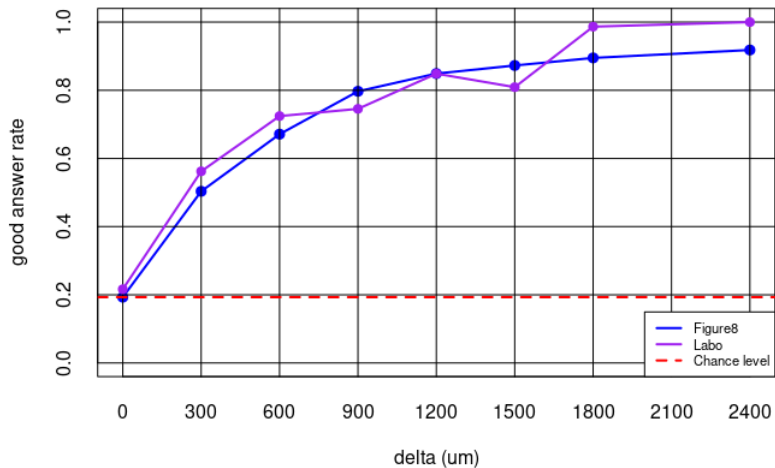
Certainty



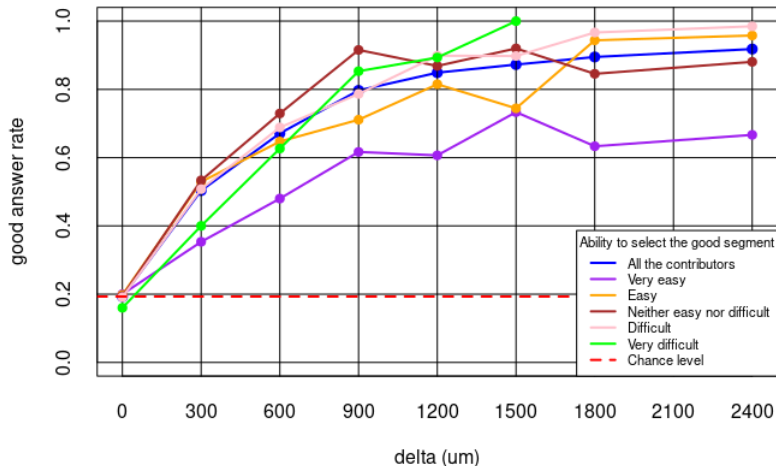
Group of contributor certainty



Good answers



Group of contributors according to their ability perceived to choose the good answer



Headworks [2]

- ANR project (2016-2021)
- Complex crowdsourcing systems
- Partners : Cesco (Musée National d'Histoire Naturelle), Wirk (FouleFactory), Valda (INRIA Paris), Druid (Rennes 1), Links (Inria-Lille), Sumo (Inria-Bretagne)



Conclusion

- Contributors are not accustomed to giving their certainty in their response
- The certainty provided is strongly correlated with the difficulty of the task
- The correct response rate is also correlated with the difficulty of the task

- [1] Figure eight web site.
<https://www.figure-eight.com/>.
Accessed: 2019-06-10.
- [2] Anr headworks web site.
<http://headwork.gforge.inria.fr/software>.
Accessed: 2019-06-18.