



HAL
open science

Interface for collecting answers to equivocal questions for crowdsourcing

Constance Thierry, Yolande Le Gall, Géry Casiez, Jean-Christophe Dubois,
Sylvain Malacria, Arnaud Martin, Thomas Pietrzak

► **To cite this version:**

Constance Thierry, Yolande Le Gall, Géry Casiez, Jean-Christophe Dubois, Sylvain Malacria, et al..
Interface for collecting answers to equivocal questions for crowdsourcing. Workshop Visualization &
HCI for Crowd-Sourcing, Jun 2019, Clermont-Ferrand, France. hal-02402853

HAL Id: hal-02402853

<https://inria.hal.science/hal-02402853v1>

Submitted on 10 Dec 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Interface for collecting answers to equivocal questions for crowdsourcing

Constance THIERRY, Yolande LE GALL, Gery CASIEZ,
Jean-Christophe DUBOIS, Sylvain MALACRIA,
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
Jean-Christophe DUBOIS
Yolande LE GALL
Mouloud KHAROUNE
Constance THIERRY
David GROSS-AMBLARD

Stéphane HUOT
Thomas PIETRZAK
Gery CASIEZ
Sylvain MALACRIA
Pierrick URO

Phase 1: Uncertainty

Which segment is the tallest?

● ● ● ● ●

Vertical lines of varying heights are shown below the dots.

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]

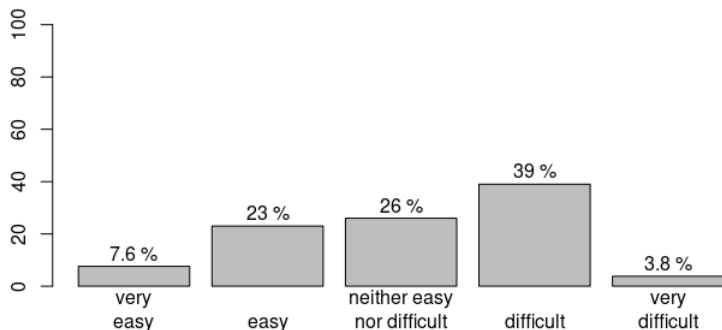
- 1st campaign: 25 contributors of area 3 (the most serious ones)
- 2nd campaign: 107 contributors of area 1 (area 1 includes contributors of both 2 and 3)
- 3 HITs composed of 30 questions
- 2 different sets of delta
 - $\text{delta0} = [0, 300, 600, 900, 1200, 1500]$
 - $\text{delta1} = [0, 300, 600,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

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

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

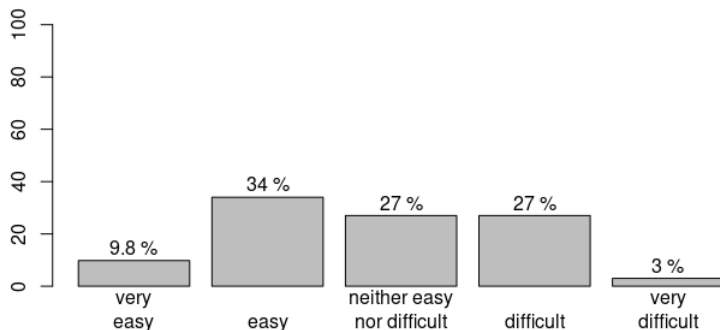
Difficulty selecting the segment

For you specify the longest segment was:

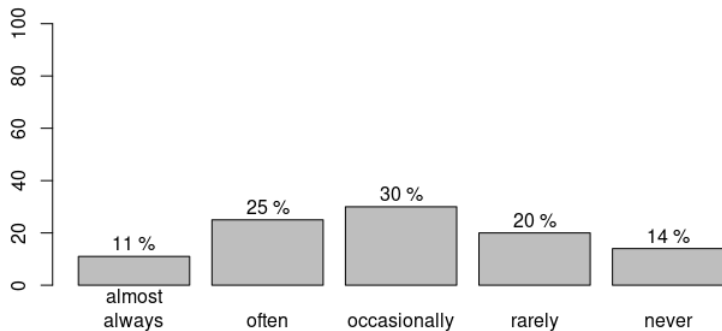


Difficulty to express certainty

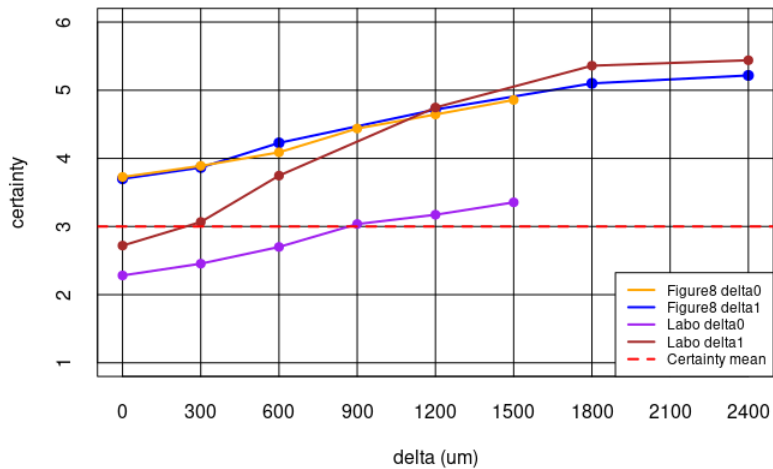
For you to express your certainty was:



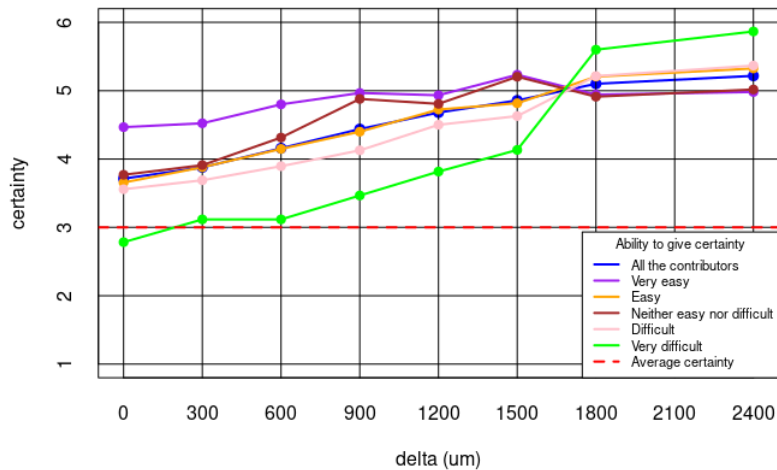
Did you hesitate before answering?



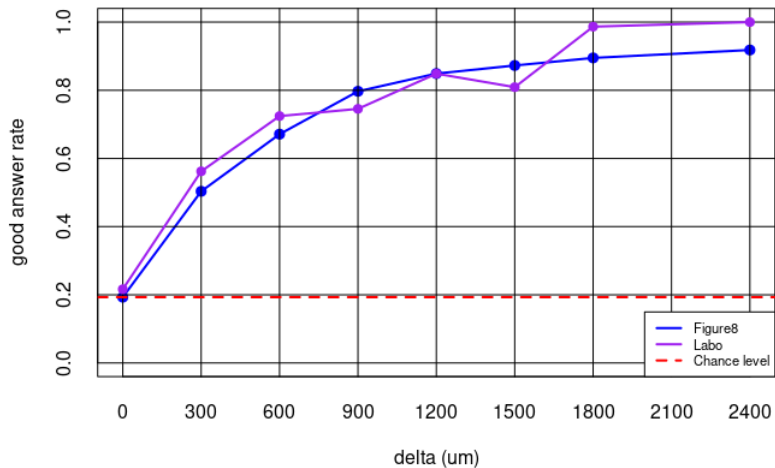
Certainty



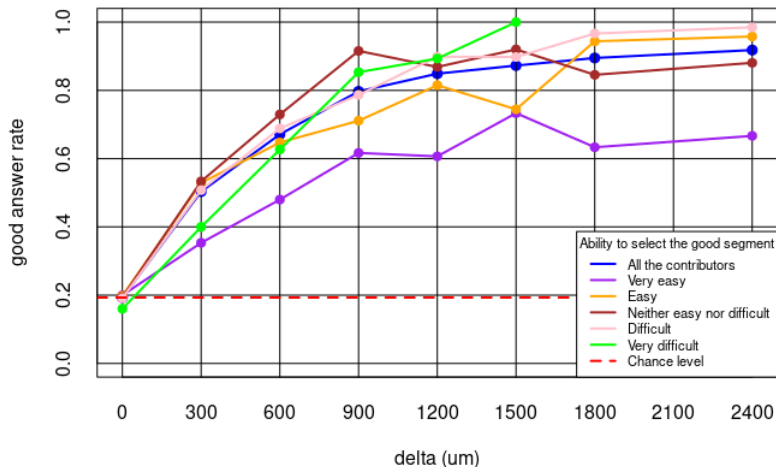
Group of contributor certainty



Good answers



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



- 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.