APPENDIX A - INTERVIEWS

Interview - Experiment 1

General information
1. Age
2. Gender
3. Degree of study
4. Level of understanding of English

Table reading
1. Which table have you just read?
2. What was the main topic in the table?
3. What is the first thing that you remember about the table?
4. Why do you remember it?

For each table, the following questions are proposed:
1. Write a short summary (at least 4 lines) of the table

2. How much did each column contribute to your understanding of the table?[1]
3. Why did you attribute these ratings to each column?
4. Which columns did you consider in order to understand the table?
5. Why did you consider those columns in the process of understanding the content of the table?

6. How would you rate your background knowledge on the main topic of the table?
7. How would you rate your interest in the main topic of the table?

8. What was the main topic in the table?
9. What is the first thing that you remember about the table?
10. Why do you remember it?

Interview - Experiment 2

General information
1. Age
2. Gender
3. Degree of study
4. Level of understanding of English
5. Started at

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[1] The same question is proposed w.r.t. each column in the table

Table: Videogames
1. Videogames are the main topic of Table 1
2. Applications are the main topic of Table 1
3. Pokémon are the main topic of Table 1
4. The genre that is less present is Turn-based Strategy Game
5. The genre that is less present is Role-Playing Game (RPG)
6. The table is sorted by year
7. The table is sorted by developer
8. There have been collaborations between different developers
9. The game that has been distributed on more platforms is Unreal Tournament
10. The game that has been distributed on more platforms is Metroid Prime
11. The game that has been distributed on more platforms is Call of Duty: Modern Warfare 2
12. The highest number of platforms on which any game has been distributed is 6
13. The highest number of platforms on which any game has been distributed is 4
14. The highest number of platforms on which any game has been distributed is 8
15. One game has been distributed only on one platform

Table: Roman Emperors
1. Roman Emperors are the main topic of Table 2
2. Dictators are the main topic of Table 2
3. Byzantine Emperors are the main topic of Table 2
4. There is at least one man in Table 2 that has been deposed
5. The longest reign lasted 42 years
6. The longest reign lasted 35 years
7. No rows in Table 2 include death by natural causes
8. Some successions derived from someone's father's death
9. There have been deaths by strangulation
10. The average length of a reign is 11 years
11. There is at least an unknown birthdate
12. More than one man has been murdered by Praetorian guards
13. At least one man was born before Christ (B.C.)

Table: Mathematicians
1. Mathematicians and their PhD are the main topic of Table 3
2. Physicians and their PhD are the main topic of Table 3
3. Psychologists are the main topic of Table 3
4. The earliest year of PhD is 1682
5. The earliest year of PhD is 1694
6. The earliest year of PhD is 1678
7. All the years of PhD are known
8. The table is sorted by year
9. Most thesis titles are in Latin
10. Most thesis titles are in German
11. There is at least a supervisor that is repeated throughout subjects

12. The most present granting institution in Table 3 is Georg-August-Universitat Gottingen
13. The most present granting institution in Table 3 is Martin-Luther-Universitat Halle-
14. Wittenberg
15. There is at least one subject for which no information is known
16. Joseph Louis Lagrange's supervisor was Leonhard Euler
17. Joseph Louis Lagrange's supervisor was Johann Bernoulli
18. There is one subject named Carl Friedrich Gauss
19. There is one subject named Karl Christian von Langsdorf

For each table, the following questions are asked:
1. How would you rate your background knowledge on the main topic of the table?
2. How would you rate your interest in the main topic of the table?

Interview - Experiment 3

General information
1. Age
2. Gender
3. Degree of study
4. Level of understanding of English

For each table,the following questions are asked:
1. How would you rate your background knowledge on the main topic of the table?
2. How would you rate your interest in the main topic of the Mountains table?
3. Considering your level of background knowledge and interest, which of the above descriptions do you consider most appropriate

APPENDIX B - Datasets

Dataset - Experiment 1

The table displayed within the context of the first experiment are:
1. Mountains (T2Dv2);
2. Emperors (T2Dv2);
3. Film.

Dataset - Experiment 2

The table displayed within the context of the second experiment are:
1. Videogames (T2Dv2);
2. Emperors (T2Dv2);
3. Mathematicians (T2Dv2);

Dataset - Experiment 3

The table displayed within the context of the second experiment are:
1. Mountains (T2Dv2);
2. Emperors (T2Dv2);
3. Organisations (T2Dv2);
4. Videogames (T2Dv2).

The tables used are extracted from the web and from the T2Dv2 Goldstandard dataset http://webdatacommons.org/webtables/goldstandard.html).

Regarding the web, we select the following tables for testing and developing the tool and experiments:
- Cryptocurrencies - https://www.cryptominando.it/2018/12/08/attacco-del-51-tabella-costi-stimati/
- calories and nutritional values of fruit (78 rows, 5 columns) - http://www.dietabit.it/alimenti/frutta/
- foods that contain water (1391 rows, 4 columns) - http://www.dietabit.it/alimenti/acqua/}}, the 50 most influential women in technology (50 rows, 4 columns) - https://www.forbes.com/top-tech-women-america/list/
- statistics on mobile apps (10842 rows, 13 columns) - https://www.kaggle.com/lava18/google-play-store-apps and a list of films (23 rows, 8 columns).

Regarding T2Dv2, we select the following tables:
- mountains (32 colums, 4 rows),
- roman emperors (91 rows, 5 columns),
- videogames (24 rows, 5 columns),
- inventors (33 rows, 3 columns)
- organisations (100 columns, 8 columns)
  (T2Dv2 index: mountains 14311244_0_7604843865524657408, emperors 51130304_0_3035822254995425429, games 29414811_6_8221428333921653560, inventors 21333456_2_1886495893795687264, organisations 28079336_1_3124145965038277571).

Tables were chosen so as to present data of the same type (e.g., date ranges, years, names) at different positions throughout the experiment and thus curb any possible bias due to participants' reading direction.

APPENDIX C - Results

Results - Experiment 1
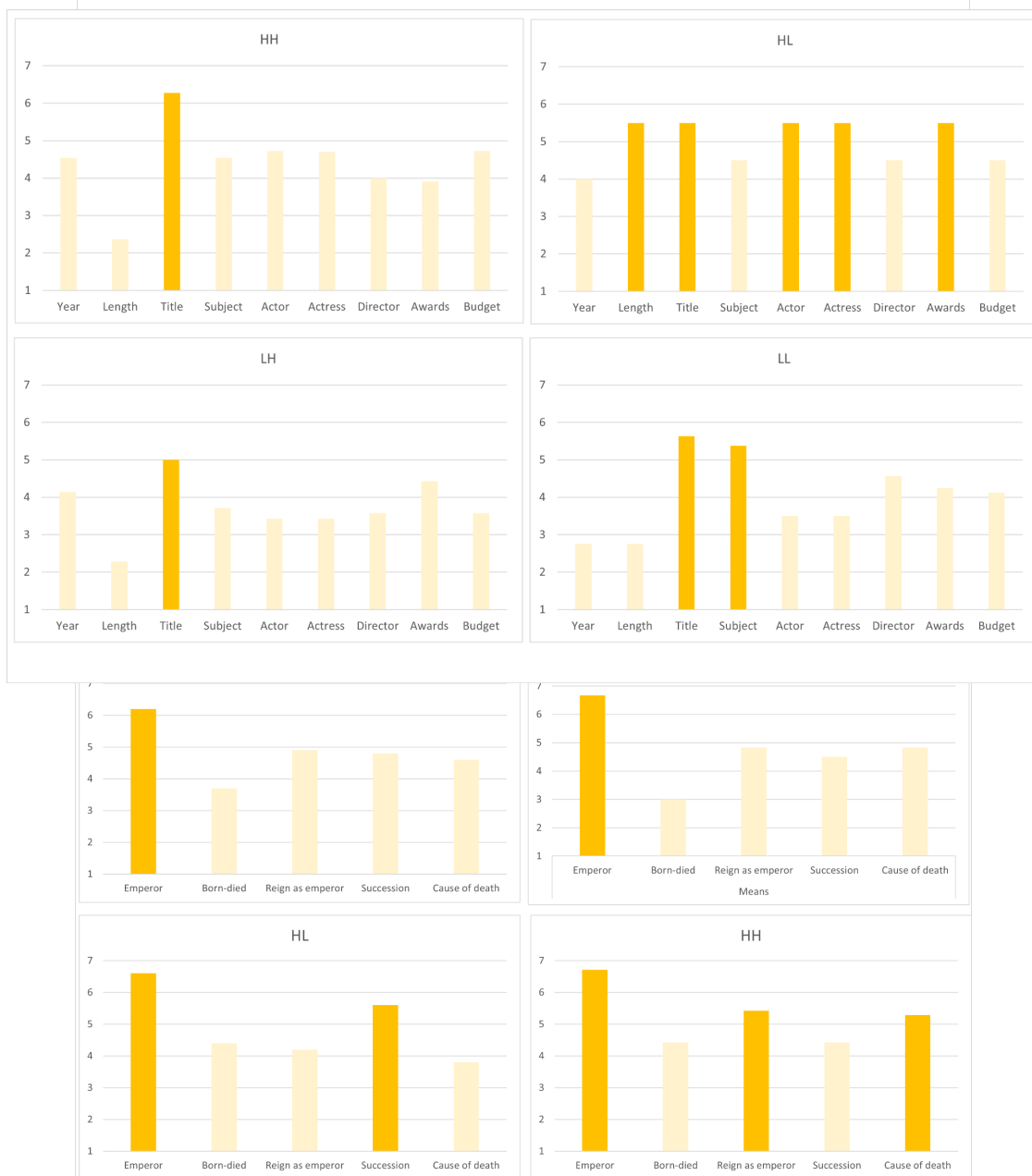
By combining those patterns with questionnaires' answers related to prior knowledge and interest, we observe that: (i) those who do not possess prior knowledge of a given domain pay more attention to the first columns on the left, where the subject is usually placed; (ii) those who have previous knowledge adopt a different behaviour according to the number of columns: if

the table has less than six columns, the user tends to observe all of them. On the contrary, if the number of columns is greater or equal to six, the user focuses only on the subject column and then moves on to the columns on the right of the table. Regarding participants' interest in the content of each table, those who are not interested in the table's domain mainly observe the header, and at most, the first eight rows; and those who are interested in the table's domain analyse all or most of its content. The answers to the first questionnaire presented in the previous figures, regarding which columns in the table are most taken into account and considered important for understanding, show a different focus of attention depending on whether or not the user has interest and background knowledge, confirming the results of the eye-tracking study. Those who have background knowledge are prone to consider and observe more columns than those who are not familiar with the domain; on the contrary, those who are interested in the domain tend to scan the table vertically, reading the data in each cell and focusing, in particular, on the column of the subject.

Results - Experiment 2

The following charts represent the distribution of the answers provided by users in the context of the second experiment. They report in percentages the responses collected during the second experiment concerning the videogames table, evaluated as follows:

- true, meaning a degree of agreement between 1 and 3 if the statement is incorrect or a degree of agreement between 5 and 7 if the statement is correct;
- false, meaning a degree of agreement between 5 and 7 if the statement is incorrect or a degree of agreement between 1 and 3 if the statement is correct;
- null, meaning a degree of agreement equal to 4 whether the statement is correct or incorrect.
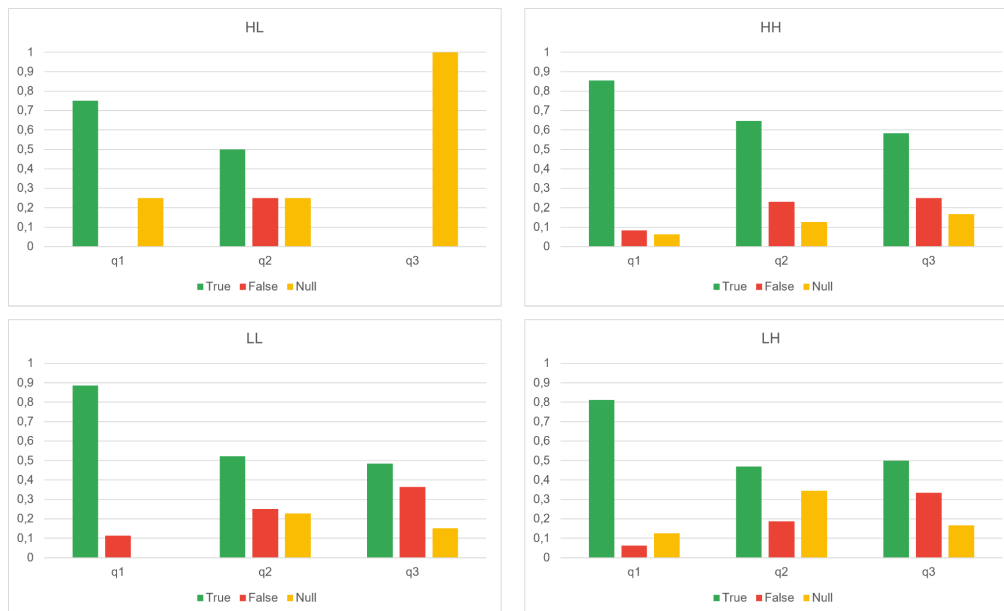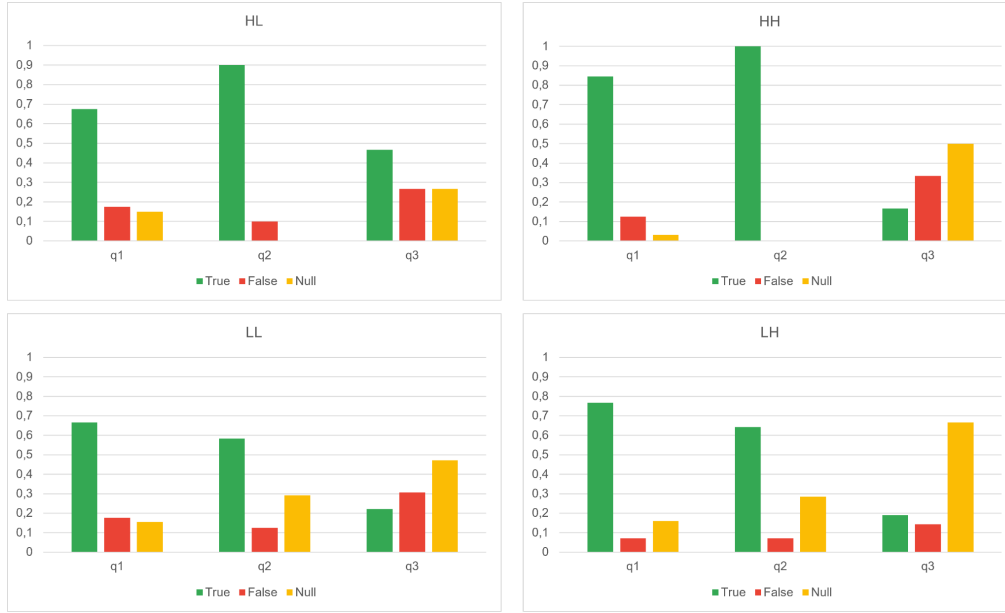

Table 1 - Videogames

Table 2 - Emperors

Table 3 - Mathematicians

Results - Experiment 3

In the experimental hypothesis, the distribution of responses, dependent on membership in the four macro-categories of users, is as follows:

1. Low background knowledge and low interest (LL): Option 1 (O1);
2. Low background knowledge and high interest (LH): Option 2 (O2);
3. High background knowledge and low interest (HL): Option 3 (O3);

4. High background knowledge and high interest (HH): Option 4 (O4).

Given the small number of observations available, the statistical analysis of the results of the third experiment was conducted by performing a Fisher's exact test with 0.95 confidence interval to verify whether there is a correlation between belonging to a group of users, defined on the basis of interest and background knowledge, and the choice of a given summary in the experimental phase. We report the p-values - for the greater (two-sided) alternatives - resulting from the application of the test in the tables below.

Mountains	LL	LH	HL	HH
O1	**0.047** (0.053)	-	-	-
O2	-	**0.022** (0.022)	-	-
O3	-	-	**0.004** (0.004)	-
O4	-	-	-	**0.022** (0.022)

Organisations	LL	LH	HL	HH
O1	0.082 (0.082)	-	-	-
O2	-	**0.038** (0.038)	-	-
O3	-	-	**0.007** (0.007)	-
O4	-	-	-	**0.000** (0.000)

Emperors	LL	LH	HL	HH
O1	**0.004** (0.007)	-	-	-
O2	-	**0.001** (0.001)	-	-
O3	-	-	**0.018** (0.018)	-
O4	-	-	-	0.061 (0.061)

Games	LL	LH	HL	HH
O1	**0.020** (0.020)	-	-	-
O2	-	**0.002** (0.002)	-	-
O3	-	-	**0.018** (0.018)	-
O4	-	-	-	0.091 (0.091)

A correlation between summary choice and user category is detectable, although not always strong. From the significance values presented in the table, it is also possible to conclude that the most polarised categories, with both parameters of knowledge and interest high or low (LL,

HH), the user's choices do not correspond to those hypothesized by the experimenters. This may be due to the fact that the self-assessments that the user provides of their degree of interest and domain knowledge are inevitably subject to bias.

The following graphs represent the distribution of responses conditioned on whether or not the responding users belonged to the four macro-categories.

mountains

emperors

organisations

games