Validation of the mental visualization effect on answer selection in closed questions in surveys

A validação do efeito da visualização mental no momento da escolha da resposta em questões fechadas em surveys

Validación del efecto de la visualización mental al elegir una respuesta en preguntas cerradas en encuestas

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Karl Henkel
PhD in Geography by Universidade de Tübingen
Institution: Universidade Federal do Pará
Address: Belém, Pará, Brazil
E-mail: Henkel00@yahoo.de
Orcid: https://orcid.org/0000-0001-7032-2898

Jimnah de Almeida
Master in Arts in Economics
Institution: Universidade de Tübingen
Address: Tubinga, Alemanha
E-mail: Jimnah2014@yahoo.com.br
Orcid: https://orcid.org/0000-0003-2160-6557

ABSTRACT
The selection of listed answers in surveys is influenced by numerous aspects. At the moment of decoding, the mental representation of the item can represent a bias if it is distorted by personal impressions. The present research aims to identify these influences at the moment of choice of items presented sequentially in a closed-ended question by a nominal scale. For this purpose, the answers of a survey were correlated with the results of psychometric experimental pretests on mental image formation by applying them to experimental groups. Although the item selection affects several aspects of linguistic elements, it seems that this no influences the choice. The comparison between the data of mental visualisation of item and item frequency showed a very high correlation unusually in social or psychosocial sciences. Wording can increase the item comprehensibility but not eliminate the visual imagery effects, therefore represents a permanent bias.

Keywords: mental visualisation of item, psychometric test, pre-test, survey experimentation, item choice.

RESUMO
A seleção das item palavras listadas em surveys é influenciada por vários aspectos. Nessa decodificação, a representação mental do item word pode representar um viés caso seja distorcida por impressões pessoais. A presente pesquisa tem como objetivo identificar essas influências no momento da escolha do item apresentado sequencialmente em uma
questão fechada por uma escala nominal. Para tanto, as respostas de um survey foram correlacionadas com os resultados de pré-testes experimentais psicométricos sobre compreensibilidade dos itens e formação de imagens mentais, aplicando-os a grupos experimentais. Embora a seleção dos itens afeta diversos aspectos dos elementos linguísticos, parece que isso não influencia a escolha. A comparação entre os dados de visualização mental do item e a frequência do item mostrou uma correlação muito alta, incomum nas ciências sociais ou psicosociais. Wording pode aumentar a compreensibilidade do item, mas não elimina os efeitos das visualizações mentais, portanto esses representam vieses permanentes.

Palavras-chave: visualização mental de item, teste psicométrico, pré-teste, survey experimentação, escolha de item.

RESUMEN
La selección de las respuestas enumeradas en las encuestas está influenciada por varios aspectos. En el momento de decodificar las respuestas, la representación mental de la palabra elemento puede representar un sesgo si es distorsionada por impresiones personales. La presente investigación tiene como objetivo identificar estas influencias a la hora de elegir el ítem presentado de forma secuencial en una pregunta cerrada por una escala nominal. Para ello, se correlacionaron las respuestas de la encuesta con los resultados de pruebas previas experimentales psicométricas sobre a formación de imágenes mentales, aplicándolas a grupos experimentales. Aunque la selección de ítems afecta a varios aspectos de los elementos lingüísticos, parece que esto no influye en la elección. La comparación entre los datos de visualización mental de los ítems y la frecuencia de los ítems mostró una correlación muy alta, inusual en las ciencias sociales o psicosociales. Wording puede aumentar la comprensibilidad del ítem, pero no elimina los efectos de las visualizaciones mentales, por lo que éstas representan sesgos permanentes.

Palabras clave: visualización mental del ítem, test psicométrico, pretest, experimentación de encuesta, elección de ítem.

1 INTRODUCTION

A review of the scientific literature on Linguistic, Social, Cognitive Sciences and Survey Metodology demonstrates a consensus concerning the influence of mental visualization or visual imagery of items at the moment of item selection. The results are largely based on experimental studies; however, in relation to public opinion research, there are only a few studies which describe surveys as being an interviewee who needs to choose a discursive item presented in a sequential order on a nominal scale. In opinion research, the choice of an answer not bound in the context of the item but rather influenced by an effect or bias like mental visualisation represents a distortion of the answer and not a rational choice.
The paper aims to identify the relationship between mental visualisation of an item and the response frequency of these items. The work is divided into four chapters. At first, some bias related to items are described in general as well as the effect mental visualisation or visual imagery may have on the items. Then after, a psychometric pre-test is conducted to measure the easy comprehensibility of items. Thereafter, a psychometric experiment is scripted to identify the easy degree of mental visualisation of the respective items. In the last chapter, the frequency of the items of the real survey are compared with the results of the mental visualisation experiment.

Two hypotheses are proposed to explain the relationship between item frequency and imagery. The first proposes that the response frequency is less reflected by the easy mental imaginability of items and the interviewee may pay more attention to the contextualization of the item. The second hypothesis states that the visual representation of objects has a stronger influence at polyatomic scales with many items, because the interviewee shortened the cognitive process of selection using the mental visualisation of items.

2 THE INFLUENCE OF BIAS ON THE SELECTION OF ITEMS IN CLOSED-ENDED QUESTIONS

In an interview, a chosen item presented in a closed-ended question on a nominal scale can represent the theoretical existing, true answer. However, the choice can be also influenced by effects not bound to the contextualization of the question or item like cognitive problems of decoding, difficult comprehensibility, memory query or item specific effects like excessive number of items, item sequence, among other things, conceivably causes measurement bias and response tendencies.

A bias associated with linguistics aspects is the item-level priming effect (Heyman, Bruninx, Hutchison, & Storms, 2018) which facilitates the cognitive processing of an item by a stimulus associated with another previously placed item-word and; therefore, increases the probability that former responses produce similar responses (“television news” → “newspaper”; “cow” → “milk”).

The conceptual priming effect influences the item choice through virtue of orthographic similarities to other previously presented items, which generates a false recognition of semantic association, but it results in a more fluent cognitive processing (“politics” → “politician”; “migration” → “migrants”) (Thapar & Rouder, 2001).
Other biases are related to emotional effects of item words, covered by the context of items like “war”, “gay” or “racism” (Altarriba & Bauer, 2004), or words related with unwanted behaviour (“…argue…”, “Do you hate…”), which the respondent avoids answering.

The phonological repetition effect can occur when the interviewee is saying the words mentally and chooses an item according to the similarity of the sound or of items previously presented during the interview (“protection” → ”protectionism”; “federal” → “federalism”) (Lopes, 2006).

A distortion independent of previously listed items may represent the size of the item. The interviewees choose short items to reduce the cognitive effort or choose shorter items because there would have a lower probability of misinterpretation due to the limited dimensions and; therefore, they have a higher comprehensibility. Although the effect is one of the most robust findings in psycholinguistics (Schreuder & Baayen, 1997), there is no consensus relating the operational definition of what is a long or short item.

The choice of an item may also be preconditioned by a framing, regarding no willingness to put in cognitive effort (“Yes”, ”Yes”, ”Yes”; preferences (“radio”, ”car” or ”television”) or lack of decision making (“I don´t know”).

These biases are treated like probabilistic, because it is still unknown which word elements, language structure or contexts effects produce distorted responses, which makes prevention nearly impossible (Vieira, 2019). It is also not clear, how the list-strength effect of special item-words presented in an item sequential list impair the free recall of the remaining items (Diana & Reder, 2005).

3 THE MENTAL VISUALISATION OR VISUAL IMAGERY OF ITEM

In public opinion research, imagery of item is defined as the mental visualization of a descriptive answer (Logie, Zucco, & Baddeley, 1990). A memorized mental visualization has some structural resemblance with the context of the item because it integrates representatives, but also subjective interpreted elements (Rickheit, Herrmann, & Deutsch, 2008). Therefore, regarding like in all other the decision-making process (Oliveira, Figueiredo, Loiola, & Pereira-Guizzo, 2020, p. 68694) on how to answer a question as in a survey, the answer is interpreted as not being completely contextualized with the item-word, because the information about it is previously captured from real existing, often physical conditions and saved in long-term memory which can cause
failures (Robin & Garnier, 2022, p. 10). The use of mental visualisation points to a heuristic strategy and leads to an easier choice of items by reducing cognitive efforts by having to balance less the pros and cons with a certain response with stored information in the brain. The survey response, instead, which is influenced by this visually generated idea (Engelkamp, 1995) is, therefore; consequently, interpreted as bias and completely contradicts the criterion of the invariance of the rational choice theory. If a communication study, for example, confronts a respondent with the closed-ended question: "What type of media and political propaganda most influences you in election campaigns?" and the respondent selects "candidate debate on television" from the list of predetermined items, but visualizes it with "swear word" or “insult”, the answer is not contextualized with the aim of the study which is to know what "political" element influenced the voter.

However, in some cases, mental visualisation leads to an increase in information processing, which makes the decision-making process more difficult because there must be more analysed dimensions. The item-response "... results of public opinion research", for example, represents four linguistic contexts or measurement dimensions ("results" + “public” + “opinion” + “research”) and, therefore; a greater cognitive effort.

The mental visualisation of the item is formed by an external perspective, in which the interviewee only observes the context of the item ("radio", “billboard”, etc.), which does not allow a concrete participation, or through an internal perspective, in which the interviewee can imagine to participate actively and execute the action linked with the item (“I did a door-to-door canvassing with the candidate in the neighbourhood”; “I waved the party flag in the street”, etc.) (McAvinue & Robertson, 2008).

Mental visualisation can influence the choice of items in the long-term memory as well as in the working memory (Roche, Tolan, & Tehan, 2011), or at any position when reading the items.

Due to the fluid reading of the questions and items in a survey, the mental visualisation of the item is called a subordinate bias (Binder & Keith, 1999), and may be accompanied by a social desirability situation, stress, tiredness, or other biases.
4 METHODOLOGICAL PROCESS

To measure the influence of the mental visualisation at the moment of item choice sequentially presented behind a closed question on a nominal scale was used a survey¹, pre-test and survey experiment. Since the designer of the survey questionnaire (academic) and the respondent (collage students) in Belém belongs to different social groups with different understandings or transgressions of cultural differences, a pre-test was conducted as an assessment of cultural, linguistics and conceptual equivalence between interviewer and respondent (Cardoso, 2006) for identify cognitive burdens on the part of the interviewee to detect vulnerability aspects of the instrument. Without this pre-test and the identification of a sufficient understandibility of questions and items, it is not possible to determine the construct validity of the questionnaire as instrument (Taherdoost, 2016).

In the pre-test was applied a quantitative questionnaire to test the future application of the sample questionnaire. With the test was the design of the questionnaire and logic sequence of question targeting; easy of question and item comprehensibility; easy to fill out the checkboxes; appropriateness of the items and item sequences; entre outros (Auer, Hampel, Möller, & Reisberg, 2000).

When referring to the similarity between a survey and the pre-test probability, the sample to select the participants of the pre-test can be probabilistic to obtain a representativeness in relation to the survey. However, the present selection was based on theoretical sampling, in which the random sample selected according to theoretical ideas and not on the statistical probability theory. To better measure the contextualization and comprehensibility of questions and items as a product of cognitive and social language processes, the pre-test was applied to the extreme focus groups of the survey universe (Cyr, 2019). In this way, 50 sixteen-year-old students were randomly selected, with this age group delimiting the survey universe downwards, and 50 twenty-fourth year-old students who demarcated the universe upwards. The groups generally differ in life experience and, although not necessarily, in cognitive evolution.

Although exist pre-tests using cognitive techniques, the research used a standardized psychometric pre-test questionnaire (Bolten, 1993), that indicated the validity through quantification. In this questionnaire, the student rated the degree of understanding of the survey questionnaire on an ordinal Likert scale from 0 (= very

difficult to understand) to 10 (= very easy to understand). From a cognitive-psychological point of view, this scale rated better sociolinguistic aspects (Rohrmann, 2007) and is used in school examinations, so the college students have a certain familiarity with this type of assessment.

With the questionnaire modified in this way, the survey was carried out by a random sample in 76 secondary schools in Belem with $n = 800$ college students. The questionnaires were completed in self-administration by the students and without any intervention from the interviewer.

Due to the situation of a written group interview, there was no knowledge about how the interviewee completed the questionnaire. The process of detecting the items could have begun with a sensory-virtual reading of all items of a question successively presented up to the last, and then continued with the selection of the preferred item, or the item was immediately selected after reading. The second case is more predestined for the additional use of the mental visualisation of the item, while the first selection method indicates a more rational choice reorientation by the interviewee.

The experimental test to measure the capacity of the mental visualisation of item was carried out with 57 university students of the disciplines “Data Analysis” and “Scientific Methodology” of the Psychology course of the Federal University of Pará. Thirty to fifty selected participants are indicated as sufficient, which permits the detection of significant aspects and item problems (Blair & Srinath, 2008). For Perneger, Courvoisier, Hudelson, and Gayet-Ageron (2015) small samples with 5-15 participants may fail to uncover even common problems and recommend a size of 30 participants.

In order to facilitate the identification of the imagery effect, the students chose the questions “Which policy areas are you most interested in?” with a nominal scale with $n = 12$ items and “What kind of media and political propaganda most influences you?” with $n = 14$ items according to the hypothesis, that a greater number of items leads the interviewee to incorporate more the mental visualisation effect (table 1).
Table 1: Question and item-set used.

<table>
<thead>
<tr>
<th>question</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>“What kind of media and political propaganda most influences you?”</td>
<td>“newspapers” (a), “music show” (b), “radio” (c), “journals” (d), “sticker on car” (e), “television” (f), “billboard” (g), “car parade” (h), “door-to-door canvassing” (i), “visiting community centers” (j), “waving flags on the streets” (k), “public opinion results” (l), “distributed propaganda material” (m), “candidates’ debate on television” (n) “none of these items” (o)</td>
</tr>
</tbody>
</table>

Source: Henkel (2022)

The first set of items (1) – (11) was also selected in order to achieve a phonological equality with the word repetition "...policy" ("...policy", "...policy", etc.) and, thus; the influence of mental visualisation of item would, therefore; be more important. The second item-set (a) – (n) was selected because the items were represented by short (“radio”) as well as long item-words (“distributed propaganda material”) which means that the effect could influence the selection both strongly and weakly.

In order to compare the values for the ease or difficulty in visualizing the respective items (1 to 11 and a to n) with the future answer frequencies of the items, there was applied a special questionnaire with the labels “easy to imagine visually” and “difficult to imagine visually” (two-point Likert rating scale) (Visser, Krosnick & Lavrakas, 2000). The scale was used since from the language-psychological point of view specific language elements or written words are difficult to measure with interval-scaled statements and the present scale resulted in a methodically tenable measurement (Forsberg, Johnson & Logie, 2020).

The completion time for reading the question, items, and marking of the answers of the psychometric questionnaire was < 5 minutes and therefore represents a short time test and is less than the recommended time for filling out psychometric experimental questionnaires (Sutin & Robins, 2007).

The relevant literature on psychometric tests to measure the mental visualisation generally does not indicate a high validation, as the items do not involve contextualizing with the interview situation, questions and represents only the item's lexicographic aspect (Clark & Maguire, 2020). In addition, responding to psychometric questionnaires gives the respondent the expectation of answering a very important scientific question, but one that is very simple (Schwitzgebel, 2002). The results are often assumed to confirm preestablished theories but also may refute inaccurate ratings (Woisetschläger,
Eschweiler & Evanschitzky, 2007). In experiments, the interviewee knows that he is the subject and represents a single-source bias like the Hawthorne-effect (Brannigan & Zwerman, 2001), which can influence the motivation of the participants. Since students usually do not take part in experimental studies during lecture time, it is possible that they feel praise for their participation which may cause an exaggerated rating (aggravation effect), an overvaluation of the rating score, or a downplaying, leading to an undervaluation (Druckman & Kam, 2011). These biases are not necessarily intentional, but rather unconscious acts, maybe are applied only by a few participants within the normal within-group variability and due to its probability are difficult to identify.

On the other hand, since the psychometric test measures subjective impressions of persons and not their attitudes regarding social norms, behaviour, self-assessment, or subjective desirability, the reliability of the responses is classified as good.

A simple comparison of the survey data base and experimental data base would not indicate necessarily the reliability. The test and survey do not represent identical processes, because the survey is associated with bias like the interviewer´s presence, different in questionnaire length, and so forth. On the other hand, the experimental tests, due to the reduction to only a few testable hypotheses, the biases are limited to the hypothesis components (Wilholt, 2009). In addition, even an almost simultaneous beginning of test data and survey data collection (t_{test} \approx t_{survey}) therefore does not eliminate the problem of measurement invariance across time (Little et al., 2019).

In addition, according to test theory sensu stricto, data correlation between different data bases like survey and experimental tests differ significantly (Zimmerman & Williams, 1977) and produces correlation errors like extreme values, which do not occur when data from only one survey database is compared to one another (Andrews, 1984). Therefore, it would be better to use the expression experimental test – survey correlation to explain the results.

Since the survey experimental test in this study analyses independent groups (survey population and experimental test group from different universes), the expression survey population – experimental control group is more adequate. Therefore, the methodological design is based on two statistical models: the random-effects model (survey) and the fixed-effect model (experimental group) and is also known as meta-analysis (Borenstein, Hedges, Higgins, & Rothstein, 2009; Cooper, Hedges, & Valentine, 2019). However, despite the critics, the model combines a broad and deep understanding of context through a variety of participant perspectives (figure 1).
5 RESULTS AND DISCUSSION

5.1 PRE-TEST ANALYSIS OF QUESTION AND ITEM COMPREHENSIBILITY

When analyzing the ease comprehensibility and answerability of the questions and items in the pre-test, it must be considered that some members of the upper extreme group of the survey population, due to their age and life experience, know certain topics of the questionnaire better, while those from the lower extreme group do not. However, the content of the question about "...most interested...?" ("agricultural policy"; "sports policy"; "environmental policy", etc.) represents areas that are discussed at school, but also presented in particular in the tele media environment, and, therefore; must be known by all pre-test participants.1

When it comes to the question of the influence of propaganda during election times, older respondents may also give “true” answers because they have participated in these past events and can more recall it with more ease from long-term memory.

Regarding validation aspects, the questionnaire was implemented with efficiency (no recall by the participants how to fill it out), followed a linguistic agreement (there was no nonresponse) and, therefore; represents acceptable reliability. The ease of all survey's questions was rated at 6.8 on the 10-point numerical scale. The questions “...most interested...?” and “...most influences...” received a rating of 7.0 respectively 6.5. This means that using the visualization would make it easier to answer the last question in particular.
The difference between the question "...more interest...?", which is considered more understandable, and the question "...more influences..." can hypothetically be explained by the number of items (12 items against 15 items) or, a greater number of items which makes the answer more difficult. However, the phonological standardization of the items with “...policy” may also have made the comprehensibility easier in the decision-making process.

Although some items of the question “... most influenced ...” are characterized by physical aspects (“radio”, “television”, “magazines”, “newspapers”, etc.) and, therefore; by one-dimensionalities, the presence of items consisting of more (logically) connected dimensions difficult the comprehensibility (\( \square = 51,6 \% \), respectively \( \square = 59 \% \)). Also, it can be difficult to remember how a past event, in this case an election, affected someone (figure 2 and 3).

**Figure 2: Easy of item understanding of "...most interested...?" question**

![Figure 2](image)

Source: authors

**Figure 3: Easy of item understanding of "...most influences...?" question**

![Figure 3](image)

Source: authors

Referring to the relation between item comprehensibility and item response frequency, different situations arise due to the correlation coefficients. The first question
(“…most interested…” shows a strong correlation \( r (09) = .61, p > .048 \) and indicates that the values are not random and, thus, are dependent. However, the statistical power is low due to the small number of cases in the study \( n = 11 \), but indicates, that increases or decreases in one variable do (significantly) relate to increases or decreases in the second variable. The second question (“…most influenced…”) shows a medium-strong correlation \( r(12) = .40, p > .159 \) and means that they are also, but less dependent. It is impossible to determine what caused the different ratings between the questions. It must be noted that the values represented cognitive aspects (validation, item selection) and not social or compartmental actions.

5.2 THE RELATIONSHIP BETWEEN MENTAL VISUALISATION OF ITEM AND ITEM FREQUENCY

The psychometric experimental test of the question “…most interested…” shows an average easy mental visualisation of the items of \( \square = 52 \% \) and for the question “…most influences…” such an average of \( \square = 57 \% \). To declare the items “agricultural policy”, “regional policy”, “monetary policy” and “foreign policy” as difficult to visualize \( (\square = 23 \%) \) is not based on a lack of knowledge concerning the physical dimensions of the items, because of their regional identity the interviewees know aspects associated with agriculture like "cassava", "mango" or “cattle ranching”. However, they do not know and maybe cannot utilize information in the national television reports about “policy” for agriculture, regional planning, financial aspects, and so forth, in context with their local life. Therefore, it must be the “…policy” aspect that is more difficult to construct regarding imaginability. The respondent can also disregard the dimension “…policy” and only consider the principal dimension such as “…security…”, “…health...” or “education...”, and now analyzing the items with their daily life user experience. This means, that the respondent can visualize and analyse the item structures assembled or decoupled.

The second question “… most influences…” is composed of more logically connected item words. With \( \square = 57 \% \) on average the visualizable is slightly higher, than the items of the first question, because of the one-dimensionality of some items (“newspapers”, “radio”, “journals”, “television” or “billboard” for example), while other has extended dimensions (“candidates” + “debates” + “on” + “television”). However, the average of unidimensional and multi-dimensional items is equal \( (\square = 58 \%) \). Therefore,
there must still be another additional component that supports an easy visualization. It is to be assumed that there is a higher and easier mental visualization when the interviewee has acquired a personal experience with the item content.

A comparison between easy item visualization and item frequency shows the accompaniment of both variables (figure 4).

Figure 4: Item frequency of the question "... most interested...?" and frequency easy visual imagery, in %

\[
\begin{align*}
\text{item response frequency} & = 0.66 \\
\text{easy imaginability of item} & \quad (1) (2) (3) (4) (5) (6) (8) (9) (10) (11)
\end{align*}
\]

* Note: To identify the items, see the numbers in the text; Source: authors.

Contrary to the general direction, only items (8) and (11) show an opposite tendency. However, due to the large differences, it is visible that the easy mental visualisation of the item does not solely explain the selection for the items, and that there must be, in addition to this effect, other not yet known, maybe a rational choice that influences the interviewee. However, the correlation between the mental visualisation and the frequency of items expresses a very strong correlation \( r (9) = .66, p < 0.05 \).

There is also a strict relationship between the item response frequency and the easy imagery of the item for the question “...most influences...” (figure 5).

Figure 5: Item frequency of the question "... most influences..." and easy mental imagery, in %

\[
\begin{align*}
\text{item response frequency} & = 0.65 \\
\text{easy imaginability of item} & \quad (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n)
\end{align*}
\]

* Note: To identify the items, see the numbers in the text; Source: author, 2021.
Figure 5 also shows the accompaniment of easy mental visualisation of item and item frequency. Only the items (d) and (m) show an opposite relation. Again, the correlation value between item response frequency and imagery shows a very impressively high relationship \((r(12) = .65, p = 0.05)\).

Methodological conflicts or data quality aspects between the collection of survey data and experimental data should be excluded as explanations for the high correlation values. The participants of the survey experimentation were unaware of the survey population and future comparison.

In contrast to the social-behavioral sciences, which assume (semi-)stable subjective social norms when analyzing people involved in social and interactive scenarios such as word decoding, item comprehensibility, item selection, decision making, and so forth, the brain sciences understand effects in this moment of information transfer (Novembre & Iannetti, 2021) like short term correlations in functional related brain areas (Biswal et al., 2010). However, neuroscience is not yet ready to show the exact relations (Vul, Harris, Winkielman, & Pashler, 2009). Therefore, the correlations seem to show a stochastic result and the high correlations seem to be occasionally related to items and not depend on a specific structure and therefore the effect is unpredictable.

Hence regarding the hypothesis, there are no clear explanations. The acceptance or rejection of the hypothesis that phonological standardized items influence the choice less than non-standard items cannot be expressed with the differences in the correlations \((r = 0.66; r = 0.65)\).

Also, the second hypothesis that many items of a scale favor the influence of the effect, which can theoretically be explained by the greater cognitive effort required to read and process more items, cannot be confirmed either, especially since the data shows the opposite or the greater number of items, the smaller the influence.

6 CONCLUSION

Although there are studies that examine the relation between the mental visualisation of an answer item and his response frequency of in surveys, the causes cannot be explained exactly. From a psychometric point of view, the comprehensibility of items can be measured to different degrees. The study cannot clarify, on what on what the comprehensibility depends, be it the semantic nature of the item, number of syllables,
dimensionality (one or more dimensions), socio-linguistic use, item length, empirical knowledge of the interviewee, among other aspects.

A single-choice question eliminates the influence of a few psycholinguistic effects, however, not the effect of mental imagery of the item. The research indicate that each structural element of an item word sources an influence and creates an effect, which makes the identifying process of these special effects impossible.

For public opinion research the results shows that the items can be changed or substituted to achieve better understandability, as well as differentiation from one another, but still represents a latent variable.

The high correlation values indicate that in decision-making processes such as the selection of answers, imaginary or mental representation of the item are always undesirably generated. This also means, that an answer obtained through a rational choice process, interpreted as only context-bounded to question and item and characterized as a true answer without bias, can, but does not need to be influenced by elements non-contextualized such as the item’s imaginary. The results show that items are always visualizable, or the compressibility of a word or phrase is only achieved by the mental visualisation, although at different intensities, but that their inclusion in the decision-making process or anatomy of a functional response cannot be proven through selection. Even a precise and well-defined methodological design between pre-test and survey experimentation does not identify the real relation and thus, the empirical confirmation of the influences of the mental visualisation.
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