

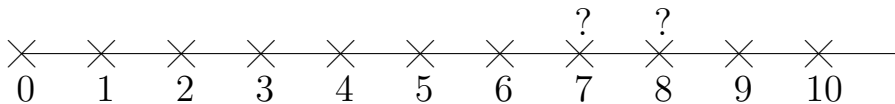
Why Ovals in Eliciting Intervals?

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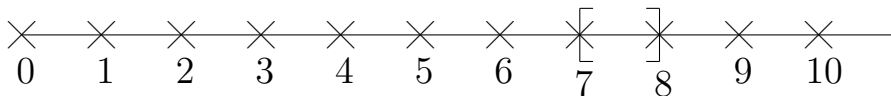
1. Need to elicit intervals

- People's opinion is usually elicited by asking people to mark a point on a scale.
- This us how, e.g., students evaluate their instructors.
- In some cases, people are absolutely certain about their marks.
- However, in many other cases, they are not so sure.
- For example, a person may hesitate where to mark a good but not excellent service by 7 or 8 on a 0 to 10 scale.
- Since the usual scale only allows one mark, the person will put either 7 or 8.



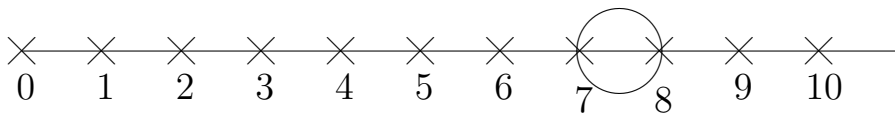
2. Need to elicit intervals (cont-d)

- We could get a more adequate understanding of the people's opinions if we allow the user:
 - in such situations,
 - to explicitly explain that both 7 and 8 – and thus, all the values in between – could be this person's marks.
- In other words, we would get a more adequate description of people's opinions if we allow them to describe their opinion:
 - by intervals,
 - and not just by the numerical values.



3. Eliciting intervals is not easy

- Eliciting intervals would be beneficial for processing people's opinions.
- However, people are not accustomed to marking intervals.
- Therefore, they are reluctant to do it.
- To make this task easier for users, researchers tried different approaches.
- Interestingly, a successful approach came when researchers decided to elicit a 2-D figure.
- Namely, they elicit an oval whose intersection with the straight line provides the desired interval.



4. Why?

- A 2-D oval contains more information than the resulting interval.
- So why is it easier for the users to provide ovals than to directly provide intervals?

5. Our explanation

- Psychologists have found that the perceived complexity of a curve increases with the number of vertices.
- Smooth curves like ovals are the simplest.



- On the other hand, an interval – with 2 vertices – is much more complex.



- This explains why it is easier for people to draw an oval than to directly draw an interval.

6. References

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- J. Wilder, J. Feldman, and M. Singh, “Contour complexity and contour detection”, *Journal of Vision*, 2015, Vol. 15(5), No. 6, pp. 1–16.

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