

Do Collaborators' Annotations Help or Hurt Asynchronous Analysis?

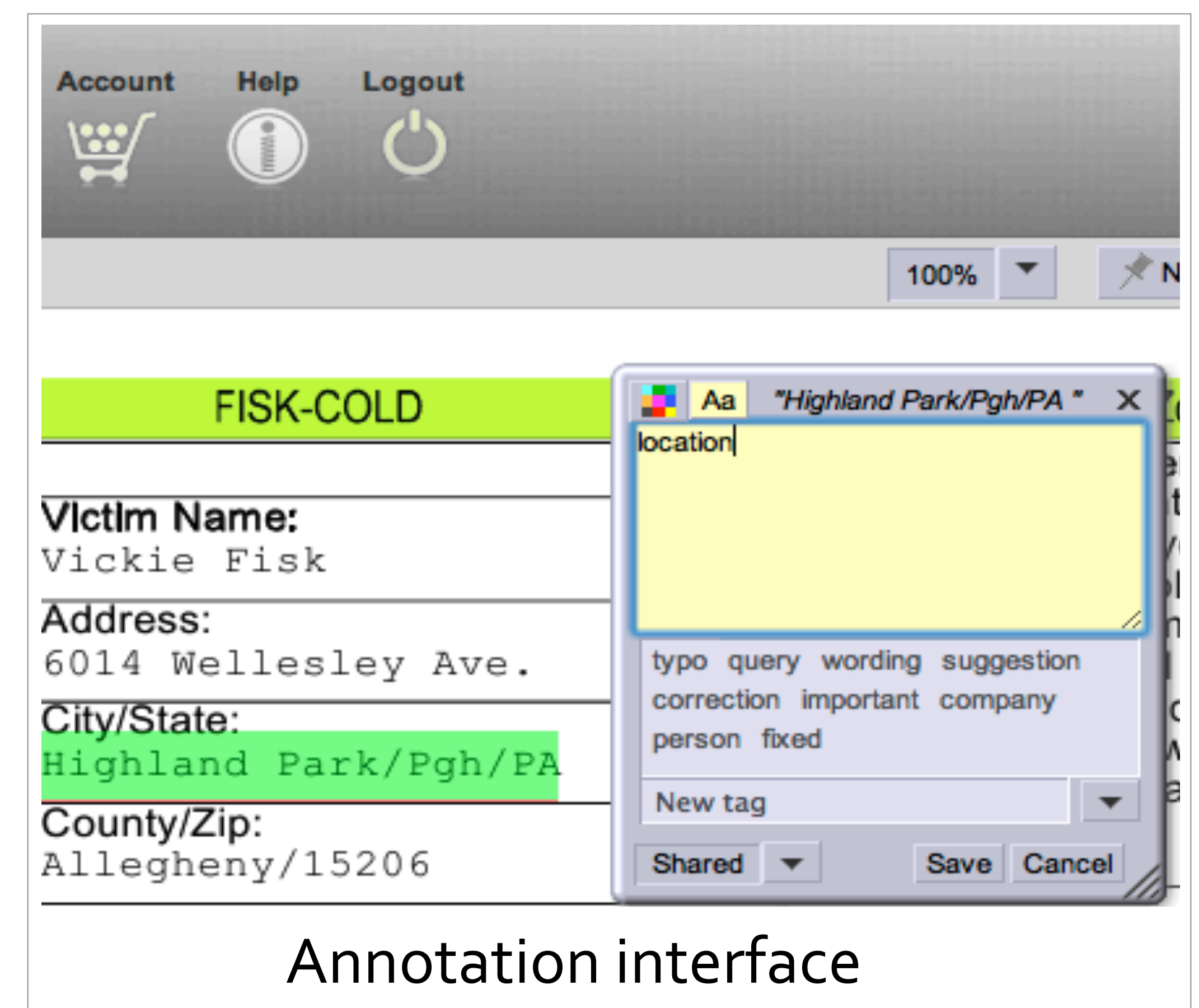
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Summary

Investigations of crimes often require analysts to work collaboratively on large amounts of information. The distributed nature of this type of collaborative work makes effective information sharing difficult. We studied how people annotated documents for an asynchronous collaborator, and whether those annotations helped their collaborator or not. From two laboratory experiments, we found that annotations pointing to connections among documents are the most useful annotations.

Method

- Each participant worked alone in his or her session as a detective who tried to solve a serial crime.
- Participants in Study 1 were told that a partner would come later to continue their work. They annotated documents for their partners and tried to identify the criminal.
- Participants in Study 2 were told that a partner had already worked before them. They tried to identify the criminal and completed a survey with questions about the crime cases.
- We coded all the annotations created by participants in both studies, and analyzed Study 2 participants' answers to the survey as additional performance measures.



Study 1. How do analysts annotate documents?

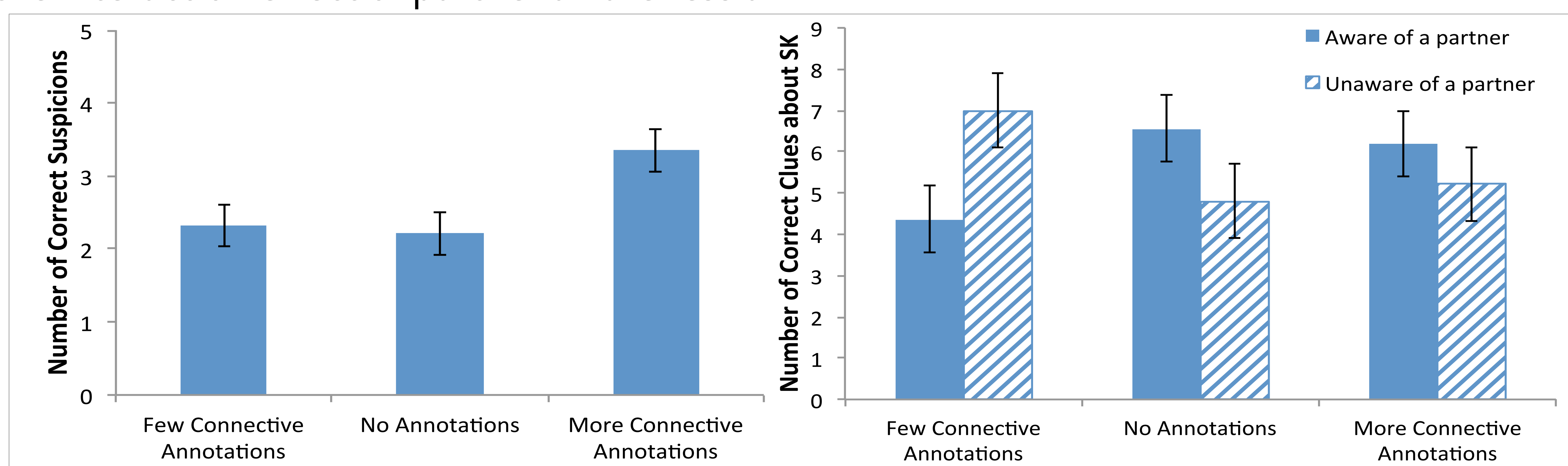
Participants created four types of annotations when they were reading the crime documents.

Connective	•pointed to linkages across two (or more) documents : <i>"This guy was also in Fisk case"</i>
Evidence	•mentioned weapons, motives, time of crime... : <i>"Reduced salary could be a motive"</i>
Suspect	•mentioned suspicious individual : <i>"Mr. Talamo is a possible suspect"</i>
Pattern	•marked a repeating pattern or an anomaly in a pattern : <i>"Same weapon"</i>

Conclusion: Connective annotations were most highly correlated with solving the case ($p < .01$).

Study 2. Are those annotations helpful?

- Viewing more connective annotations improved performance of the second analyst ($p=.01$ for number of correct suspicions reported).
- Participants who were more aware of their partners were more influenced by existing annotations ($p=.06$ for the interaction effect of partner awareness and annotation condition).



Future work

Annotations from other collaborators are not always helpful. Future tools should encourage analysts to create more effective annotations, or direct their attention to higher quality annotations.