

neonion – Combining Human and Machine Intelligence

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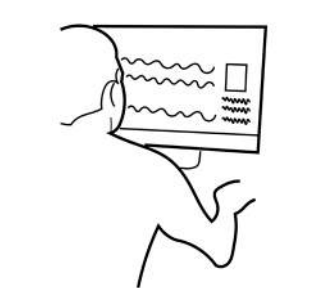
Motivation – Reading Strategies

Reading is a central knowledge activity in scholarship. Active reading combines critical thinking with learning and involves the annotation of documents by highlighting text, underlining text, or adding comments. Annotations are created by employing different reading strategies.

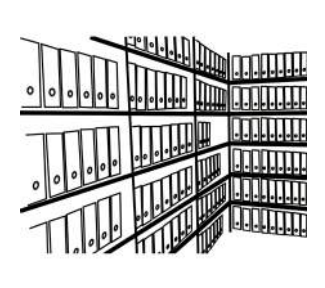
Active Reading refers to the annotation of documents for identifying useful and potential information and knowledge.



Close Reading: In-depth reading of documents which combines critical thinking with learning.



Hyper Reading: The screen-based, computer-assisted reading is characterized by activities such as filtering and skimming.



Machine Reading: The automatic, unsupervised analysis of text, for example for detecting named entities.

Annotation Concept

Semantic Annotation Concept

The current prototype allows for adding semantic annotations to documents. Users are able to select text elements and describe them with a fixed vocabulary. By providing an intuitive user interface the prototype implicitly supports users in annotating texts. The annotation process consists of four steps: reading, annotating, creating references to existing resources, and adding additional information.

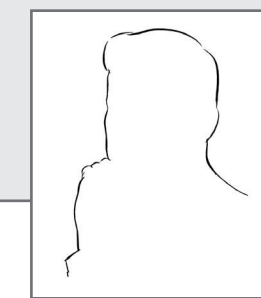
1. Reading

John Fitzgerald Kennedy, commonly known as **Jack Kennedy**, was an American politician. Kennedy defeated **Richard Nixon** in the 1960 U.S. Presidential Election. He was the youngest man to have been elected to the office, the second-youngest president (after **T. Roosevelt**). **Lee H. Oswald** was arrested that afternoon and charged with the crime that night. **Jack Ruby** shot and killed **Harvey Oswald** two days later, before a trial could take place. Since the 1960s, information concerning Kennedy's private life has come to light. Details of **Kennedy's** health problems with which he struggled have become better known, especially since the 1990s. Although initially kept secret from the general public, reports of Kennedy being unfaithful in marriage have garnered much press. **Kennedy** ranks highly in public opinion ratings of U.S. presidents but there is a gap between his public reputation and his reputation among academics.

2. Annotating

John Fitzgerald Kennedy, commonly known as Jack Kennedy, was an American politician. **Kennedy** defeated Richard Nixon in the 1960 U.S. ...

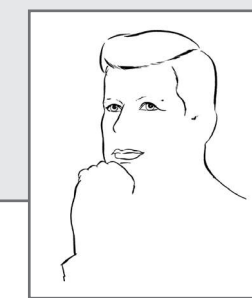
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<...>
a foaf:Person ;
foaf:name „John F. Kennedy“ .
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3. Referencing

John Fitzgerald Kennedy, commonly known as Jack Kennedy, was an American politician. **Kennedy** defeated Richard Nixon in the 1960 U.S. ...

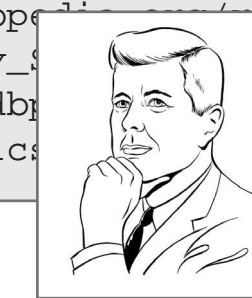
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foaf:name „John F. Kennedy“ ;
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4. Extending

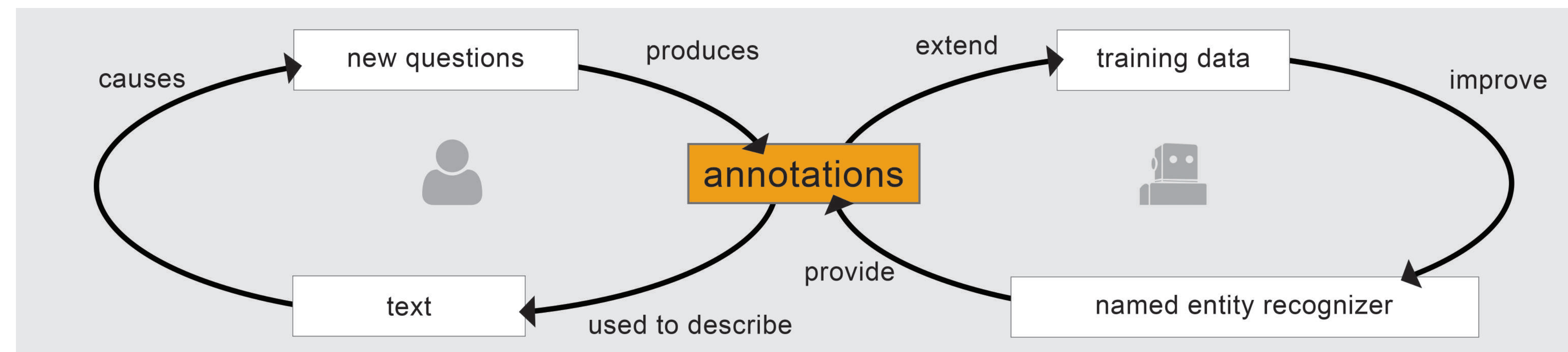
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<...>
a foaf:Person ;
foaf:name „John F. Kennedy“ ;
owl:sameAs <http://dbpedia.org/resource/John_F._Kennedy> ;
ns0:relative <http://dbpedia.org/resource/Eurice_Kennedy_Shriver> .
<...>
a foaf:Person ;
foaf:name „Eurice Kennedy Shriver“ ;
owl:sameAs <http://dbpedia.org/resource/Eurice_Kennedy_Shriver> ;
ns1:founder <http://dbpedia.org/resource/Special_Olympics> .
```



Mixed-Initiative Annotation Process

The prototype aims to interrelate the reading strategies of hyper and machine reading by employing a mixed-initiative approach. The automatic annotation module combines Stanford NER predictions with annotation data generated by the user. User data are integrated continuously during the annotation process and hence immediately improves the NER predictions.



He, **Jack Kennedy**, was an American politician who served as the 35th President of the United States. **Kennedy** defeated Richard Nixon in the 1960 U.S. Presidential Election. At age 43, he was the youngest man to have been elected to the office, the second-youngest president (after **T. Roosevelt**). **Lee H. Oswald** was arrested that afternoon and charged with the crime that night. **Jack Ruby** shot and killed **Harvey Oswald** two days later, before a trial could take place. Since the 1960s, information concerning **Kennedy's** private life has come to light. Details of Kennedy's health problems

Kennedy----Person

recommended by neonion
accepted by clmb

T. Roosevelt----Person

recommended by neonion

Oswald----Person

recommended by neonion

Kennedy's----Person

created by clmb

accept concept

reject concept

edit concept

add new concept

positive feedback

negative feedback

neg+pos feedback

negative feedback

named entity recognizer

Study on Scholarly Annotation Practice

In this research project we work with scholars from History of Science. That allows us to carry out regular user testing with early prototypes. We are conducting a series of semi-structured interviews. Our preliminary results provided first requirements for the annotation software:

- hide the complexity of semantic technologies,
- make automatic annotations easy to use,
- allow for reusing annotations and annotation sets, and
- support collaborative annotation.

1

Build an easy to use manual, semantic annotation functionality.

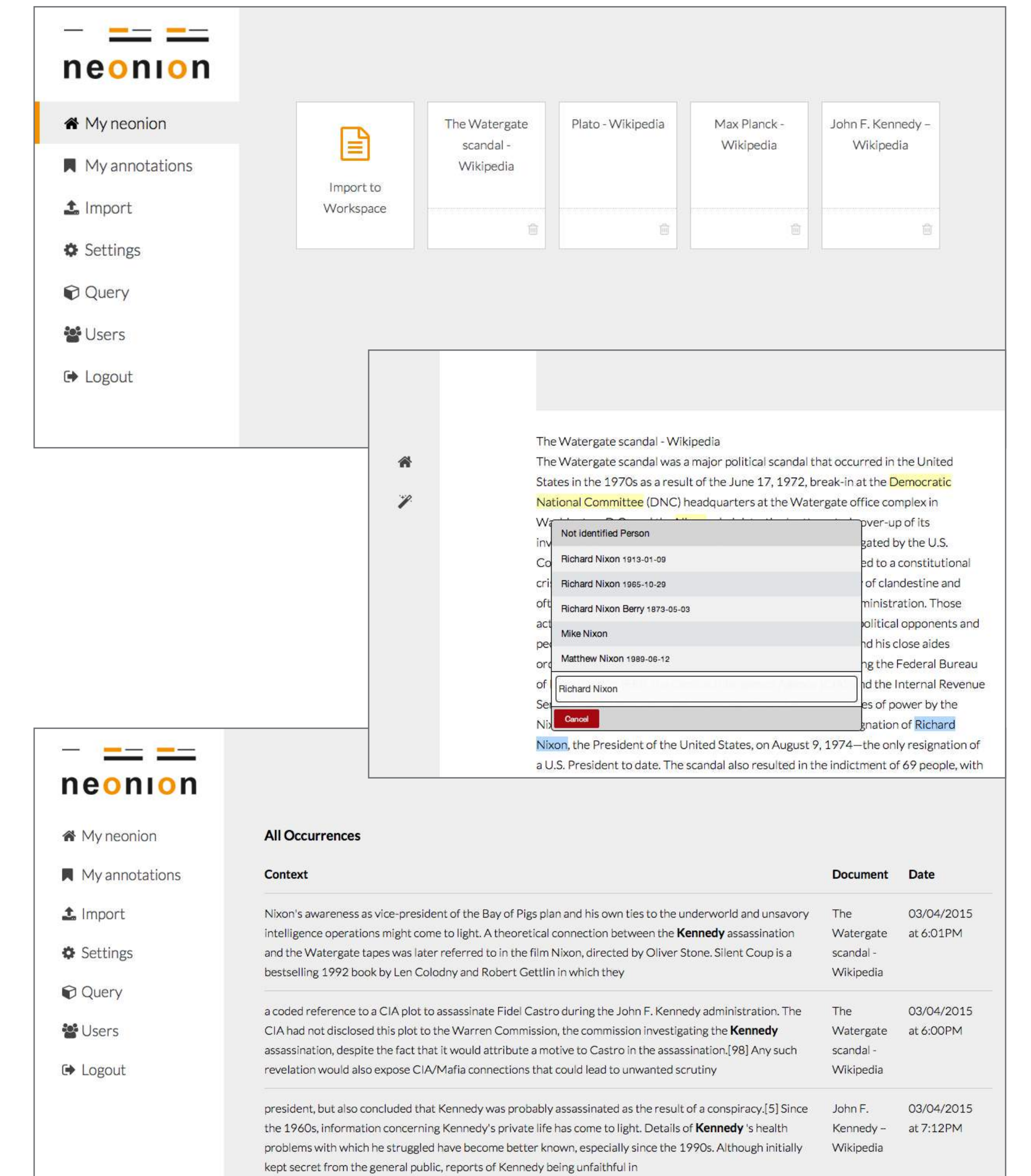
2

Integrate existing automatic annotation modules such as the Stanford Named Entity Recognizer.

3

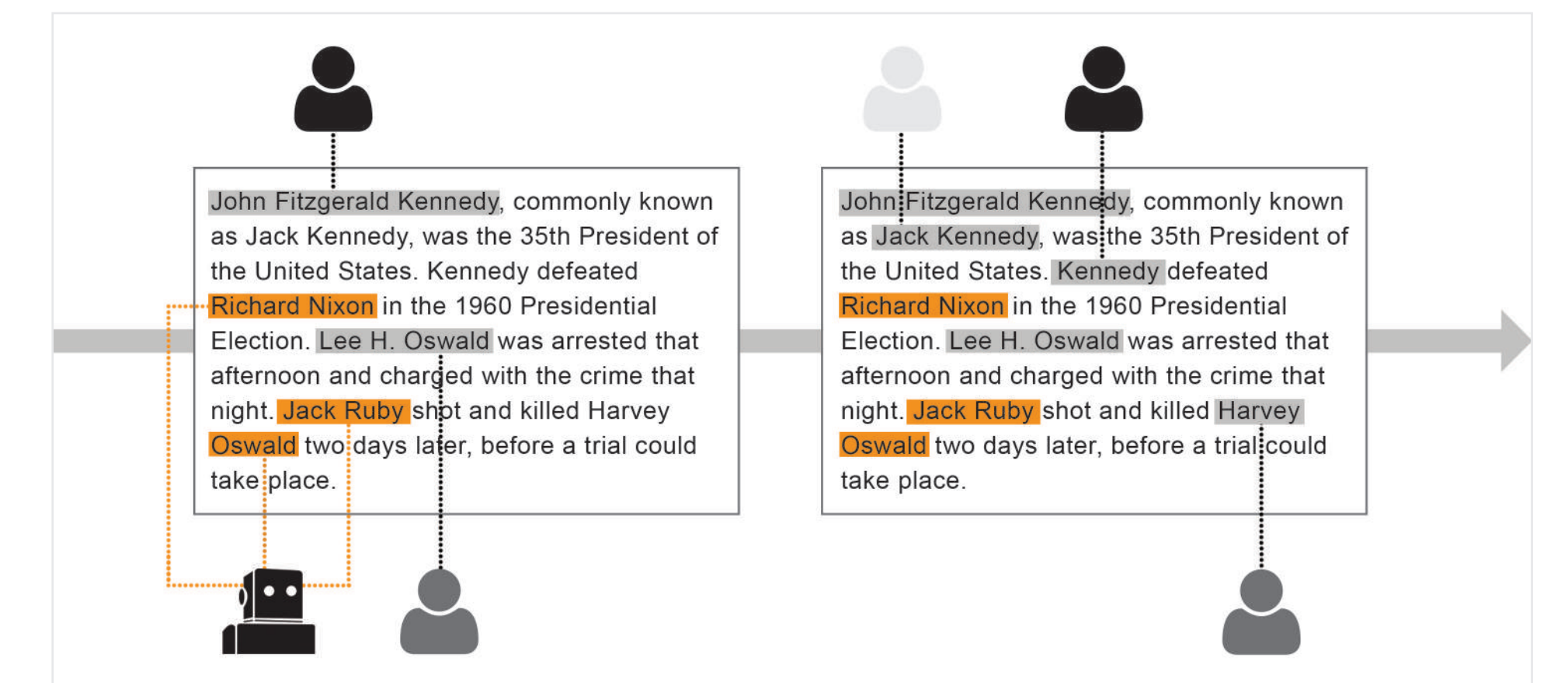
Create an environment that fosters collaborative, scholarly annotations.

User Interface



Outlook - Collaborative Annotations

In the future, users can annotate together on shared documents. This allows us to investigate existing collaborative knowledge creation processes and we can explore the discourse about the document between different scholars.



Further Contact

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