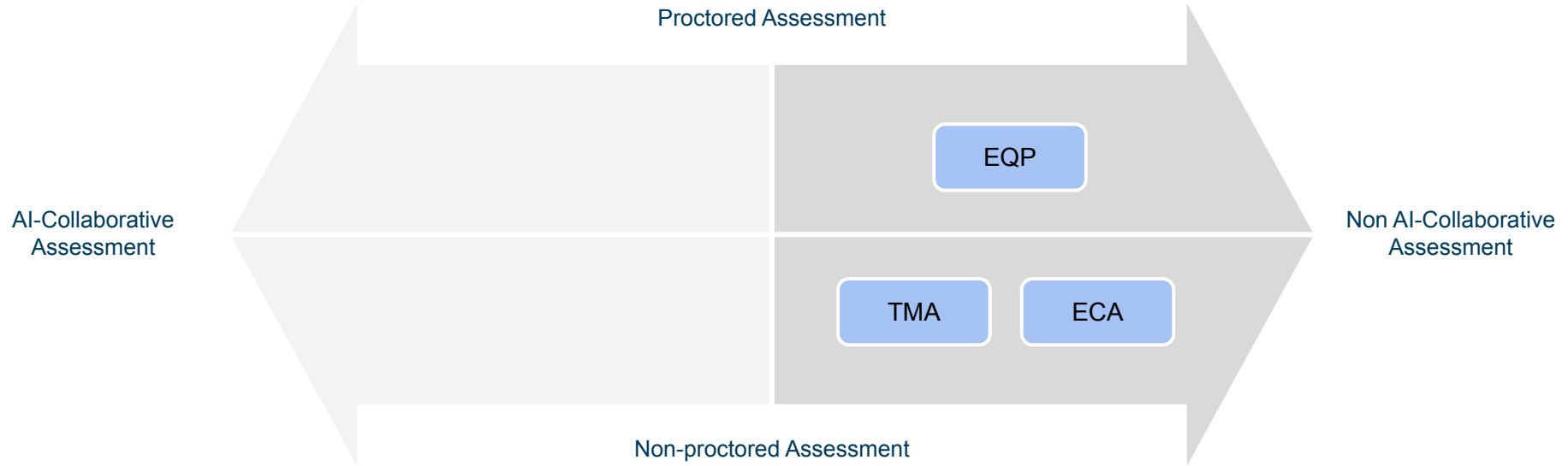


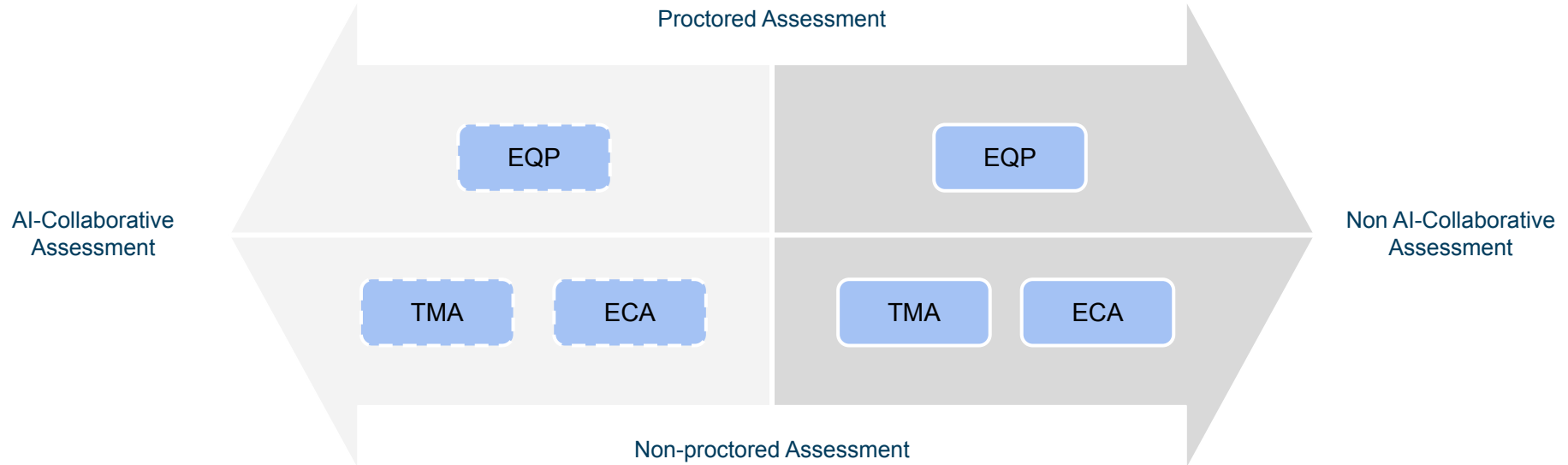
How to coexist with ChatGPT in assessments

AI-collaborative assessment design
by Dr Grandee Lee

AI-Collaborative Assessment



AI-Collaborative Assessment



LLMs are universal approximators



When sufficient, relevant data is given



If the task is clearly defined,
it can be solved

LLMs are universal approximators

When sufficient, relevant data is given

If the task is clearly defined,
it can be solved

Once the question can be articulated by the students,
they should be able to find the answer.

Figuring out the question should be the direction in
question design.

Q&A is the simplest and most abundant dataset.

Most of the higher order question are a regurgitation
of the past experience, i.e. recall



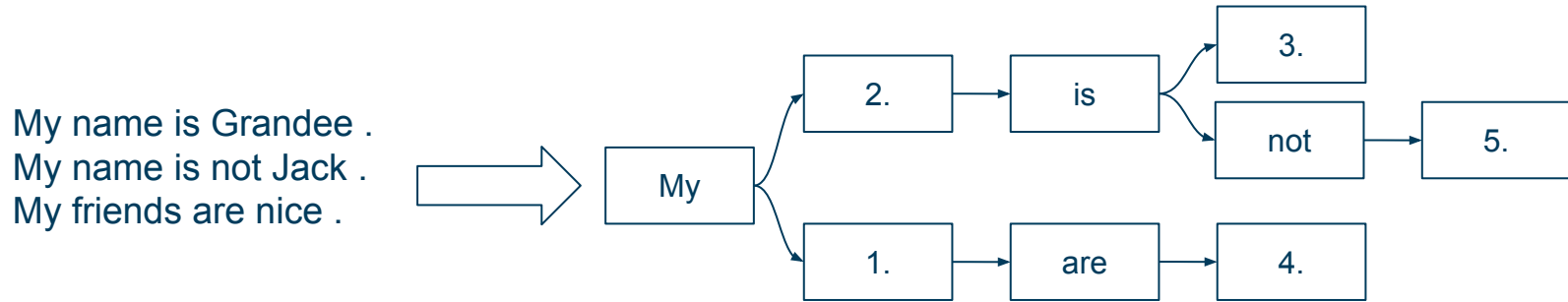
What is a bi-gram language model?

- (A) A model that predicts the probability of a word based on the previous two words
- (B) A model that predicts the probability of a word based on the entire history of the conversation
- (C) A model that predicts the next word in a sequence based solely on the previous word
- (D) A model that predicts the frequency of a word in a text



How to implement a bi-gram language model?

Imagine the following sentences are your entire corpus.
Complete the bigram transition diagram.



A 1. name 2. friends 3. Jack 4. nice 5. Grandee

B 1. friends 2. name 3. Grandee 4. nice 5. Jack

C 1. nice 2. name 3. friends 4. Grandee 5. Jack

D 1. nice 2. friends 3. nice 4. Grandee 5. Jack

E 1. friends 2. name 3. nice 4. Jack 5. Grandee

F 1. friends 2. name 3. not 4. nice 5. Jack

ChatGPT's response

Based on the bigram transition diagram provided and the sentences from your corpus, let's assign the corresponding words to the diagram labels:

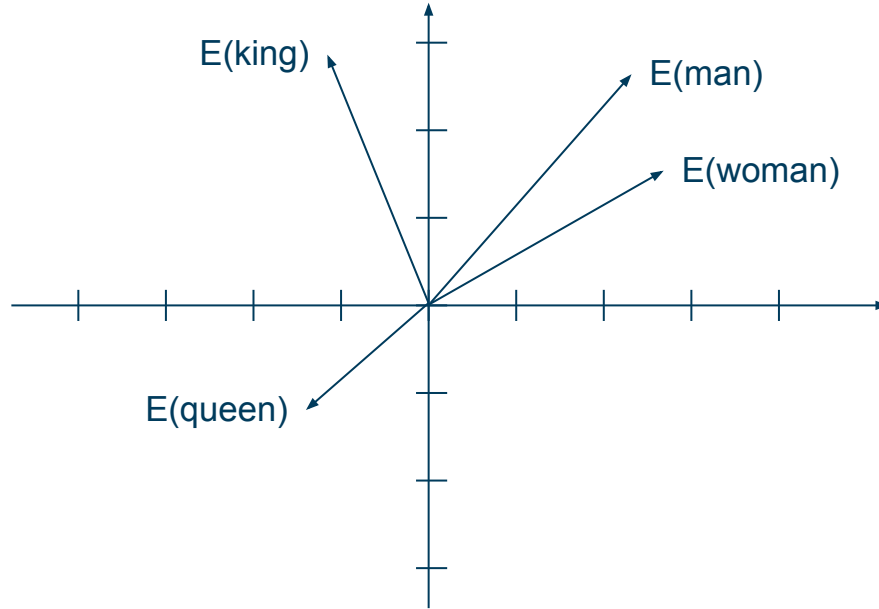
1. Due to the transitioning from "My" to "are" in a separate sentence ("My friends are nice."), the word that corresponds to 1 is "friends."
2. From "My" to "is" involves both the sentences involving "name" - "My name is Grandee." and "My name is not Jack." Thus, the word that corresponds to 2 is "name."
3. The word "not" comes directly after "is" in the sentence "My name is not Jack." so 3 corresponds to "not."
4. Following "are" in the sentence "My friends are nice." is the word "nice," thus 4 corresponds to "nice."
5. Finally, following "not" in the sentence "My name is not Jack." is "Jack," so 5 corresponds to "Jack."

Therefore, the correct option that matches this assignment is:

F) 1. friends 2. name 3. not 4. nice 5. Jack

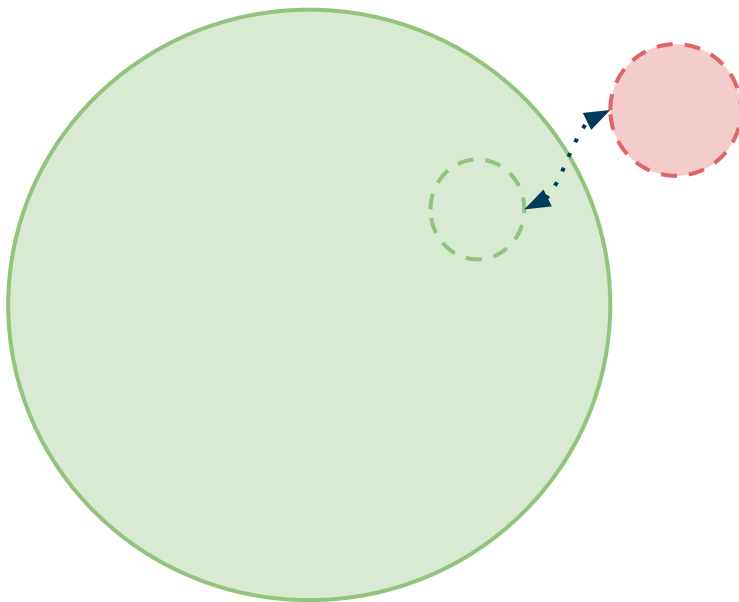
Imagine without the other usage of 'queen' in the training corpus, where will 'E(queen)' be? (assuming each grid is 1 unit long) choose the correct option:

- 1) 1, 0
- 2) 2, 0
- 3) -2, 2
- 4) -1, 2
- 5) -1, -2
- 6) -2, -2



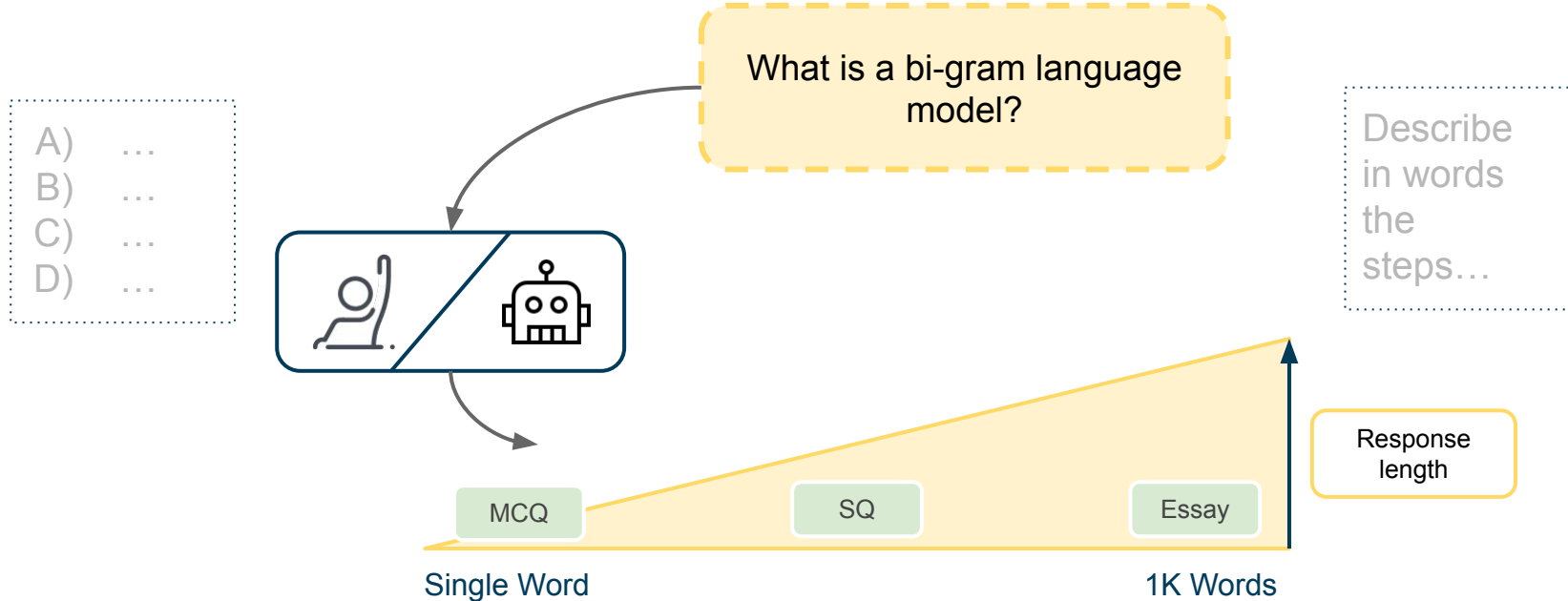
An economic argument ...

First we must acknowledge that there is a huge unexplored problem space, because we can be really creative in our ways of asking questions, and be abstract.

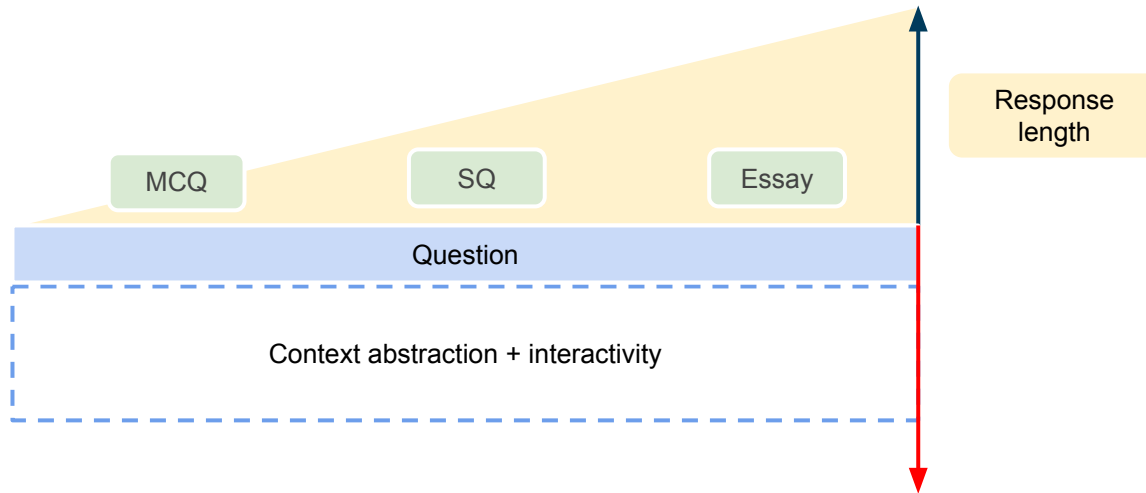


- With sufficient data, LLMs can solve any problem.
- However, considering the effort to create such a dataset for training, and the possible abstraction space, it may not be worthwhile.
- It is more feasible for students to bring that abstract question to the well-explored space. That is the assessment.
- For off-the-shelf LLMs, it's not profitable to pursue such space.

Response length



Question depth



Assumption: longer response show student's understanding, may not be true now, less true in the future and harder to check.

Thank You :)

grandee.lee@suss.edu.sg