



AI for Everyone?

Half-Days 2024

Matthew Lee, Yaoundé, Cameroon

Computers by Frank Herbert

À quoi servent de telles machines, en réalité?

À accroître le nombre des choses que nous pouvons faire sans y penser.

Voilà le vrai danger... les choses que nous faisons sans y penser.

What do such machines really do?

They increase the number of things we can do without thinking.

Things we do without thinking — there's the real danger.

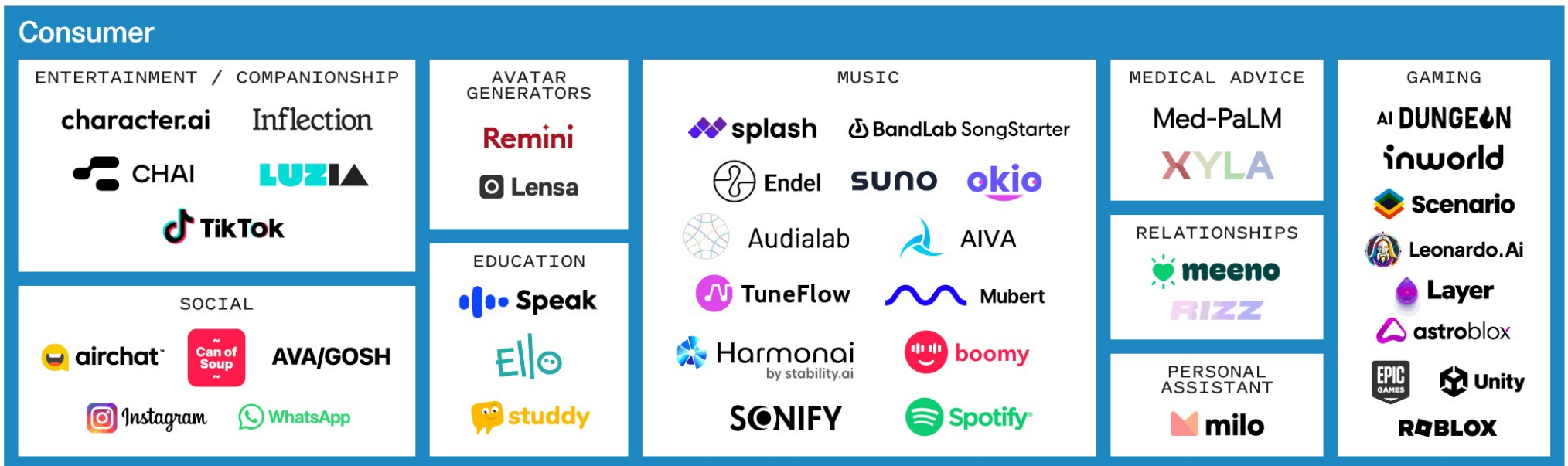


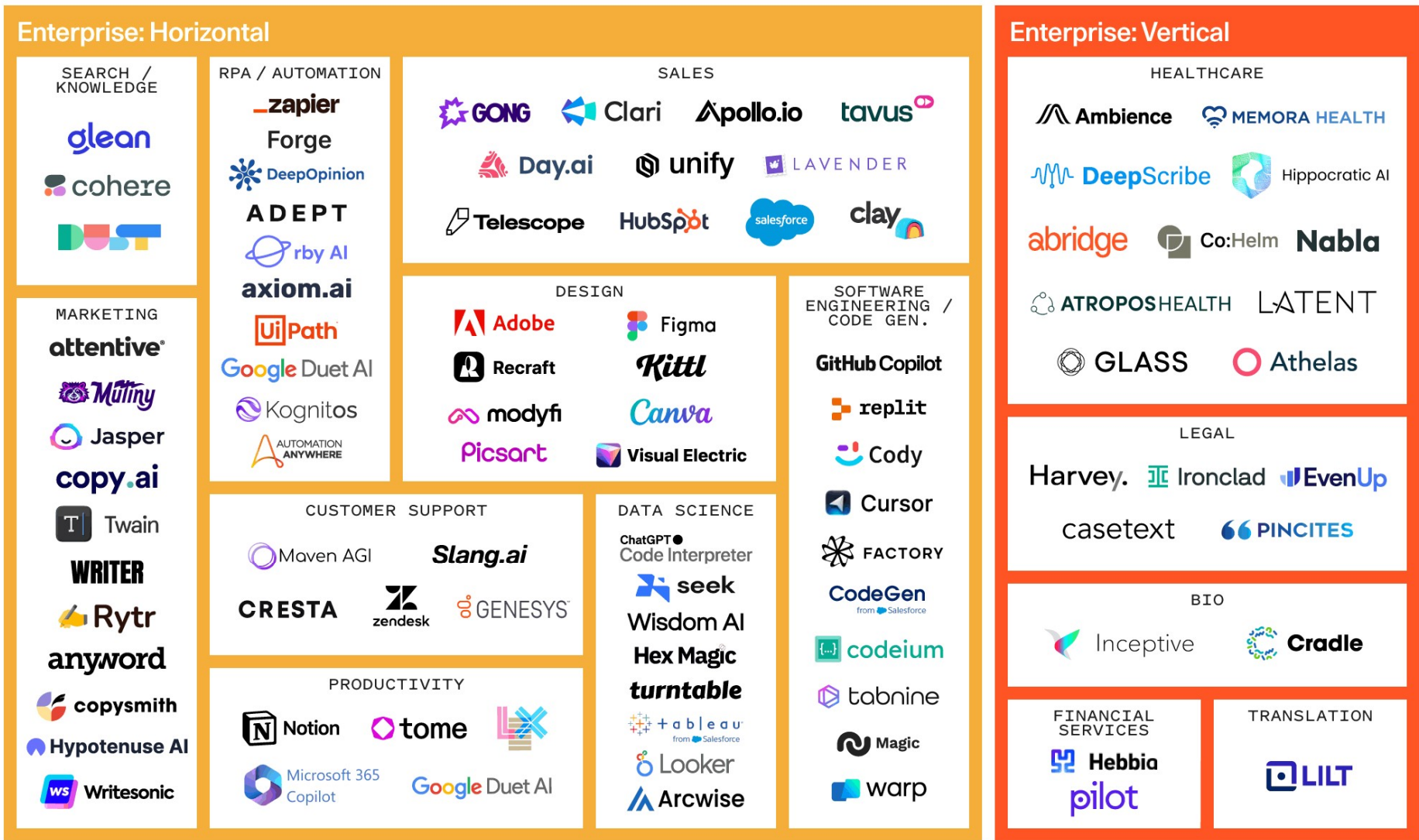
Generative AI Providers

The Generative AI Market Map v3



A work in progress





Source: <https://www.sequoiacap.com/article/generative-ai-act-two/>

Prosumer

GENERAL SEARCH / KNOWLEDGE

ChatGPT ●

ANTHROPIC
Claude

perplexity

YOU.com

Google Bard

Poe

VIRTUAL AVATARS

synthesia

D-ID

AUTONOMOUS AGENTS

● Open Interpreter

Auto
gpt

BabyAGI

VIDEO CREATION / EDITING

runway

VEED.IO

PIKA LABS

captions

descript

loom

Pr
Adobe
Premiere Pro

dream by WEMBO

TikTok

VOICE

ElevenLabs RESEMBLE.AI

WELLSAID MURF.AI

PlayHT coqui descript

3D

mirage

Spline

Physna

BROWSER COPILOTS / AUTOMATION / ASSISTANT

Rewind

MULTI-ON

Minion AI

newCOMPUTER

IMAGE CREATION / EDITING

Figma MidJourney

stability.ai Ideogram Lexica

PLAYGROUND Adobe Firefly

Picsart PhotoRoom



Programs, Machine Learning, & Deep Learning

What's the difference?



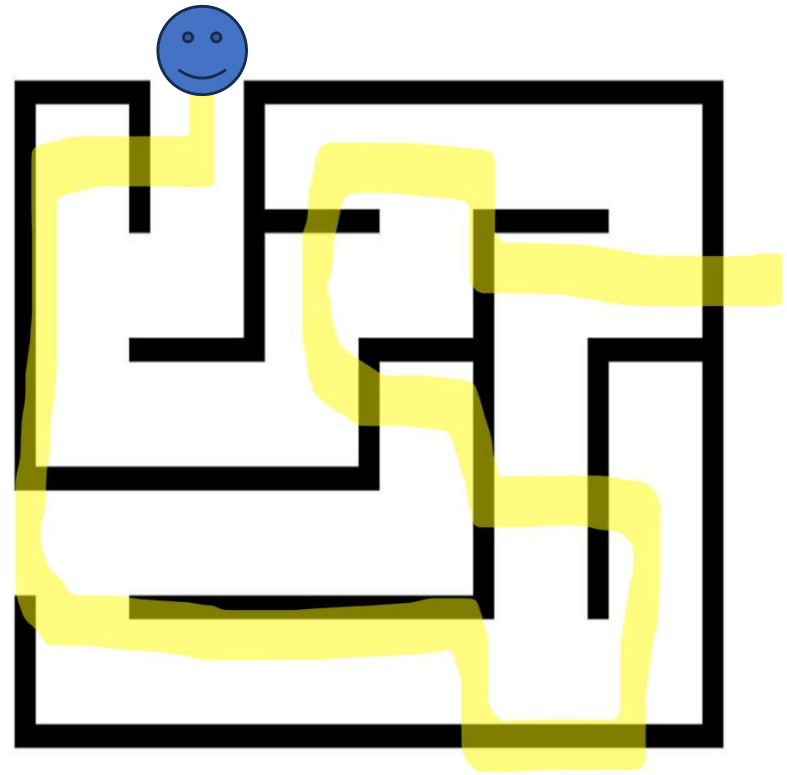
A Simplified Example



Simple Programs (No AI)

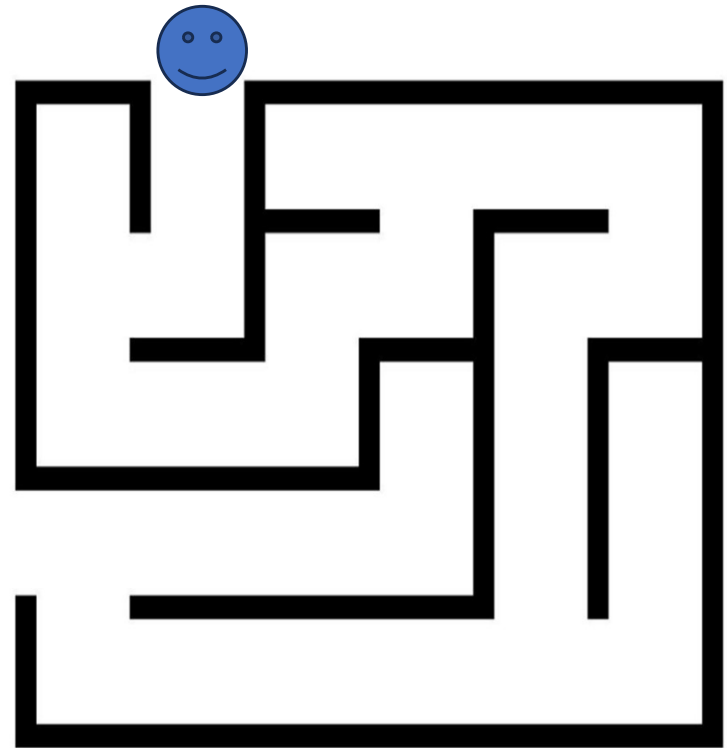
Simple programs (Predefined)

- But if you change the maze...
 - It doesn't work



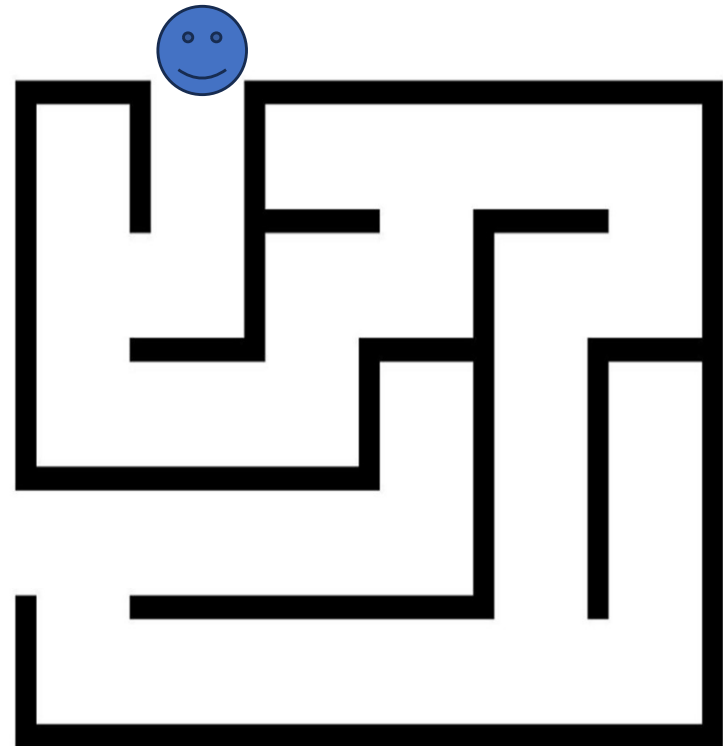
Simple programs (Algorithm)

- Follow the wall on the left.



Simple programs (Algorithm)

- Follow the wall on the right.



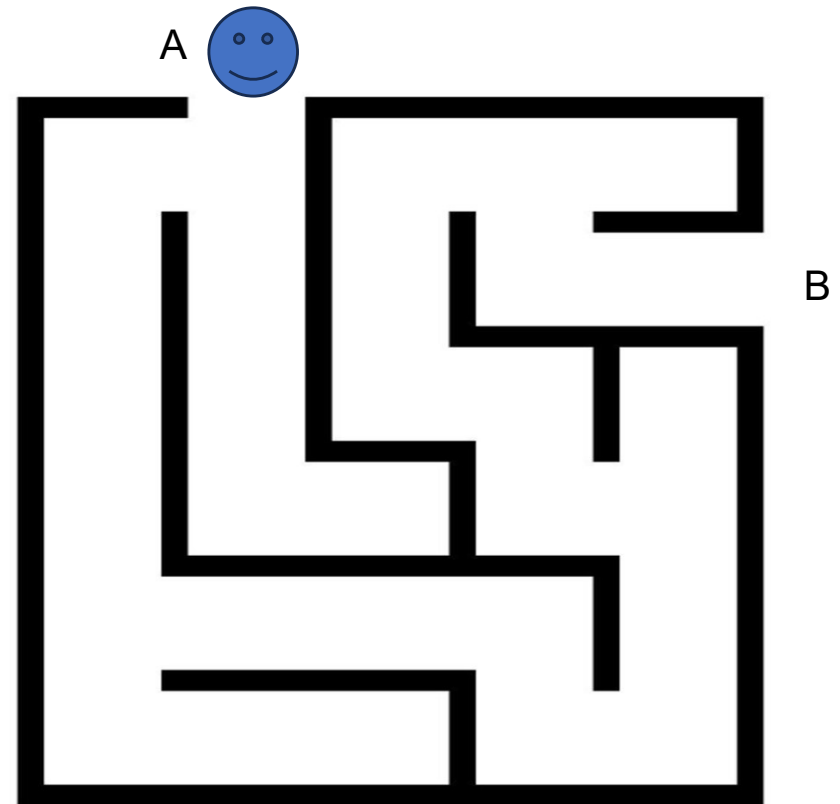


Machine Learning

Reinforcement to complete a task.

Set a goal and rules

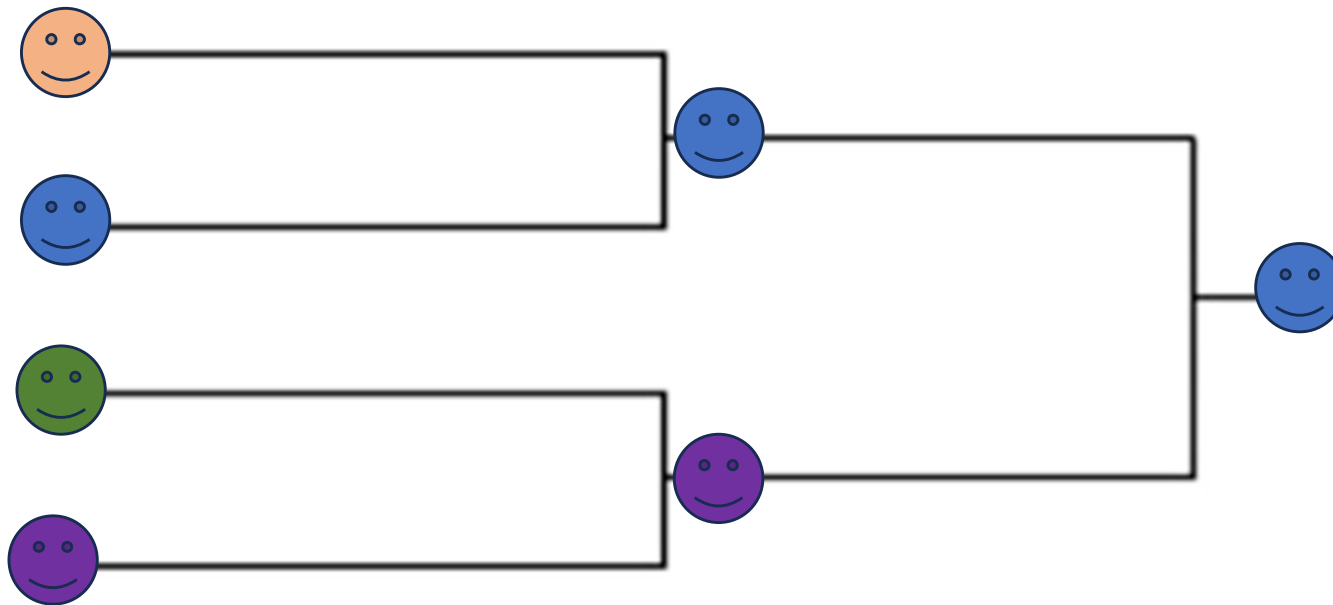
- Follow the maze from entrance to exit.
- You cannot cross walls.
- Shortest path wins.
- Try it thousands of times.
 - Keep trying until the distance doesn't get shorter.



Clarify the Rules and try again.

- All the original rules.
- + You must enter at point A and go to point B.
- + You cannot leave the maze.

Tournament Bracket: Find the Best Route



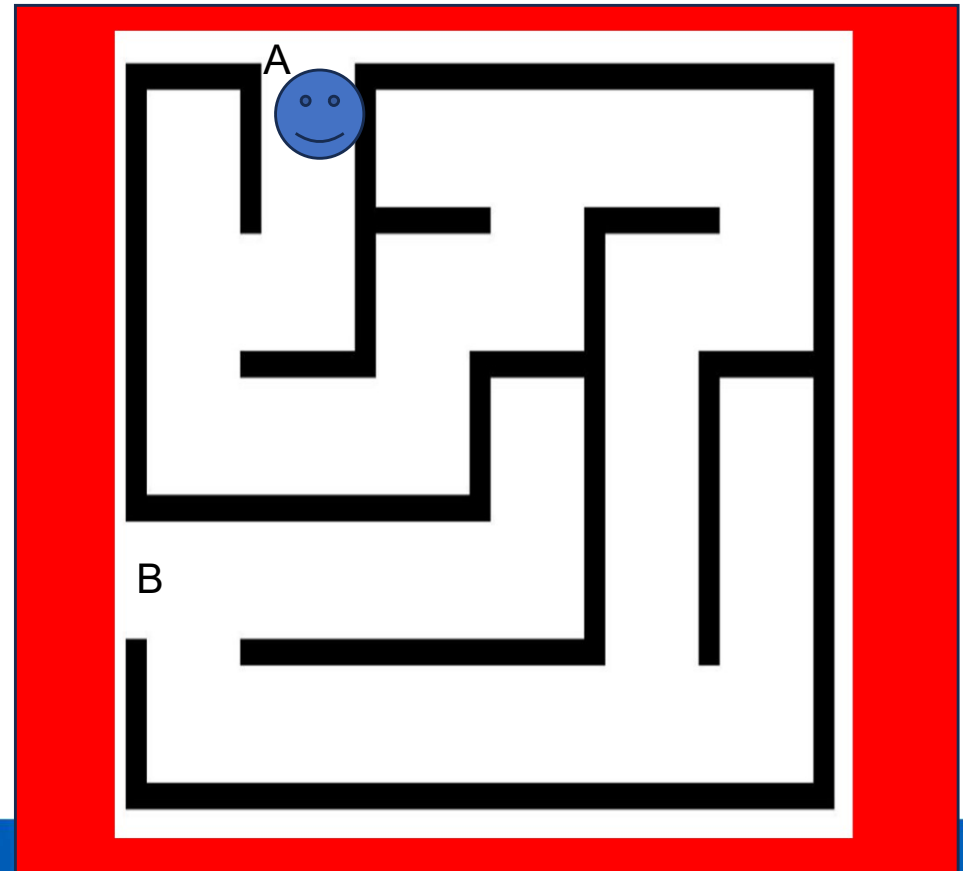
Clarify the Rules and try again.

- All the original rules.
- + You must enter at point A and go to point B.
- + You cannot leave the maze.



Give it a new maze and try again.

- It will not find a “perfect” route, but it is likely to finish the maze.
- More training may make it better at other mazes.
- Or not.



<https://www.youtube.com/watch?v=SX08NT55YhA>



Deep Learning

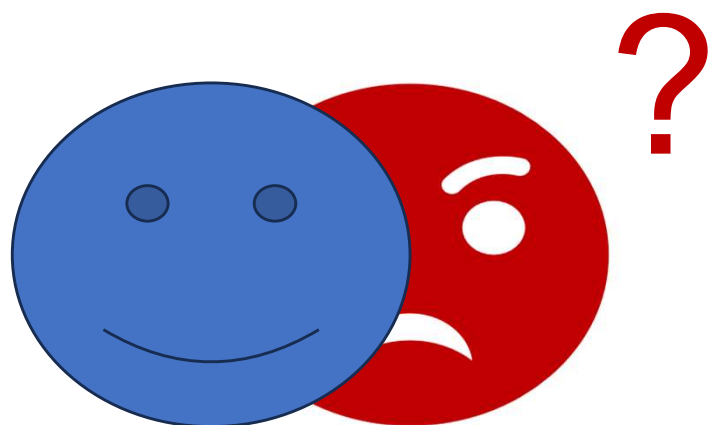
Deep Learning

- Train it on millions more hours of human road driving.
- Filter out bad or illegal decisions made by drivers.
- Train in non-ideal conditions (Rain, night, snow, mud.)
- Test, test, test.

And Then...

<https://vimeo.com/859827475>

Now, bake me a cake!





What can AI do?

What can AI do?

- My answer:
 - AI can do many things that you can do now nearly as well as you without a lot of guidance.
 - Translate a document.
 - AI can do some general tasks better than you.
 - Write poetry. Summarize large documents.
 - If it can't already do it, AI can do slightly more than you can do now, if you're willing to teach it.
 - Solving a difficult problem through programming.



Google Translate

Google Translate

Statistical Machine Translation (2010)

- In 2010, even English->French Translation was laughably bad.
- It was often easier to start from scratch than to correct.
- “Je ai” was one of the common errors.

Neural Machine Translation (2016)

- Significant improvement in quality.
- Still lagging behind DeepL.

Similar to Microsoft/Bing Translator



DeepL



DeepL

DeepL

Convolutional Neural Machine Translation

- Arabic
- Bulgarian
- Chinese (simplified)
- Czech
- Danish
- Dutch
- English (American and British)
- Estonian
- Finnish
- French
- German
- Greek
- Hungarian
- Indonesian[16]
- Italian
- Japanese
- Korean
- Latvian
- Lithuanian
- Norwegian
- Polish
- Portuguese (Brazilian and European)
- Romanian
- Russian
- Slovak
- Slovenian
- Spanish
- Swedish
- Turkish
- Ukrainian

DeepL (2017)

- Trained on millions?/billions? of aligned documents.
- Follows the style and genre of the source text.
- Retains local context.
- DeepL gives consistent quality translation.
 - As with Google Translate, you can make changes and it will adjust the output.



Dall-E, NightCafe, Stable Diffusion

Dall-E, NightCafe, Stable Diffusion

- Text to image generators.
- Able to mimic various styles and artists.
- You create a detailed prompt detailing the scene and it will try to create it.

Make a recipe with apple and nuts



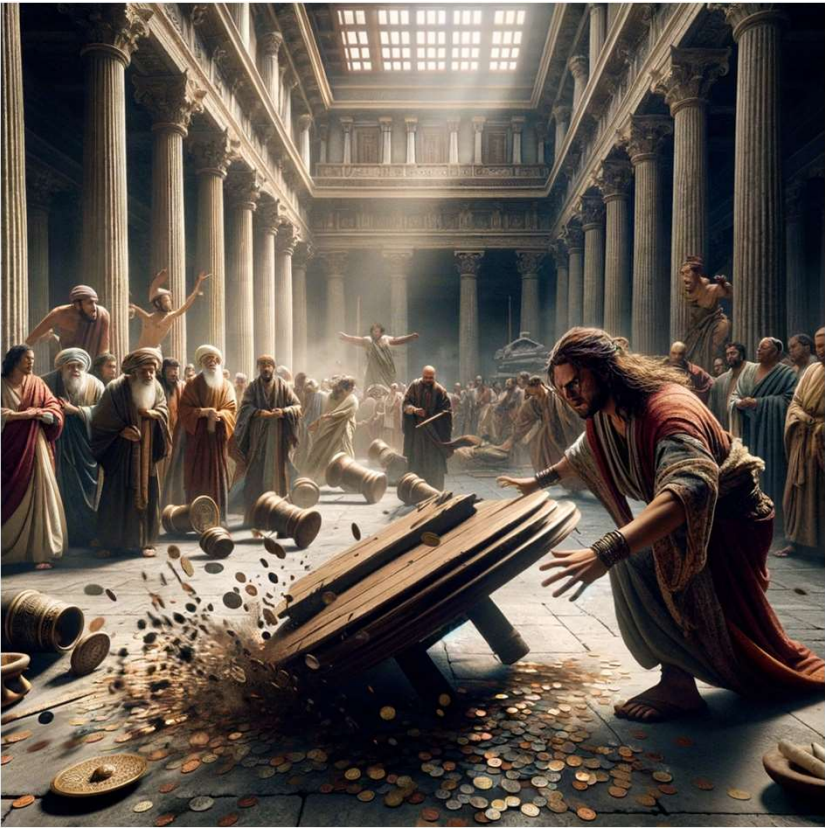
Make a dessert recipe with apple and nuts.



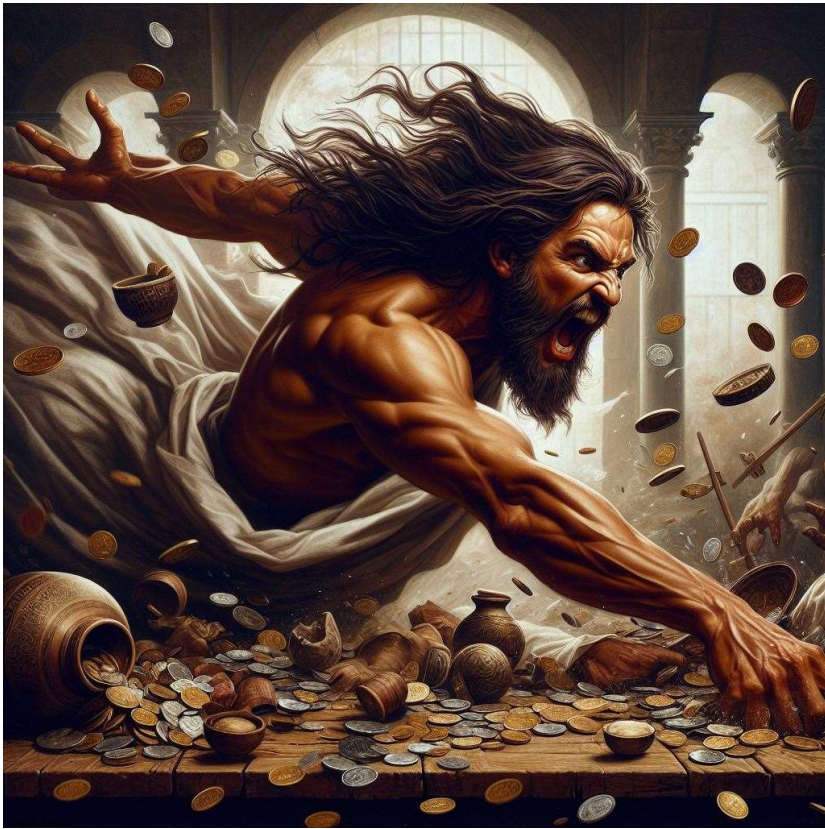
Jesus flipping over tables in the temple.



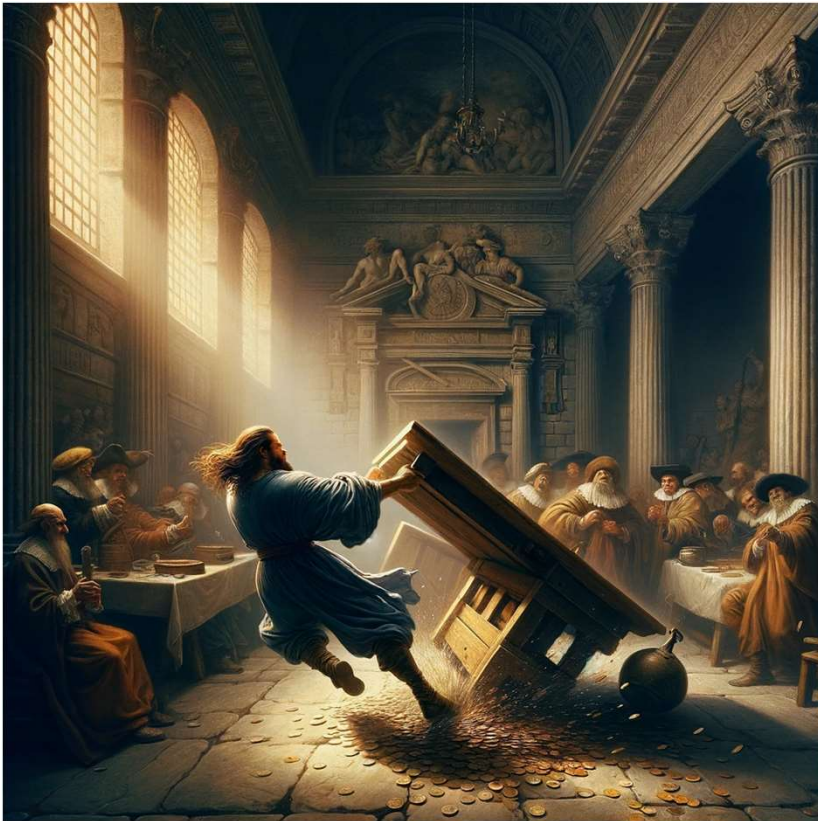
Better: Jesus turning over tables in the temple.



This is the best I could get with Dall-E



Other Styles



More Styles





Video Creation with Sora (Mostly paid services for now)

1 Year Ago

Will Smith Eating Spaghetti

<https://www.youtube.com/watch?v=XQr4Xklqzw8>

Last Month

Tokyo Woman Walking <https://openai.com/sora>

Not Always
Perfect

Wolf Pups Playing <https://openai.com/sora>



Video Translation/Lip Sync by HeyGen

Video Translated to French: <https://app.heygen.com/video-translate/share/3f6bb3b2a8024ea78c29a39d4e024cda>



ChatGPT



ChatGPT: A General Large Language Model (LLM)

Chat Generative Pre-trained Transformer

- Able to answer questions and have interactive discussions.
- Trained on “a download of the Internet” from at least a year ago.
- Capable of “roleplay” through prompting.
- Free for moderate use of GPT 3.5. Paid for GPT4.



ChatGPT: A General Large Language Model (LLM)

- ChatGPT will not give links, so it is not a search engine replacement.
- ChatGPT will rarely give the same answer twice.
- ChatGPT is instructed not to provide copyrighted, harmful or sexual content.
- Answers are nearly always plausible, but not always true.



AI work best as a Copilot

- AI won't make a novice into an expert.
- If you want to start to understand something, asking ChatGPT can be more specific and nearly as reliable as Wikipedia.
 - As you get deeper, you will notice the cracks.
- If you can explain how to do something, you can probably get AI to do it. However, you must check the results before using them.
- **DON'T SHARE CONFIDENTIAL INFORMATION!!!!**

Three Steps from Everyday AI

1. Prime

Tell the tool the background information it needs to know.

2. Prompt

Define the goal as well as you can and ask it to generate a first draft.

3. Polish

Find things to improve and ask it to improve them.

Today We Will look at:

ToolKits

- <https://goblin.tools/>

General Language Models

Large Language Model

- <https://chat.openai.com/>

LLM/Search Combos

- <https://copilot.microsoft.com/>
- <https://www.perplexity.ai/>
- <https://gemini.google.com/>



Goblin.tools

Goblin.tools

This is a good starter to get ideas of what these tools can do.

It has some pre-defined “recipes” and settings to help you get unstuck, especially when you don’t know what to do next.



goblin.tools

Goblin.tools Examples

- Magic ToDo
 - Plan a Literacy Workshop in a remote village with no electricity.
 - Inspect my car before a long trip.
 - Develop a good work/personal balance.

Goblin.tools examples

- Judge:
 - <https://www.bbc.com/news/world-africa-68656967>
 - <https://www.nbcnews.com/politics/2024-election/obamacare-wars-heat-biden-trump-clash-subsidies-rcna145187>

Goblin.tools Examples

- Chef:
 - I have white bread, green peppers, butter, apples, tomatoes and oranges. What can I make for a dinner for two?



A better question:

What do you need to do?

What do you need?

- Do you want to learn more about a subject?
- Do you want to know the difference between two things?
- Do you need ideas?
- Do you need to complete a task, but don't know how to do one step?
- Do you want an easier way to do a boring or repetitive task?



Working With Generative Chatbots

ChatGPT, Copilot, Gemini, Claude, etc.

ChatGPT vs Microsoft Copilot

- Microsoft Copilot has access to ChatGPT-4 and many other services (like Dall-E).
- You can chat with Copilot without creating an account.
- Some features like images require you to create an account.
- You can only make 30 requests per day.

- ChatGPT's site only allows you to use ChatGPT 3.5 for free, GPT-4, attachments, and image generation are paid features.

Things to know about ChatGPT

- This is a LANGUAGE model, not sources of facts.
- ChatGPT is not a search engine.
 - ✗ Give me news about SpaceX.
 - ✗ What happened last week in Buea?
- ChatGPT will not cite its sources.
 - If it does, those sources are unlikely to be real.

Things to know about ChatGPT

- ChatGPT is a language model trying to please you. It will sometimes lie or oversimplify to answer a hard question if you let it.



You

Find an English word with the same letter three times in a row.



ChatGPT

An English word with the same letter three times in a row is "bookkeeper." It has three consecutive occurrences of the letter "e."



Example Prompts for ChatGPT

- I'm going to be leading a workshop about Microsoft Word next week for people age 30-55. What should I teach?
- Give me a deep metaphor for Language Vitality.
- Here is a letter I wrote, teach me how to improve it...
- Summarize this text in 500 words or less.
- Help me write a python script to convert files like this...
- Rewrite this text in the style of...



Working With “Conversational Search”

Perplexity, Copilot, Gemini, Claude, etc.

Conversational “Search”

- Google Gemini, Microsoft Copilot, and Perplexity AI are “conversational” search engines, that can do generative tasks and/or find search results.
- Some of these tools also have extra free features like image generation.
- Usage is often limited per day.

Image Generation

- You can try this on <https://copilot.microsoft.com/>
- “Generate an image of an African man in a village setting listening to a radio with a goat in the background.”





What can AI do in Minority Languages?

Hiérarchie des outils



Outils avancés

Apprentissage automatique, correction automatique, synthèse vocale, reconnaissance vocale



Formation et ressources

Vidéo, Blogs, Manuels de formation, Soutien personnel, Ressources



Outils de création et de partage de contenu

Bloom, AlphaChart, Reading App Builder, etc.



Outils de linguistique

FLEx, PrimerPrep, Phonology Assistant, etc.



Technologies de base

Polices, claviers, codage, technologies d'affichage





AI Bible Translation

What

What do you have?

1. Thousands of interlinearized texts in the target language?
2. A related language with an acceptable full Bible?
 - a) Full interlinears of that full Bible?
 - b) Full Free Back-Translations?
3. A related language with an acceptable partial Bible?
 - a) Full interlinears of that NT?
 - b) Full Free Back-Translations

What do you need?

- Portions
- NT
- OT
- Non-Bible works.
- A Children's Bible

What

What do you have?

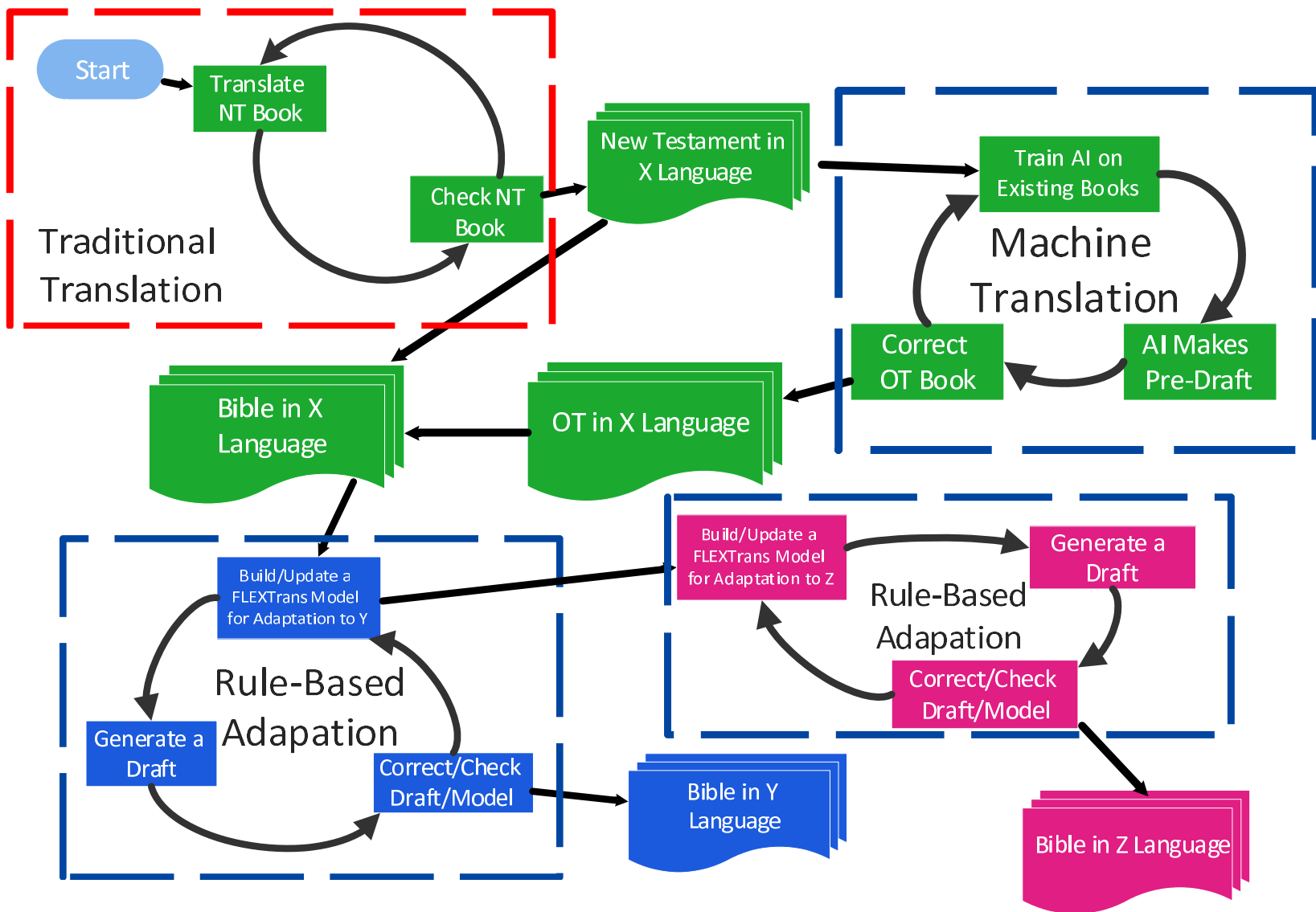
- A Stable orthography?
- Trained Translators who can improve the pre-drafts?
- Linguistic support?

What do you need?

- Portions
- NT
- OT
- Non-Bible works.
- A Children's Bible

Pathways in Translation

- Translate NT into Language X
 - Clean and Check Drafts
- Use ScriptureForge to draft OT for Language X
 - Clean and Check Drafts
- Use FLExTrans to build a model for Adaptation to Language Y
 - Clean and Check Drafts
- Use FLExTrans to build a model for Adaptation to Language Z
 - Clean and Check Drafts



If we had a full interlinearized Bible in each language family...

- The vernacular would be a great adaptation source (FlexTrans or Adapt-It)
- The interlinear may be the PERFECT model text for teaching ScriptureForge the syntax of the language family (from the word order) and the meaning (from the English or French Words).



*“You can’t believe everything you
read on the Internet.”*

~ William Shakespeare