Smart Home Ambient Intelligence: voice assistants

a new limit for our freedom?

Stefano Brandoli

Politecnico di Milano
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Presentation Outline

Smart Home Ambient Intelligence: voice assistants
a new limit for our freedom?

1. Introduction
   - Technological Mediation
   - Definitions
2. Case Study: Google Home - Google Assistant Actions
   - Applied concepts of Technological Mediation limiting our freedom
   - Ethical concerns arising from loss of freedom
3. Possible Remedies

Introduction

Technological Mediation

> *While fulfilling their function, technologies do much more: they **give shape to what we do** and how we experience the world. And in doing so they **contribute actively** to the ways we live our lives (Verbeek 2011)*

- Technologies are not **neutral intermediaries**
- Technologies play an **actively mediating role**
- Artifacts are **bearers of morality** (Latour 1992)
- Morality is a matter of **human-technology associations**

- Two perspectives of mediation:
  - Perception
  - **Action**: I will focus on **human freedom**

Definitions I

Ambient Intelligence

Ambient Intelligence *is an approach that combines two major technologies: Ubiquitous Computing and Intelligent User Interfaces (Brey 2005)*

Voice Assistant

A ***voice assistant*** *is a digital assistant that uses voice recognition, natural language processing and speech synthesis to provide aid to users through phones and voice recognition applications (WhatIs 2017)*

Definitions II

Freedom

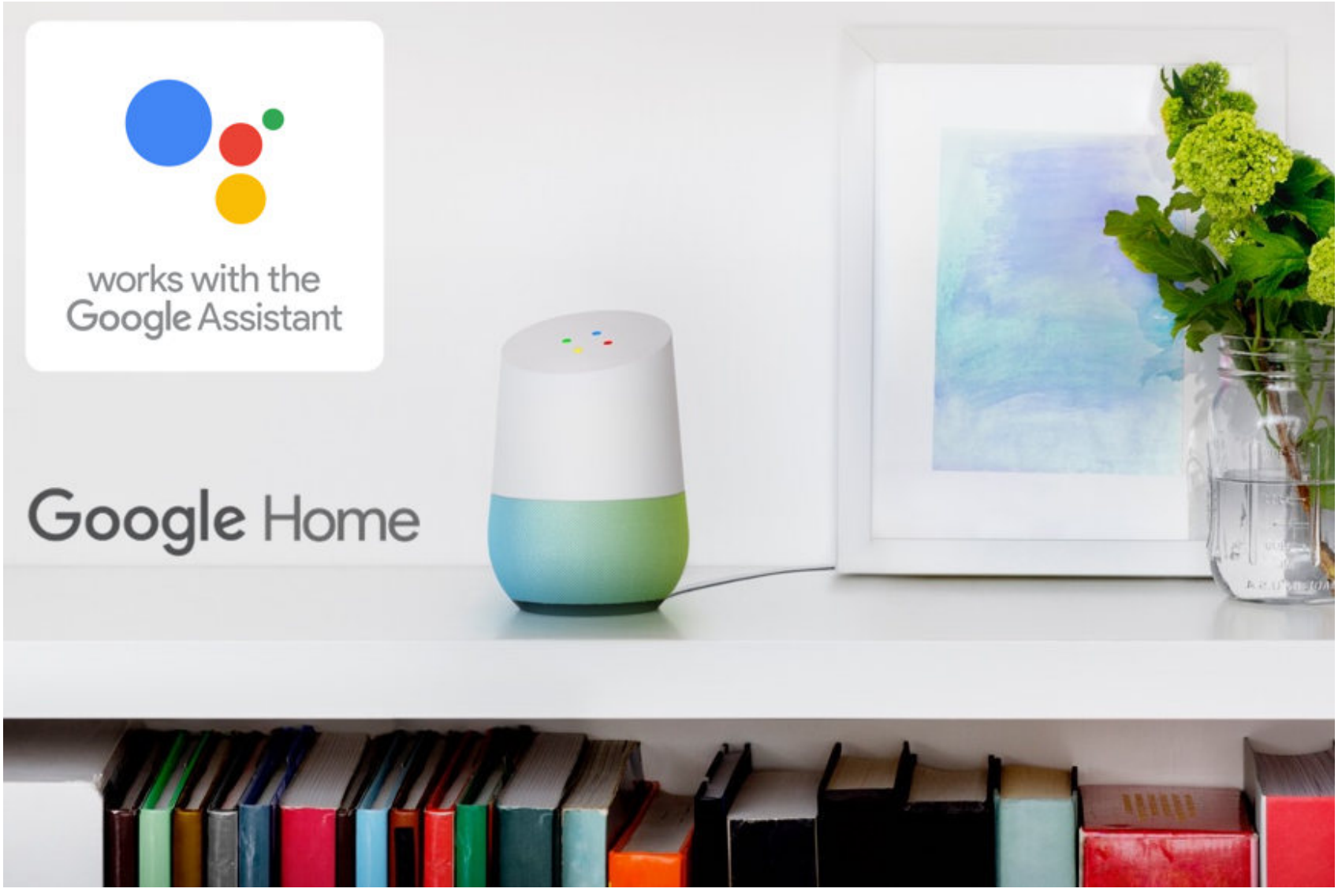
Two forms (Brey 2005, 2006):

- Negative Freedom:
  - act without obstruction or interference by others
  - absence of limits and external constraints

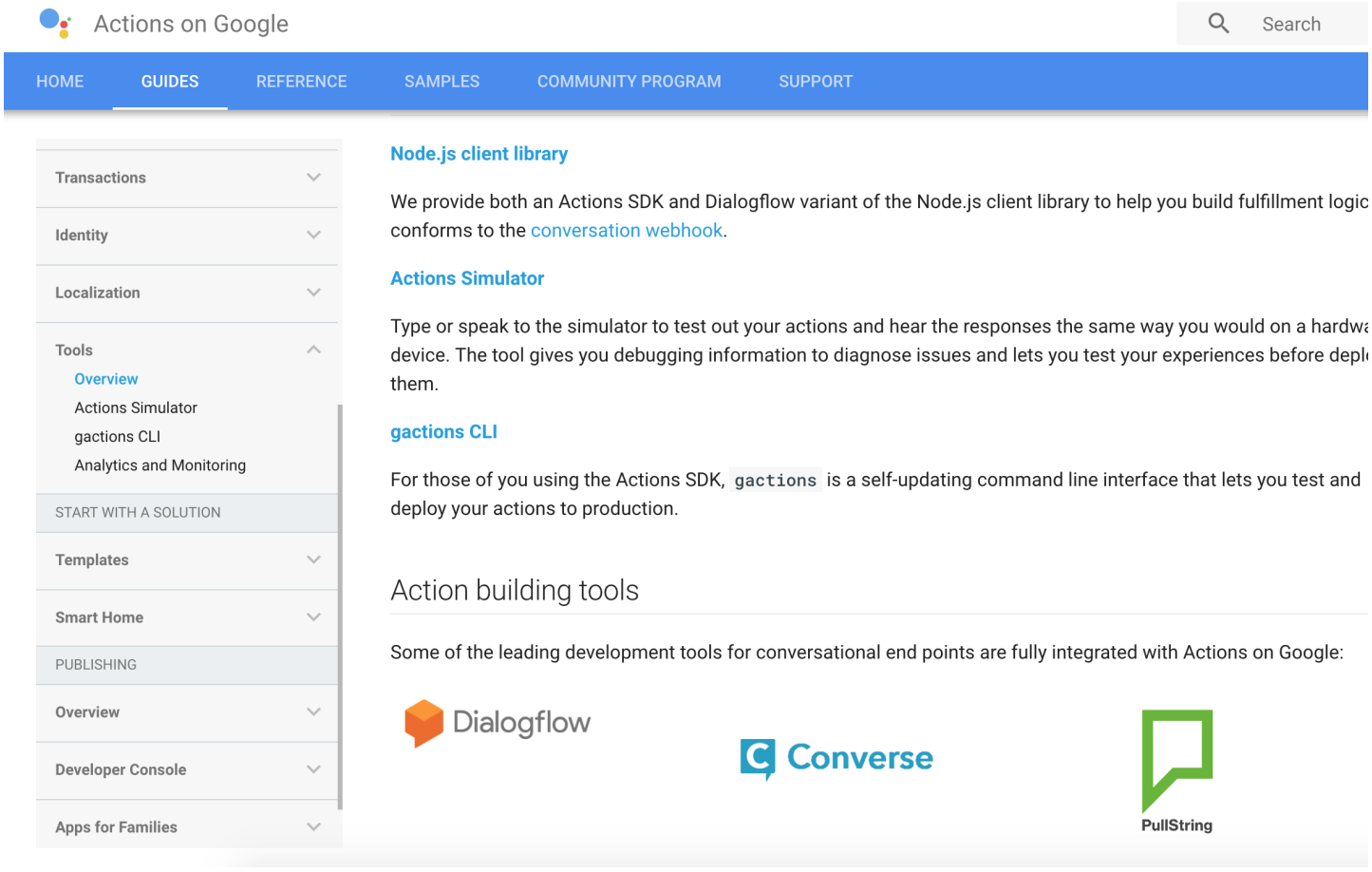
  example: artifact refusing to perform an action

- **Positive Freedom (Human Autonomy)**: I will focus on this
  - mastery over your own life
  - **think freely**, **make your own decisions** to act

Case Study: Google Home - Google Assistant Actions



Google Assistant Actions



Starting from the **Actions on Google documentation** I will show:

1. **Applied concepts** of Technological Mediation limiting our freedom
2. **Ethical concerns** arising from loss of freedom

Applied concepts of Technological Mediation limiting our freedom

Script: make your own decisions

Script

> *A **script** is a prescription of how to act when using the artifact (Verbeek 2011)*

Interactions can be built in two ways (Google 2017):

- **With templates**
  - . . . build apps **without writing a single line of code!**
  - . . . build apps quickly **without worrying about designing conversations** . . .
  - Google decides which interactions are good and what aren't
- **Without templates**
  - **Dialogflow**
    - machine learning
    - natural language understanding
    - extract parameters (data) from the user input
  - developers can decide the whole conversational interaction

Script: make your own decisions

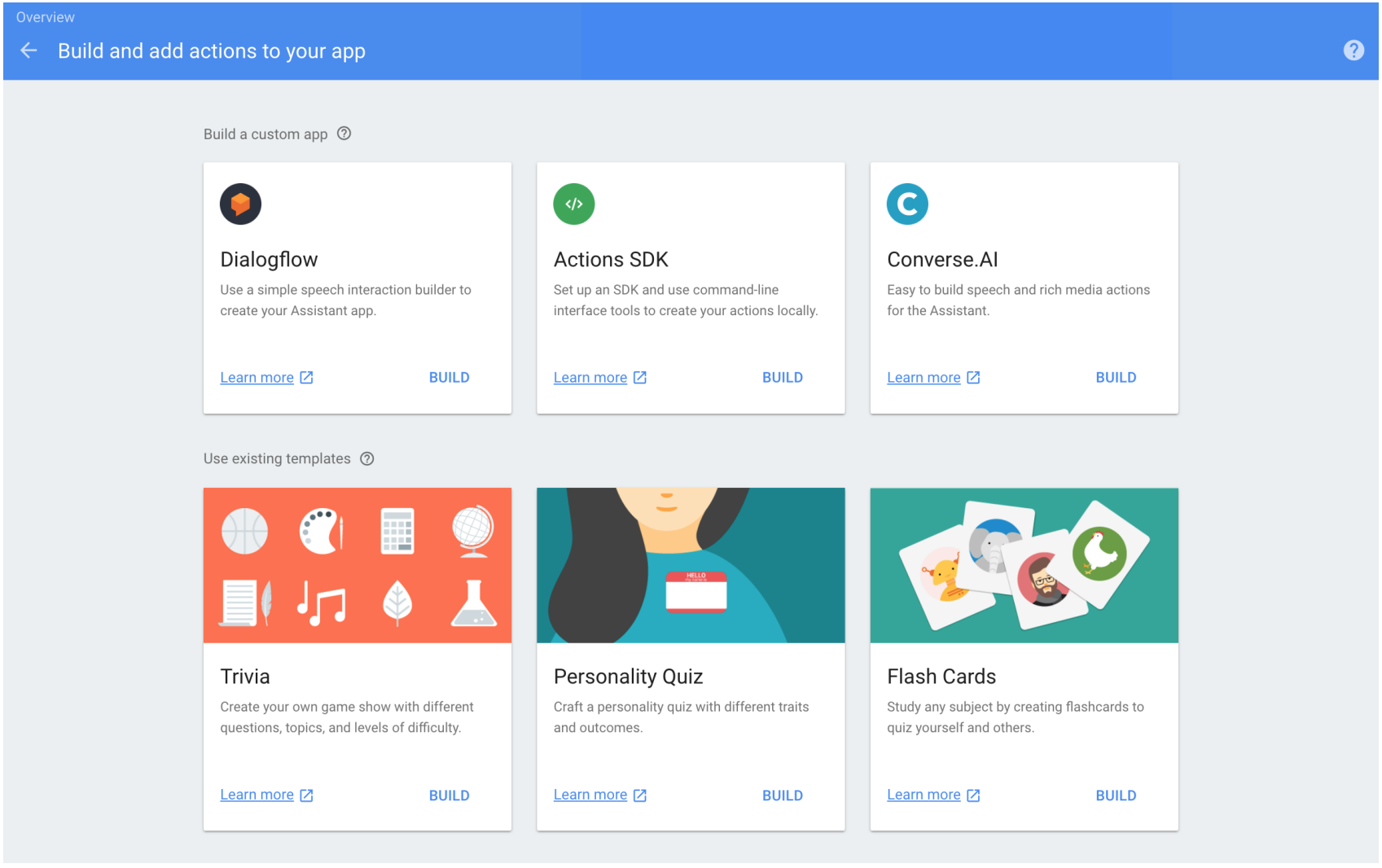


Figure: Actions On Google Console

Invitation/Inhibition: make your own decisions

Invitation/Inhibition

*The scripts of artifacts **suggest specific actions** and **discourage others** (Verbeek 2011)*

- Developers while creating the application logic (*fulfillment*) **enable some actions** and **disable some others**
- The conversational interaction doesn't go on if the user hasn't answered with **all the required parameters**

Invitation/Inhibition: make your own decisions

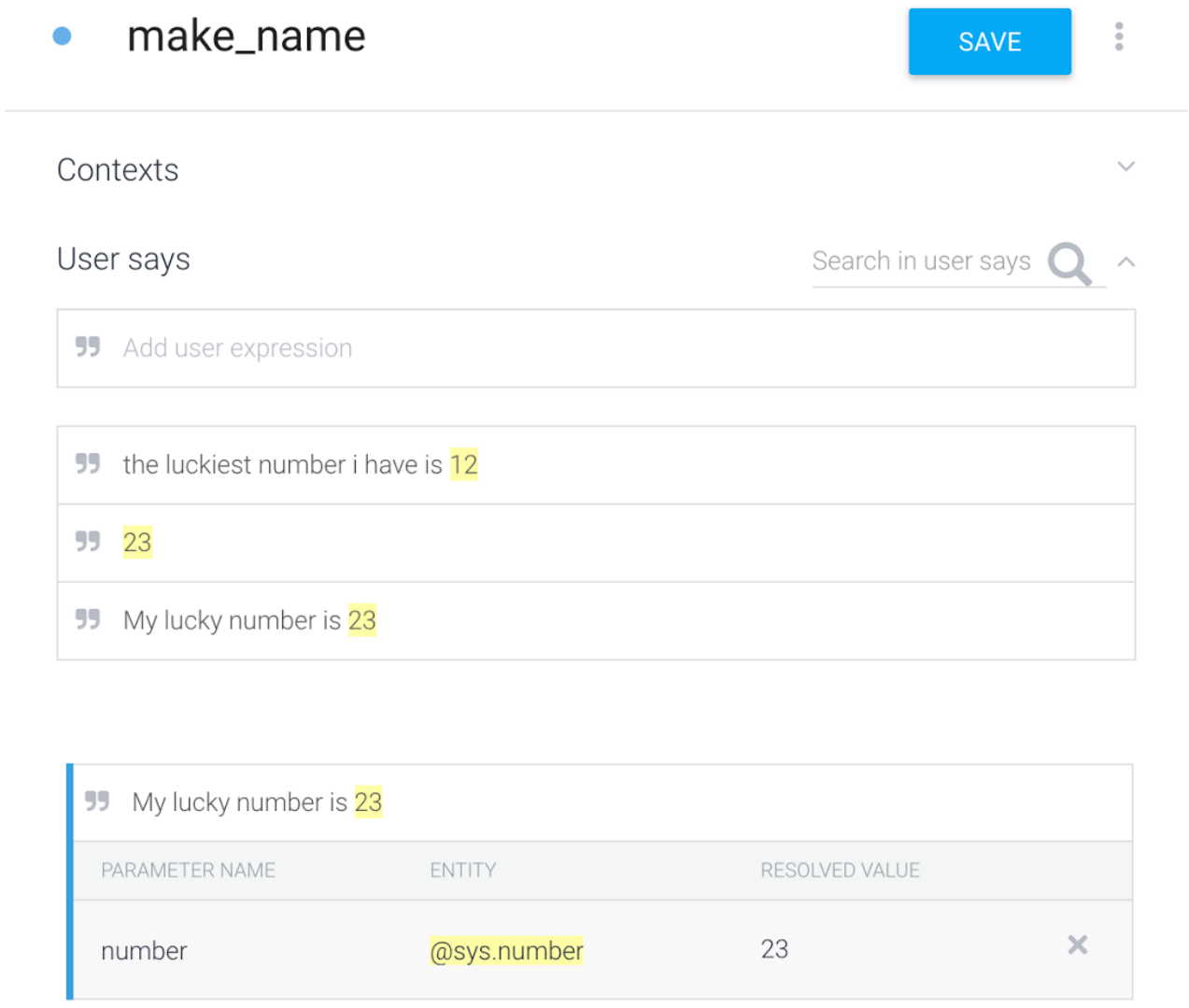
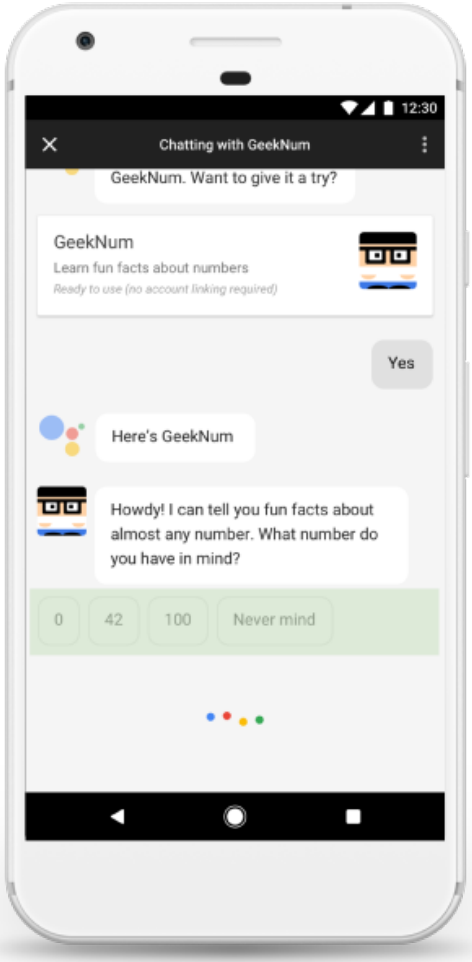


Figure: DialogFlow interactions

Behaviour Steering: think freely

Suggestion Chip

*Use suggestion chips to **hint at responses** to continue or **pivot the conversation** (Google 2017)*



Advertisements

content...

Implicit Invocation

content...

Where is Technological Mediation?

1) Google Actions Policies and terms: designed towards privacy, content, branding, . . . : what about technological mediation?

Ethical concerns arising from loss of freedom

Technocracy

+ we may have the opposite problem: non technical people designing actions without having enough background!!!

Moral Laziness

commodification of morality

Moral responsibility of designers

What if in the future developers will shape morality???
Responsibility vacuum

What about behaviour change?

what if we want to change our behaviour towards what we think is good to us and not towards what is good for the designers?

Possible Remedies

Possible Remedies

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