Smart Home Ambient Intelligence: voice assistants

a new limit for our freedom?

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Presentation Outline

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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

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

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 build in two main ways (Google 2017):

- **With templates**
    - ... build apps **without writing a single line of code!**
    - ... build apps quickly **without worrying about designing conversations** ...

- **Without templates**
    - DialogFlow and integrated NLP engine
    - developers can decide the whole conversational interaction

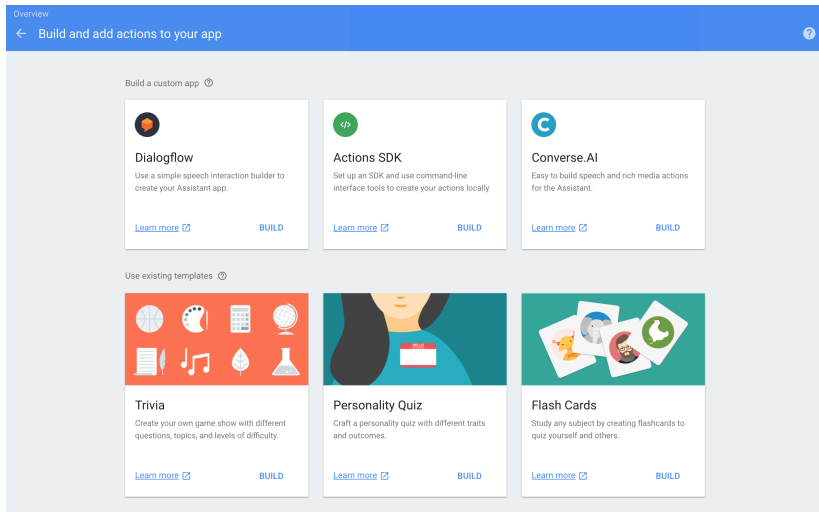# Script: make your own decisions

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)*

- Fullfillment = application logic
- Developers create the logic of the interaction by enabling some actions and inhibiting some others.
- The conversational interaction doesn't go on if the use hasn't included all the expected parameters in the answer

Invitation/Inhibition: make your own decisions

Figure: DialogFlow building interactions

Behaviour Steering: think freely

1) suggestion chips
2) In future Google Assistant will propose in the conversation also
ADS!!! And developers can see analitycs to shape further the
behaviour.
3) Idea: natural language "may hide" the behaviour steer but it is
designed there! "Explicit vs implicit invocation".

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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