Machine Learning
Data Analytics

FAU

Human Computer Interaction

Discussion Session 4: Principles

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Design Principles

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Learnability

The ease with which new users can begin effective interaction and achieve maximal performance

Predictability

Synthesizability

Familiarity

Generalizability

Consistency

Flexibility

The multiplicity of ways the user and system exchange information

Multithreading

Task migratability

Substitutivity

Robustness

The level of support provided to the user in determining successful achievement and assessment of goal-directed behavior

Observability

Recoverability

Responsiveness

Task conformance

Other Design Rules?

Types of Design Rules

Principles:

Abstract design rules

Golden rules and heuristics:

More concrete than principles
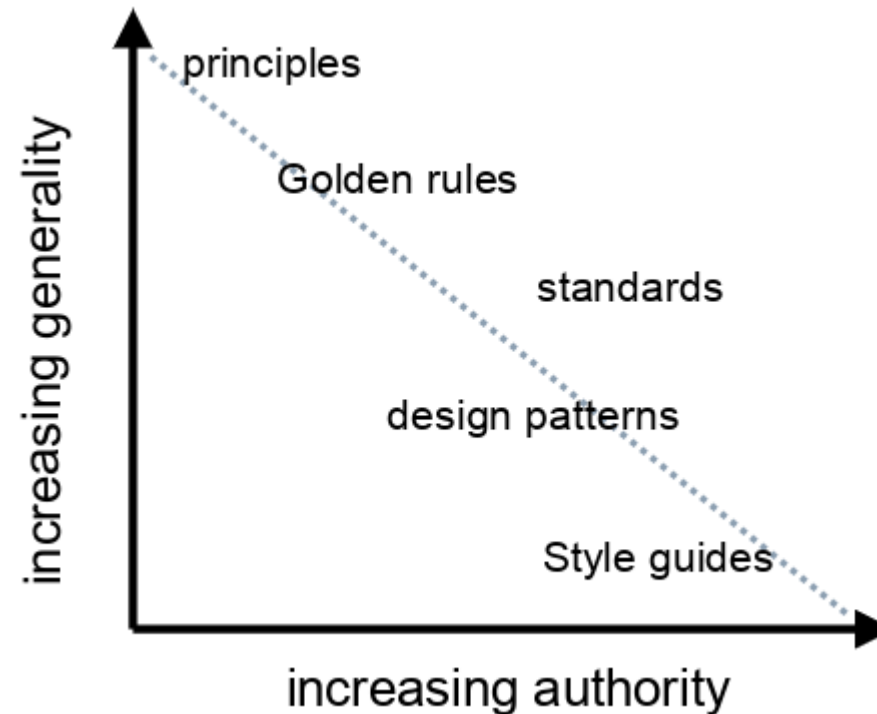
Standards:

(Very) detailed design rules

Design patterns:

Generic solution for a specific problem

Style guides:

Provided for devices, operating systems, widget libraries

UI vs UX
Understanding UX

User Interface Design

This is how it looks like

UI: anything a user may interact with to use a digital product or service: screens, touchscreens, keyboards, sounds, lights ..

UI: enhances the look and function of a product focusing on tangible elements.

UI

User Experience Design

This is how it feels like

UX: "all aspects of the end-user's interaction with the company, its services, and its products" –Don Norman, Jakob Nielsen

UX: revolves around the user's problem-solving journey, examines their needs and the challenges they face.

UX

Principle 1: Recognize User Diversity

Principle 2: Follow the Eight Golden Rules

Principle 3: Prevent Errors

Capture errors Two actions with common start point, the more familiar one captures the unusual (driving to work on Saturday instead of the supermarket)

Description errors Performing an action that is close to the action that one wanted to perform (putting the cutlery in the bin instead of the sink)

Data driven errors When users return to the design after a period of not using it, how easily can they reestablish proficiency?

Associate action errors You think of something and that influences your action. (e.g. saying come in after picking up the phone)

Loss-of-Activation error ~ forgetting In each environment you decided to do something but when leaving then you forgot what you wanted to do. Going back to the start place you remember.

Mode error You forget that you are in a mode that does not allow a certain action or where an action has a different effect

What are the benefits of personas as a design technique?

Use Cases for Design Personas: A Systematic Review and New Frontiers

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ABSTRACT

Personas represent the needs of users in diverse populations and impact design by endearing empathy and improving communication. While personas have been lauded for their benefits, we could locate no prior review of persona use cases in design, prompting the question: *how are personas actually used to achieve these ben-*

1 INTRODUCTION

Personas are fictional persons that represent real user segments [7], enabling designers to go beyond mere descriptive segments (p. 60) and truly empathize with end-users [84]. Cooper [41] defined personas as a user-centered design (UCD) and human-computer interaction (HCI) technique that promotes immersion into end-users'

Principles
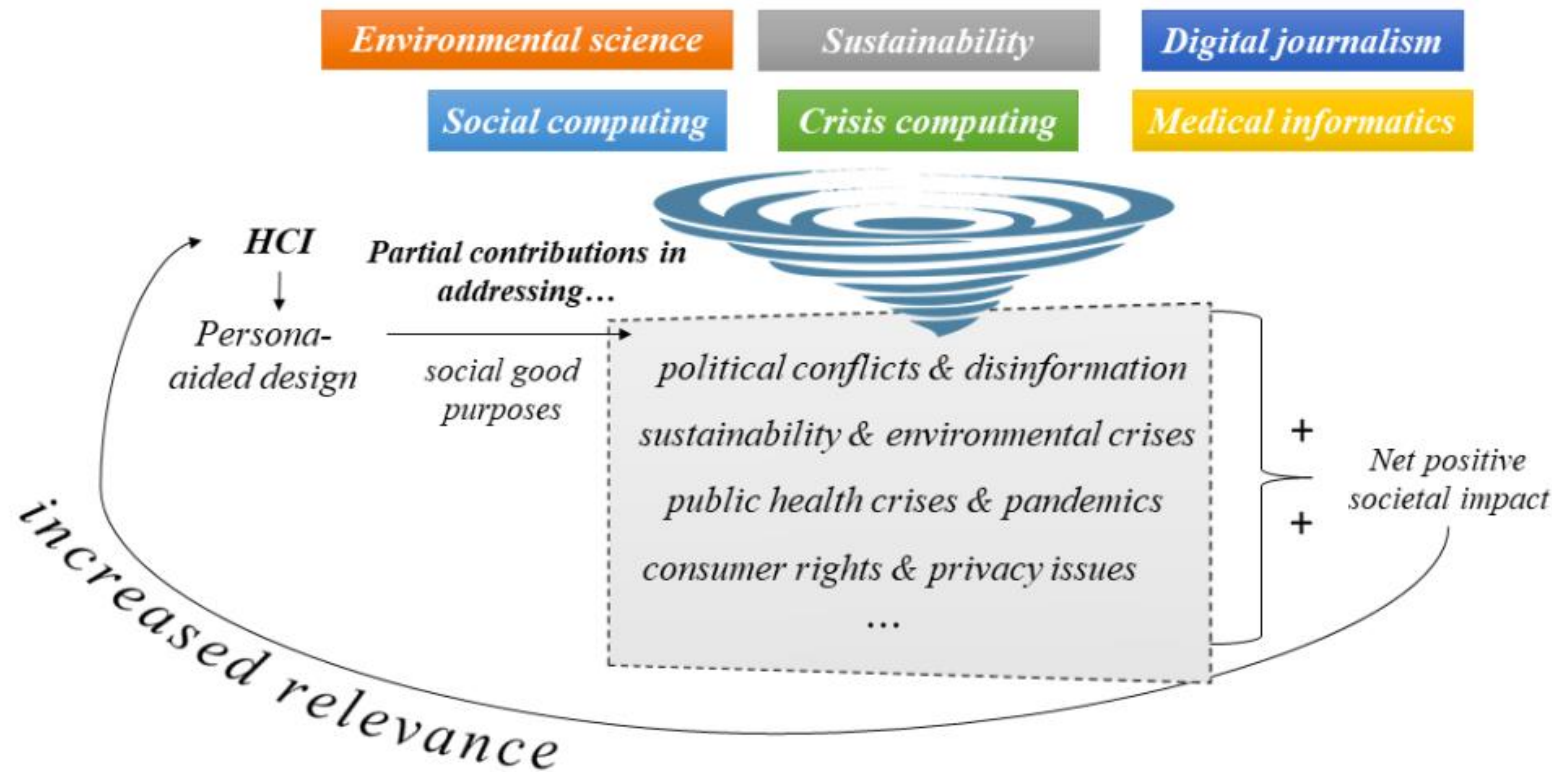## Recognize User Diversity – Personas

Illustration of example domains where persona-aided design can be part of solutions to social problems.

The overarching benefit to the HCI community of applying UCD techniques to these problems is the discipline's increased relevance.