

EMPATHY

A conceptual framework for the design of enriched experiences

Nelma Albuquerque
Concepts and Insights®

MOTIVATION

- To look at users' experiences as the heart of applications
- To contribute to the design of enriched human interactions
- For mediated human interactions
 - emotion still is an underexplored topic
 - the need of a conceptual framework that approaches Presence, mental models and emotions

PROPOSAL

- a conceptual framework under the acronym of EMPATHY
- the framework is elaborated at an abstract conceptual level
- human factors are placed as determinant factors to the design of applications

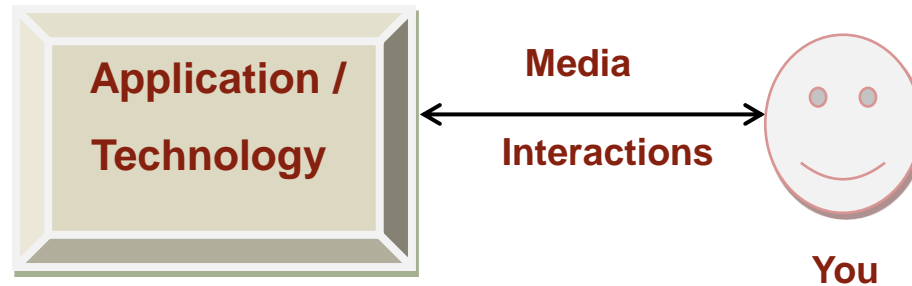
FROM

HUMAN MEDIA INTERACTION (HMI)

TO

MEDIATED HUMAN-HUMAN INTERACTION (HHI)

HUMAN-MEDIA INTERACTION PARADIGM (HMI)

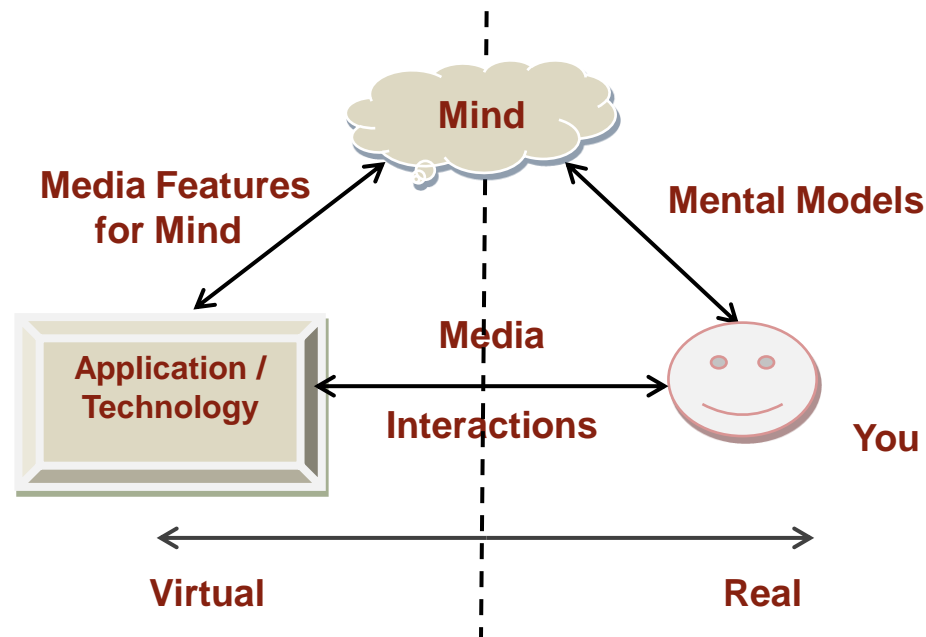


A user interacting with an application

- Media interactions represent:
interface, devices, application functionalities

ENRICHING THE HMI PARADIGM

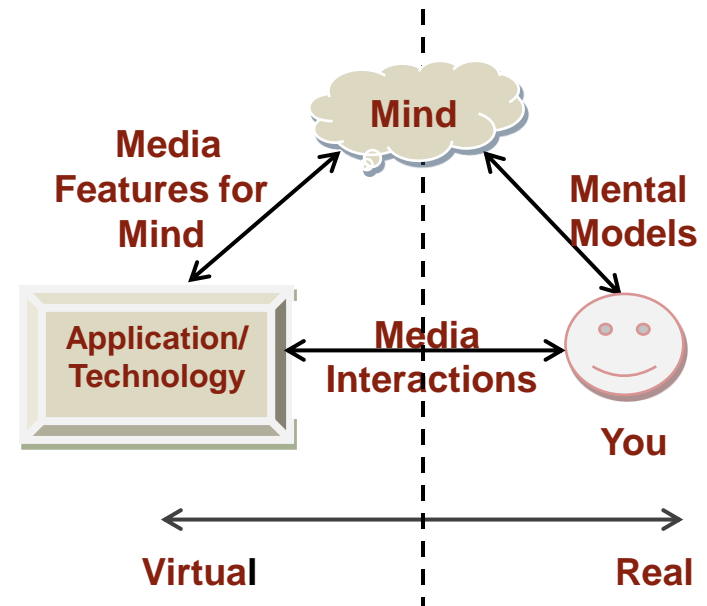
- we introduce the entity **Mind** – representing the user mindset
- **Media Features for Mind** – connecting the user’s mental models to the application;
- Representing the users’ perception of Real and Virtual – vertical axis



HOW TO MAP THIS PARADIGM TO PRACTICE?

Let's consider the example of a VR application for phobia treatment

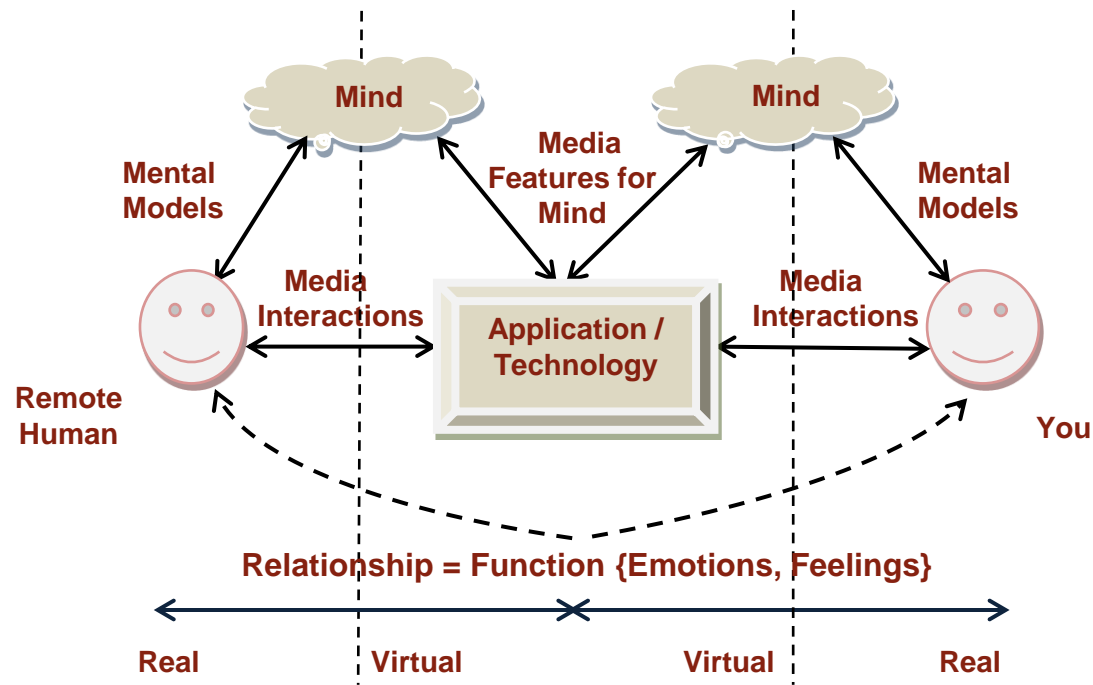
- **You** – the patient, **Application** – the VR system, and **Mind** – the patient's condition to be treated
- **Mental Models** – fears, phobias, etc
- **Media Features for Mind** – support the user's involvement to achieve the desired results
- **Media Interactions** – support the interactivity quality, the realism of the environment, devices like VR headsets, data gloves, sensors, etc



MEDIATED HUMAN-HUMAN INTERACTION (HHI)

Bringing a remote human to the interaction context

- the parameters presented will double
- between users there is a relationship – it brings emotion



SUMMARIZING A DEFINITION OF EMPATHY

In the psychology context

- **Empathy** involves the cognitive mechanisms of users' mind models and the affective mechanisms inherent to users' emotions. Kouprie & Visser (2009)

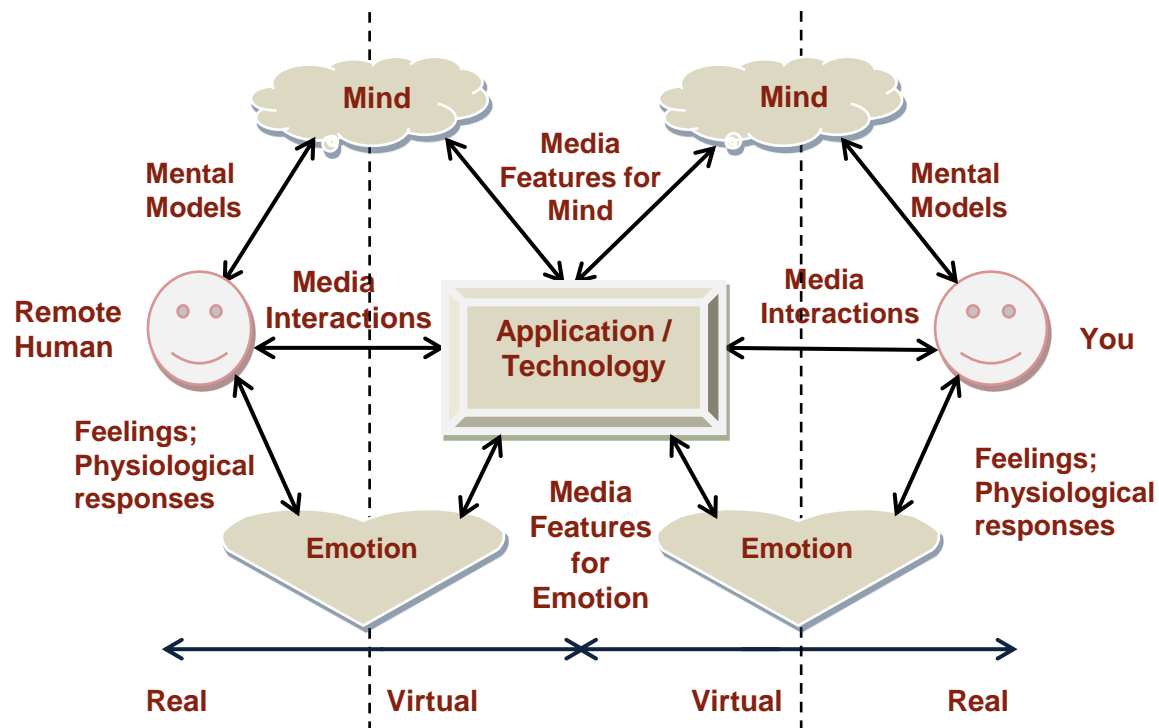
By introducing the **Emotion** element to the HHI paradigm, we will complete the EMPATHY framework.

THE ACRONYM ELEMENTS FOR E-M-P-A-T-H-Y FRAMEWORK

- **E – emotion**
- **M – mind**
- **P – presence**
- **A – application**
- **T – technology**
- **H – remote Human**
- **Y – you**

THE EMPATHY FRAMEWORK

- Introducing the entity **Emotion** – the users' feelings, physiological responses
- **Media Features for Emotion** will bridge those information to the application
- the mind and emotions of users are now approached by two split channels

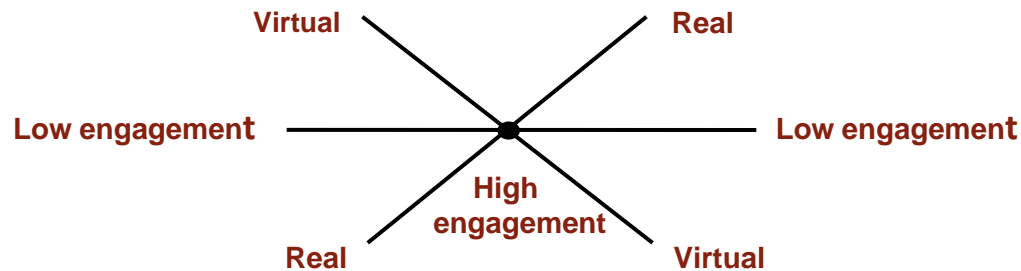


THE TRADE-OFF BETWEEN REAL AND VIRTUAL

With the interpretation that

- what goes closer to the person is reality
- what goes closer to the media is virtuality

Trade-off between real and virtual as a function of users' engagement



Taking this correlation to the EMPATHY framework, we summarize:

Trade-off reality x virtuality = Function {mental states, emotions, media features}

APPLICATION SCENARIO UNDER THE EMPATHY

A system to support virtual exposure therapy:

- Sam has a social psychological disorder
- He has a virtual exposure therapy section in VE
- Sam attaches sensors to his wrists and heart
- In the VE, he meets his doctor's avatar
- The doctor helps him to interact socially with other people in the VE
- The sensors send to the doctor real-time information of Sam's physiological changes
- There is a thermal camera that detects the changes in Sam's skin
- When Sam experiences reactions – like blushing, or heart racing, the doctor sees different rendering colors on specific regions of Sam's avatar body
- Only the doctor can see the looks alterations of Sam's avatar
- Sam feels more confident to act in that environment
- The doctor can support Sam at anytime privately

THE SCENARIO X THE EMPATHY FRAMEWORK

- the application described supports the transfer of emotions, mental states, and the feeling of Presence between the remote users
- the system preserves the patient privacy
- treats his social phobia with individuality
- the system provides different forms of interactions, for both, the doctor and Sam

DISCUSSION AND DIRECTIONS

The main goals of the EMPATHY framework:

- to stimulate the conception of applications that will focus more on individuals, and put the user in the heart of the design
- the EMPATHY concept highlights the possibilities of analyzing components separately
- thinking in modules helps to know which models and features would be involved at each step
- to emphasize the relevance of mind models and emotion for the project of future media

QUESTIONS FOR FURTHER RESEARCH

- *In what extent emotional components are responsible for the blurring between real and virtual, in remote social interactions?*
- *When the social components strengthen, would the perception of virtuality tend to go down?*
- *Would the relation between intention \times emotion, and the need to correctly transfer those elements, be the reason for which **emoticons** are so successful in remote interactions?*

CONCLUSIONS

- EMPATHY is an open conceptual framework for mediated HHI, approaching emotion and mind models by two split channels.
- The concept of the EMPATHY framework can be applied to a large number of applications in the context of social interactions.
- The media channels were split into **Media Interactions** for user, **Media Features for Mind** and **Media features for Emotion**. All together intends to better afford Presence.
- We want to bring more awareness to the relevance of the appropriate inclusion of human factors in applications, aiming to promote enriched users' experiences.

THANK YOU!

albuquerque.nelma@gmail.com