

Relaxed Computing

Supporting Relaxed and Pleasant *Experiences*
in Everyday Lives

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Relaxations - it's non-goal oriented !

People have their own favorite time of relaxation, at home, out of door, etc...



- *People don't have explicit goals to achieve*
- *Non-goal orientation: an important aspect of relaxation*

Relaxations - Supporting Non-goal Oriented Processes



- People in relaxed situations:
 - Do not have strong motivation to pursue productivity
 - Easily terminate their processes if they encounter trivial ease-of-use problems (→ severe EoU requirements)
- Relaxed Computing needs to address:
 - Not only interaction, but various aspects of relaxation experiences
- Beyond "ease-of-use," it requires different set of design objectives and considerations

Understanding Relaxed Experience: Relaxation and Aesthetic Experience



- Investigations of aesthetic experience
 - J. Dewey's perspective (Dewey 1934) :
- Aesthetic experiences are an integral part of human everyday lives
 - lie in-between two extremes: most experiences classified into either class

just drift, and unorganized flow
of events



just mechanically connected events
with one-another



- have a clear beginning and end (*e.g.* when I first saw ...)
 - have a **unity**, a single quality that pervades the entire experience
- Relaxed experience can be considered a kind of experience that aims to have an aesthetic quality

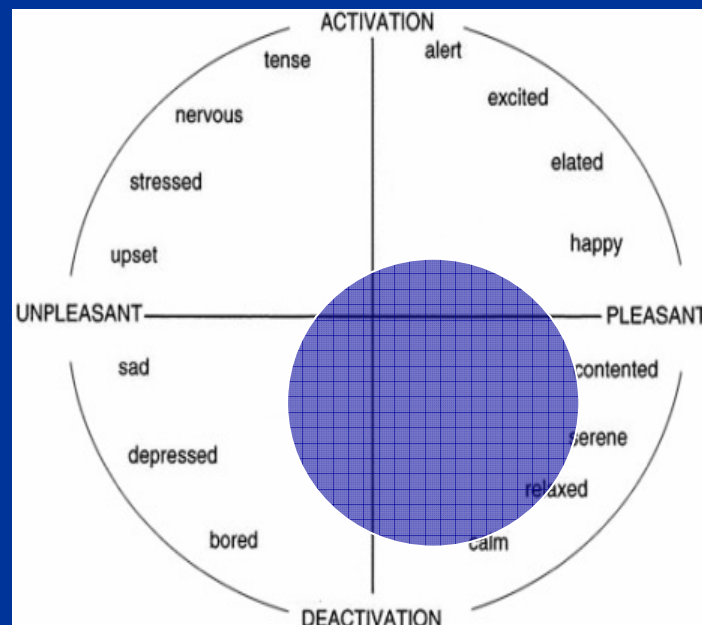
Understanding Relaxed Aesthetic Experience - Walking in a Japanese Garden

- Japanese Garden (*tour garden*):
 - Comprises both buildings and garden
 - Naturally prompts promenaders to walk along a rounded garden path
- A succession of various architecturally arranged scenes
 - weaves a refined story along the path, with the flow of time
 - We can enjoy various (virtual) experiences in single garden
- Facilitates awareness of bodily experience
 - sometimes encounter unexpected experience (scattered stones) while walking
 - It entails stepping, balancing, seeing, listening and involves a whole body
- The different parts of experiences are made to come together as a whole, unity in an aesthetic experience

Understanding Emotion in Relaxed Experience



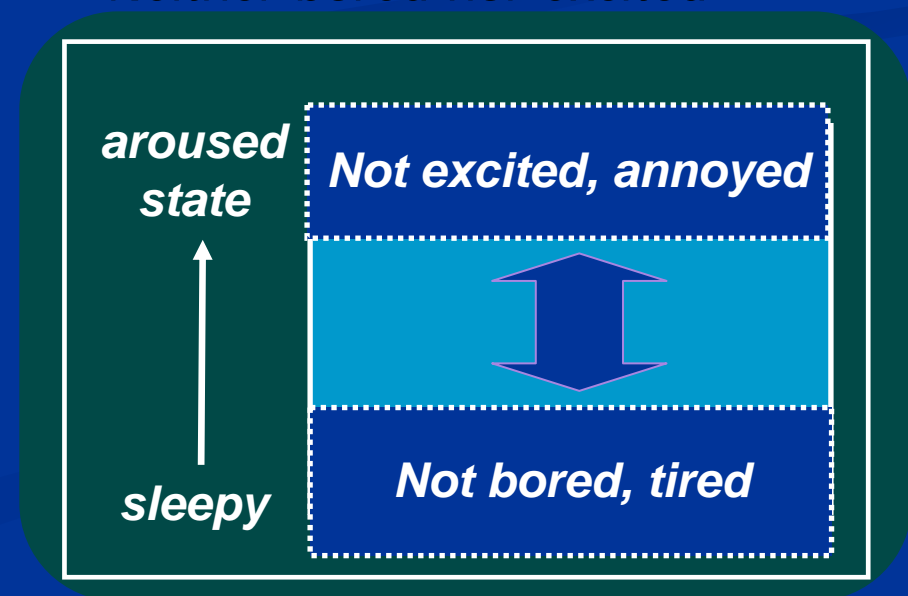
- Emotion is a part of “experience”
 - Inseparable from the intellectual and bodily experiences
- Low in arousal, Positive end of valence scale → mild state
 - Circumplex model of affect (Russel, 1980; 1996)



Deactivation

Pleasant

Neither bored nor excited

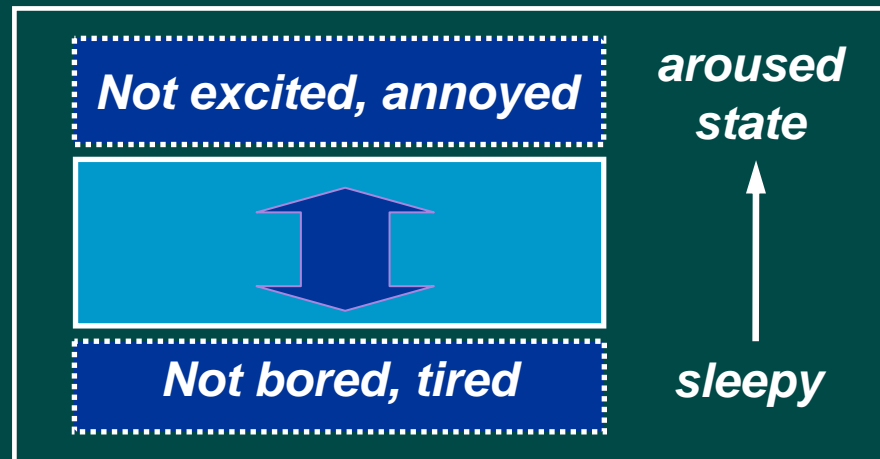


Relaxed Computing

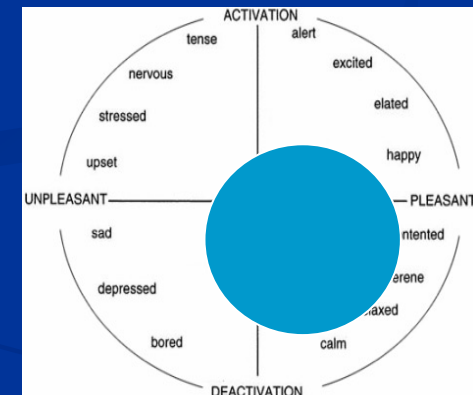
The aim

- Maintain continuous experience of relaxed and pleasant time in a mild emotional state, without getting a user bored, tired, annoyed or excited.

Emotional state during an experience with “relaxed computing”



this means ...



Russel's *Circumplex model*

Design Elements of Relaxed Computing

- Not limited to interaction → experience design
- But, interrelated aspects of relaxation experiences including:

Design elements

The aim

Users' Experiences with:

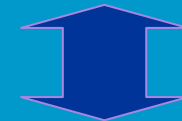
aspects

- Media
- Contents
- Activity & behavior
- Place & environment

Emotional state during an experience with "relaxed computing"

Not excited, annoyed

aroused state

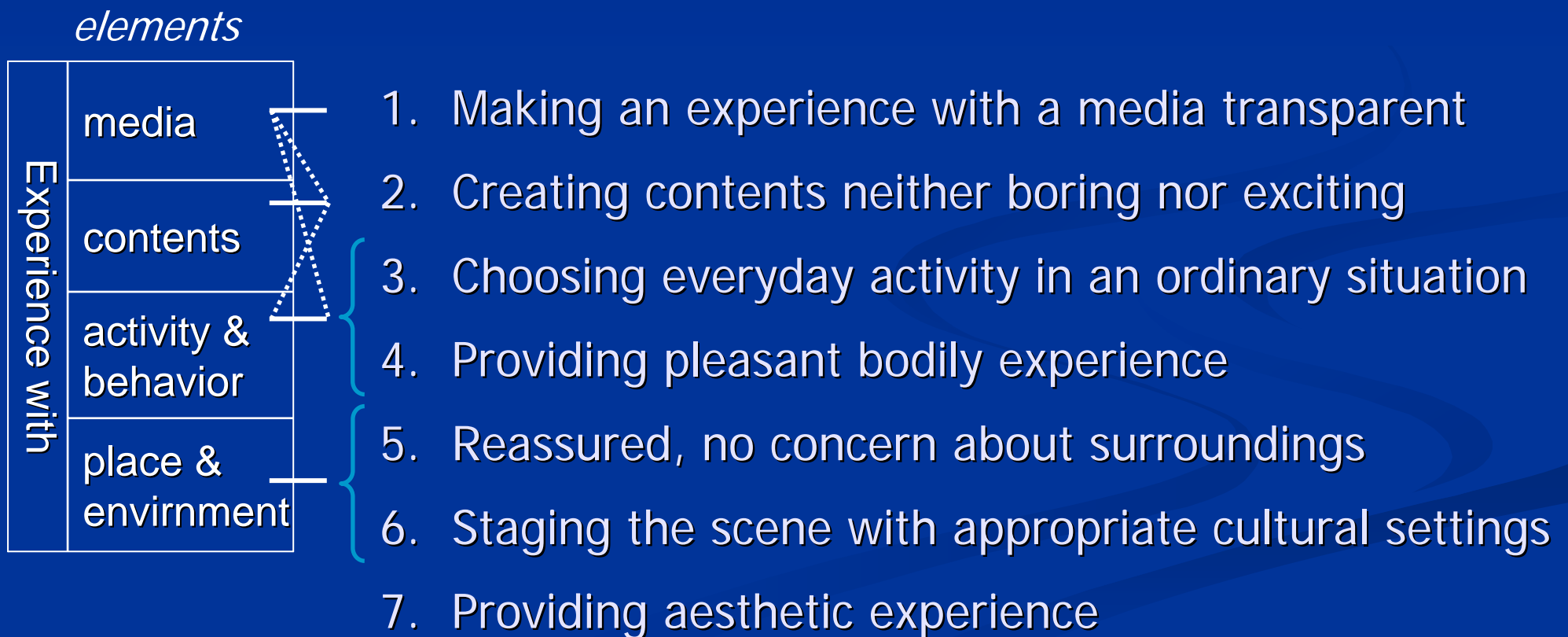


Not bored, tired

sleepy

Designing Relaxed Computing - Design Considerations

- Seven considerations corresponding to design elements





1. Making experience with media transparent

- Well-known topic, but new challenge of interaction technology
 - Supporting non-goal oriented
- A possible solution: non-purposeful interaction
 - Passive interaction technique: breathing, brainwave, eye-gaze
 - allow users to shape the experience without demanding active participation
 - Utilize natural bodily movements or accustomed familiar method:
 - gestures, walking, waving hands, grasping, etc.

EEG



BrainBall
(Hjelm et al. 2000)

Gaze-tracker



MilkyWay
(Kinoe & Hama, 2003)
CHI 2007, San Jose

Motion & Pressure



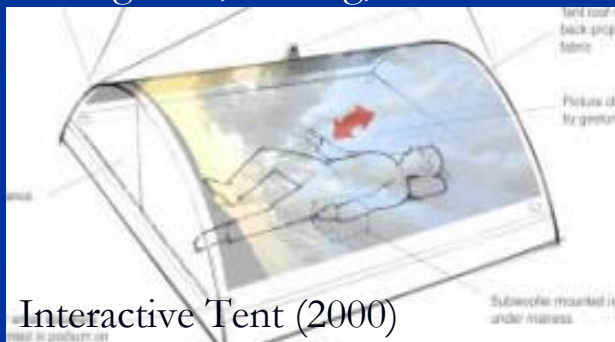
eMoto
(Sundström et al., 2004)



4. Providing pleasant bodily experience and allowing natural posture

- Importance of bodily experience for relaxation
 - Experience resides also in our bodies
- Relaxation depends on bodily conditions, both in physical and biological way
 - Walking through slowly → essential for experience in Japanese Garden

Sensing bodily movements such as turning-over, shifting, etc.



Interactive Tent (2000)

Playing with rollers

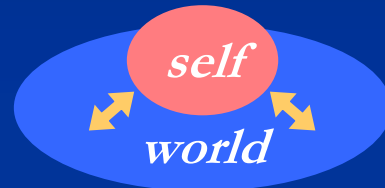


InTouch (1998)



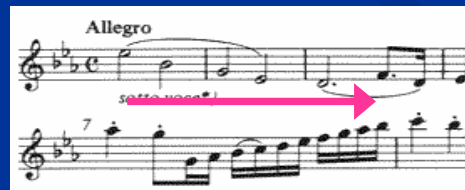
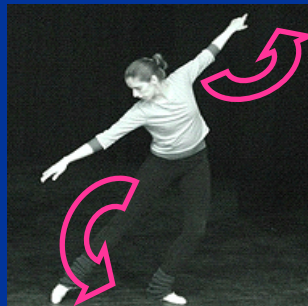
7. Providing aesthetic experience with a sense of "equilibrium"

- An experience is a product of *continuous and cumulative interaction of an organic self with* some aspects of *the world* in which they live



continuous, cumulative interaction

- An aesthetic experience involves *temporal qualities* and constitutes an integral experience.
 - ex) listening to Jazz, reading a poem, watching a painting or modern dance, walking in a Japanese Garden,...



To provide unity in and through varied parts of an experience with a system

- Different aspects of design elements are made to come together as a whole

Concluding Remarks

- Relaxed Computing: A New Design Direction
 - Proposed seven design considerations
- Provide unity in and through varied parts of an experience with a system
 - Different aspects of design elements are made to come together as a whole, along with the progress of experience
- More works needed, especially ...
 - Iteration of:
 - ✓ Develop RC Design Requirements
 - ✓ Develop RC Applications



Thank you.

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