Analysis of human behavior in everyday life's contexts, for the development of new technologies in support of the improvement of life quality and well-being

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INTRODUCTION

Among the various fields that interest psychology, one of the prerogatives is the analysis of all those daily activities carried out by people of different ages and related needs in everyday contexts. Specifically, **life-span psychology** studies the entire human life cycle, as it examines the psychic functions that suffer the incessant evolutionary changes along the course of life: development covers the entire existence (Baltes and Reese, 1977). For Domotics, technologies are deeply related to the **user's mind** and its way to perceive, remember, learn, communicate and pay attention. Therefore, the study of mind's processes, in a **life cycle perspective**, can contribute to the creation and development of smart devices. Moreover, in view of **Ambient Assisted Living**, in particular the elderly and the people with disabilities, benefit from a domestic environment structured appropriately. A domotic environment improves in fact the existence of today and tomorrow. It offers devices that make life easier, ensuring the maintenance of a certain **level of autonomy**, develops skills of special users in relation to their possibilities for **social and working integration**, offsets the various **functional limitations**, whether motor, visual, intellectual, etc., also supporting home care.

RESEARCH QUESTION

"Is it possible to create the right comfort, minimizing the user's activity when he/she is searching for it?"

GOALS

- Deepen the study of different aspects of *human behavior* in everyday life's contexts;
- Collect data to design and produce, in the future, a flexible, smart and multifunctional indoor system, able to provide the user with the right *comfort* (thermal, luminous, acoustic, etc.), in private and institutional environments, in particular for those people with autonomy problems.

METHODOLOGY

- Initially, the research has focused on aspects that have a direct impact on **Indoor Environmental Quality (IEQ)** [thermal comfort, indoor air quality, lighting, acoustics and control systems, etc.], which are intrinsically linked with the concept of comfort and are related to different aspects of human behavior in everyday life's contexts;
- Next, we focused on temperature and we built a checklist in order to detect the different reactions a user has when feeling uncomfortable with the environment around him/her, specifically indoor ones, in terms of temperature. We are using it in various indoor environments, public and private, such as houses, offices, universities, etc., both in **Italy** and **abroad**;
- We are also taking note of **date** and **place** of observation, **age** and **gender** of the observed people, **indoor and outdoor temperature** of the environment examined, **gradualness** of the behaviors and the **most recurring** of them;
- About **Ambient Assisted Living**, we contacted **5 health-care structures** (nursing homes and rehabilitation centers) in the center of Italy. These structures have been selected on the basis of the Regional offering and the will to participate in this project;
- Within the structures, we are noting everything **under or above the threshold** of normal conditions, just considering it irregular and, for this reason, symptomatic of some discomfort or disease;
- From late October, we just started making **observations** in the field to collect data about behaviors and live reactions on temperature, light, security, etc. of the elderly that live in these structures;
- We are conducting **interviews with professional experts**, in view of "combination of skills", to gather opinions and information based on their direct experience with the context and the people who inhabit it;
- We are also conducting **interviews with independent people aged 80 and over** to gather information about their daily habits for the future preset indoor system.

DETECTION INSTRUMENTS

-Checklist: to collect data about: How a human subject behaves when feeling (too) hot or (too) cold in a certain space with a given indoor and outdoor temperature? What kind of actions he/she performs on him/herself and/or on the environment?

-Interviews:

- ***Professional Experts:*** We devised an interview in which we ask to analyze a list of possible behaviors that an elderly person could implement in an indoor environment and to specify which ones can be perceived as symptoms and, eventually, symptoms of what type of discomfort or disease. We are also asking to consider any age and gender difference about these elderly people;
- ***Independent people aged 80 and over:*** We devised an interview to gather information such as the time in which the elderly person carries out certain activities, the daily frequency of these and in what way these activities change according to all four seasons. We are also taking into consideration people that live in various Italian regions and possible gender differences about their habits.

COLLECTED DATA

OBSERVATIONS	
PLACE	NUMBER
Different indoor environments: **Houses, Offices, Universities, etc.**	285
AMBIENT ASSISTED LIVING	
Fondazione I.R.C.E.R. - Assunta of Recanati (MC)	10
Villa Letizia of Civitanova Marche (MC)	15
Santo Stefano of Porto Potenza Picena (MC)	12
Casa Hermes of Loreto (AN)	14
Casa di Ospitalità of Castelraimondo (MC)	7

INTERVIEWS	
PEOPLE	NUMBER
Professional experts: **Doctors, Psychologists, Nurses, Physiotherapists, Professional Educators, Auxiliary nurses**	21
Independent people aged 80 and over	8

DATA ANALYSIS

All the observations and interviews are still in progress and also their analysis.

FUTURE PERSPECTIVES

- Go on with the observations collection in various indoor environments with the checklist;
- Go on with observations and interviews in health-care structures;
- Conduct focus groups with different professional experts;
- Go on with interviews with independent people aged 80 and over;
- Analyze all qualitative data to conceive a flexible, smart and multifunctional indoor system, able to provide the user with the right comfort (thermal, luminous, acoustic, etc.), in private and institutional environments.

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