

SEMIOTIC MEDIATION FOR THE SUSTAINABLE DIGITAL EMPOWERMENT OF OLDER ADULTS

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Abstract

As digital technologies proliferate, older adults are still facing significant challenges in achieving sustainable digital empowerment. This qualitative study examines the metaphorical registers spontaneously mobilized by seniors when discussing digital tools. It also highlights subjective semiotic framings which hinder their digital acculturation. Through ethnographic observations of digital literacy training, we identify diverse metaphorical projections conveying apprehensions (technologies as “nests of problems”, “magical” realms) but also motivating drivers towards meaningful digital

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appropriation. The findings underscore the importance of symbolic mediation strategies, in order to deconstruct inhibiting traditional theories and foster technology uses rooted in the life contexts of seniors. By elucidating the complex interplay of cognitive, emotional and cultural tensions shaping digital relationships, our research project argues for designing digital training less as technical instruction than as holistic empowerment journeys integrating identity-related dimensions. Ultimately, research on these semiotic foundations contributes to broader societal efforts that ensure equal voices for diverse knowledge approaches in an increasingly AI-dominated world. Only through such inclusive mediation efforts can we truly accompany digital “immigrants” toward affirmative technological citizenship.

Keywords: digital empowerment, older adults, metaphorical registers, semiotic mediation, digital acculturation

The rapid evolution of digital technologies has brought about major societal transformations, raising significant challenges for segments of the population less familiar with these tools. Older adults, often referred to as “digital immigrants”, can face particular difficulties in embracing the digital world and developing sustainable digital skills. While operational training courses exist, fewer initiatives address the deeper symbolic dimensions and mental representations which shaping the relationships of seniors to technology. This research project examines the metaphorical registers mobilized by elderly learners when discussing digital tools, highlighting the importance of semiotic mediation for enabling genuine and lasting digital empowerment.

By the “sustainable digital empowerment” of seniors, we are referring to an emancipatory acculturation process which allows this population to fully appropriate digital technologies in line with their realities, aspirations and life rhythms. Beyond simply acquiring operational skills, it involves developing a true cognitive ease, a form of “digital citizenship” which fosters social inclusion, well-being and self-expression in the hyper-connected age. This empowerment relies on mediations transcending purely technical dimensions to integrate the symbolic, affective and identity-related dimensions structuring relationships with digital technologies.

The notion of semiotic mediation refers to the interpretive frameworks, imaginaries and symbolic representations which mediate our relationship to objects and situations. These subjective meaning-making processes pro-

foundly influence learning, practices and behaviors. In the digital realm, previous research has shown that metaphors and symbolic projections play a key role in shaping uses and appropriation, particularly among vulnerable publics with limited technical mastery. However, these representational dimensions remain underexplored in digital literacy programs targeting seniors.

Digital inclusion, defined as emancipatory access and use of digital technologies for all, constitutes a major social issue highlighted by numerous works in the humanities and social sciences. The concept emerged around the turn of the 2000s, driven by a political will to face digital divides within contemporary societies. Beyond access to digital tools, the aim was to foster socially inclusive uses.

The adoption and use of ICTs by older adults is influenced by a complex set of psychosocial and motivational factors. Although material and economic obstacles are important, recent research has underscored the key role played by psychological, social and cultural dimensions in structuring digital behaviors. These often invisible psychosocial barriers constitute a major impediment to digital inclusion of seniors, calling for a deeper understanding of their principles.

Indeed, the cognitive, affective and identity processes at play are nourished by a bundle of sometimes contradictory social representations about aging and ICTs. Between deficit imaginaries and promises of emancipation, the subjective relationship of seniors to technology use has proven to be highly ambivalent. It is precisely this tension which needs to be analyzed in order to better grasp the psychosocial levers for ICT appropriation through the lens of age.

Moreover, studies show that regular internet use improves psychological well-being, reduces feelings of loneliness and prevents cognitive decline in older adults (Khosravi & Ghapanchi, 2016). Corroborating these results, a longitudinal study in the UK has revealed that persistent non-use of ICTs significantly increases risks of social isolation and dependency among seniors (Ueno et al., 2023). The British study (Ibid.) highlights the amplifying effects of various disadvantages (gender, housing, territorial divide, ethnicity) on internet non-use among the elderly, underscoring the weight of attitudes and motivations, thus confirming the vicious circle between digital and social exclusion in old age, calling for targeted interventions.

Ultimately, fostering positive and empowering representations of connected aging appears as a decisive lever to stimulate engagement among seniors. However, this shift in mentalities cannot ignore a fine-grained accounting of perceived and experienced vulnerabilities in old age, in order to better address them.

Theoretical Framework

This research work draws on several complementary theoretical perspectives. First, we focus on sociocultural approaches for learning, considering it as a process grounded in social interactions and mediated by symbolic artifacts inherited from culture (Vygotsky 1978; Wertsch 1991).

This initial anchor is articulated with the contributions of psychosocial currents highlighting the complex interweaving between cognitive, affective, and identity dimensions in shaping representations, motivations, beliefs of personal efficacy, etc. (Deci & Ryan 2000; Carugati & Perret-Clermont et al., 2004).

Secondly, we refer to conceptual metaphor theories (Lakoff & Johnson 1980) which have revealed the deeply structuring character of metaphorical projections in the organization of our mind, rather than just being rhetorical or ornamental devices.

Metaphor involves using a word with a sense removed from its original meaning. Lakoff and Johnson (1980) proposed that metaphor is not just about using words, but about making connections between concepts.

Metaphors can “select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation” (Entman 1993: 52).

Some metaphors introduced in public discourse to frame an issue may gradually become conventionalized: they become standardized and unnoticed ways of commonly referring to this issue in everyday discourse (Burgers 2016). However, a conventionalized metaphor does not necessarily remain constant over time. A shift in the conventional metaphors speakers of a language ordinarily used to frame an issue often indicates and results from a modification in their beliefs or experiences of this issue, which are socially and culturally rooted (Jensen 2015; Nascimento & Chown 2023).

However, the extent to which the internet, or indeed any mass medium, can be separated from the “real” place of our everyday experience has been questioned. Deuze (2012) goes even further to argue that, in the early twenty-first century we do not just use more media, nor do we use these media more often, but we live our everyday lives through media and our experience of reality is almost completely mediated.

What Markham foresaw is essentially an evolutionary change in the metaphors used for the internet, whereby “old metaphors are slowly replaced by new ones over relatively long stretches of time” (Burgers 2016: 256). Markham was not alone in thinking that a day would come when the

internet is ordinarily spoken of as real place, as one of the multiple ways of experiencing real life (Nunes 1995; Blavin and Cohen 2002).

Applying these complementary theoretical lenses, the present study focuses on the metaphorical registers and symbolic projections through which older adults, often labeled “digital immigrants”, make sense of digital technologies. Unraveling the semiotic framings which underlie the experiences of this population appear all the more pressing against the backdrop of the rapid proliferation of artificial intelligence across daily life spheres. Indeed, while GAI (Generative Artificial Intelligence) is increasingly omnipresent, a significant proportion of older people remain distant from the most basic digital tools and environments, such as computers or smartphones.

By highlighting the metaphors, imaginaries and cultural tensions that shape older adults’ attitudes towards ICT, we seek to elucidate the symbolic barriers that perpetuate digital exclusion well beyond operational skills deficits. Our premise is that sustainable digital empowerment relies on mediation strategies that deconstruct limiting popular theories and promote authentic and meaningful technological appropriation. Analyzing the metaphorical discourses of seniors can thus inform more culturally-adapted, inclusive pedagogical approaches to facilitate their digital acculturation as “immigrants” to these new experiential realms.

This symbolic reframing work contributes to broader cognitive equity endeavors. It ensures diverse knowledge systems, and life-world experiences have an equal voice in an increasingly GAI-driven society. As technological change overwhelms many people’s symbolic coping mechanisms, research into the semiotic foundations of human-technology relationships becomes all the more vital.

Methodology

This qualitative study was designed to gain deeper insights into the metaphorical registers and symbolic representations mobilized by older adults when discussing and engaging with digital technologies. The research took an interpretive approach grounded in direct observations of training sessions and spontaneous discourse.

Data Collection

The study was conducted through non-participant observation of informal focus group discussions and interviews during digital literacy training courses for older adults. The fieldwork took place in the city of Metz, France between October and December 2022. Data was collected across 6 separate training sessions spanning a total of 54 hours of observation time.

The sample consisted of 39 elderly participants aged 65 to 82 years old enrolled in a digital skills program. The aim of the courses was to develop basic competencies in using computers, internet, and common digital tools/applications over a 3-week period. Thus, the observation was passive and was carried out directly at the back of the classroom, and consisted of taking handwritten notes without intervening during the sessions.

The focus was on capturing spontaneous verbal expressions, conversations, questions and narratives from learners about their experiences, challenges, emotional positions and meaning-making in relation to digital tools and environments. Particular attention was paid to metaphorical formulations, imagined analogies or symbolic projections used by participants to externalize their conceptions and interpretations of technologies.

Throughout the observation process, detailed field notes were taken, in order to transcribe key segments of discourse as accurately as possible. After each session, the notes were reviewed and expanded with additional contextual details captured in a research diary.

Data Analysis

The full corpus of compiled notes was then subjected to an iterative coding process inspired by thematic analysis principles (Braun & Clarke 2006). The first cycle utilized open coding techniques, in order to identify recurrent metaphors, symbolic referents and figurative expressions employed by participants across the dataset.

In the second cycle, these initial codes were grouped into broader thematic categories representing interpretive metaphorical registers (e.g. threat/danger metaphors, temporality metaphors, symbolism of control, etc.). Particular attention was paid to contrasting or ambivalent instances within the same register to capture nuances.

The resulting thematic structure was then reviewed against the full dataset and existing literature, in order to refine coherence and ensure robust representations grounded in the empirical material. Key excerpts were considered as illustrative verbatim examples substantiating each overarching metaphorical category.

It is important to note some limitations of this methodology. The non-intervening observer position makes its immersion relatively limited, which could hinder the deep contextualization of some metaphorical uses. The public setting of the group may also have reduced spontaneity compared to individual interviews for some participants. However, efforts were made through extended engagement over multiple sessions to improve reliability.

Results

The analysis revealed a wide diversity of metaphorical registers mobilized by participants to express their relationship to digital tools and environments:

1) Metaphors of threat/danger

Computers were repeatedly depicted using metaphors connoting threat and danger, such as being described as “nests of problems and fraud”. Actions on digital devices prompted expressions of “fear of messing everything up” or causing irreversible damage. One participant notably declared: “In the end, the computer is a nest of problems, of fraud!” after a lesson on identifying fraudulent emails. This cluster of metaphors conveys strong feelings of mistrust and apprehension towards the digital world.

2) Representations of complexity/strangeness

Digital operations and codes were often portrayed through metaphors of inscrutability and mysticism, experienced as strange, complex realms. Passwords were directly qualified as “magical” by one learner struggling to type it in correctly. Another stated: “I won’t be able to remember all of this, it’s clear and clean” when downloading an image, pointing to perceived complexity. Expressions such as “there are many manipulations to do” or “it’s all that I don’t know” (referring to Facebook, Twitter, YouTube) framed the digital as an arcane, labyrinthine universe.

3) Symbolism of control/lack of control

Contrasting metaphors surfaced around the notion of control. Some participants favored metaphors associated with printed, well-formatted documents (“a clean, printed thing”) with authority and impact, preferring this to handwritten notes. This echoes a desire for mastery. Conversely, others expressed losing grip through phrases like “I don’t dare touch anything anymore!” or “if I move it [the laptop], I’m afraid I won’t manage to reconnect to the internet”. The portability of devices seemed to threaten their fragile sense of control.

4) Temporality projections

The fast pace of digital evolution was a recurring source of metaphorical depictions. Learners described the digital world as “going too fast for me” or “evolving too quickly”. One vented: “Digital goes much too fast, at least for me. (...) The problem is that it evolves too fast”. These metaphors convey a

sense of decoupling between digital temporalities and personal rhythms of life.

5) Cultural tensions

For some, the digital realm was constructed in metaphorical opposition to valued spheres of life. One participant highlighted: “I like nature, the forest, hiking. (...) I don’t feel at ease, nor in line with this [digital] society”. The digital seemed antithetical to certain traditional reference frames and lifestyles.

6) Psychological obstacles

Psychological brakes were frequently verbalized through metaphors expressing “fear” as a blocking force (“fear is what blocks me”) and lacking daring (“I don’t dare anymore”). Another recounted: “At first I did better than my husband because I used it at work. But now he has caught up with me. Actually, it’s mostly because I’m afraid, I don’t dare. So really, it’s fear that blocks me a lot.”

7) Motivation drivers

While obstacles abounded, instances of motivation drivers were also metaphorically captured. Engaging in situations “that will really be useful” (like buying train tickets online) were construed as powerful engagement levers by participants. As one senior put it: “I’m glad, finally something that will be useful to me (...) And then when it really serves me, well I’m motivated.”

8) Posture of learning

Many narratives represented the acquisition of digital skills as a path to be followed in a pragmatic and step-by-step manner. They mobilized metaphors of “beginnings” and “driving”, with supportive statements like: “It’s already very good, you have to start somewhere (...) it’s like driving, it will come with practice”. Conditional linguistic forms (could, would) also suggested conceiving technology mastery as a gradual progression.

9) Critical perspectives

While the observation is initially marked by perplexity, some interventions have signaled the emergence of more detached and critical attitudes. Redundancies between tools were questioned (“Doesn’t Facebook overlap with Google a bit?”) and questions have been raised about the real added value of certain uses compared to offline alternatives.

This rich tapestry of symbolic projections and metaphorical discourses illustrates the complex interplay of cognitive, emotional, experiential and

cultural factors which underpin digital technology relationships among seniors. They reveal simultaneously inhibiting apprehensions and motivating drivers which training programs must resolve through finely tuned semiotic mediation strategies.

Discussion and Conclusion

The diversity of metaphorical registers identified in this study offers a rich window into the complex psychosocial and cultural dynamics shaping older adults' relationships with digital technologies. Several key insights emerge:

Firstly, the results highlight significant symbolic obstacles and threatening imaginaries that training programs must attentively address. The depiction of computers as "nests of problems and fraud" or digital operations as "magical" speaks to deep-seated apprehensions rooted in feelings of strangeness, lack of control, and even potential menace from these tools. Such anxieties likely stem from limited prior exposure but are powerfully reinforced by vulnerability discourses proliferating in public spaces. They risk becoming self-fulfilling by severely hampering motivation and self-efficacy. Overcoming these inhibiting metaphors will require dedicated semiotic mediation strategies centered on reassurance, demystification and appropriation through concrete, meaningful usage situations chosen by learners themselves.

Secondly, the temporality metaphors ("going too fast", "evolving too quickly") underscore generational tensions around the speed of change. The design of training must be attuned to the demands of seniors for measured, step-by-step progressions which honor their life trajectories and developmental needs. An overly accelerated pace disconnected from personal rhythms seems counter-productive. Instead, an open-ended, continuous learning model focused on ensuring sustainable mastery over a few key usages appears more advisable.

The symbolism of control metaphors such as "not daring to touch anything" or fearing laptop mobility also points to critical self-esteem issues around technology, particularly for this segment of the public with limited opportunities to develop self-assured digital identities over their lifetimes. Fostering an internal locus of control, a sense of agency through empowering experiences scaffolded by trainers emerges as paramount.

Meanwhile, the motivational metaphors equating usefulness with engagement ("when it really serves me, I'm motivated") provide encouraging indications for stimulating initial investment. Co-constructing training

pathways centered on the lives and priority needs of participants is decisive in overcoming inhibitions.

Interestingly, cultural tensions surfaced which separate digital worlds from certain life spheres like nature. This symbolic divide highlights representation nodes requiring bridging work to facilitate acculturation and combat rejection framings. Drawing parallels with valued reference activities could facilitate meaning transfers and soften perceived cultural ruptures.

Finally, the critical perspectives such as tool redundancy interrogations which occasionally surface suggest existing reflexive capacities to build upon. Nurturing such distancing and analytical skills through collective discussions and semiotic explorations could accelerate appropriation by repositioning learners as actors shaping technology usages to personally resonant ends.

Overall, these results confirm the paramount importance of integrating symbolic mediation components into digital literacy programs beyond purely operational skill transmission. Only by eliciting, deconstructing and positively resignifying the metaphors and imaginaries surrounding digital culture can we effectively accompany elders towards autonomous digital empowerment aligned with their life contexts and aspirations. The key lies in conceiving training less as technical instruction than as holistic acculturation journeys towards inhabiting these new worlds with affirmation and self-determination.

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