From Inclusive Theatre to inclusive technologies: Lessons learnt from co-designing Touch Tours with an Inclusive Theatre group

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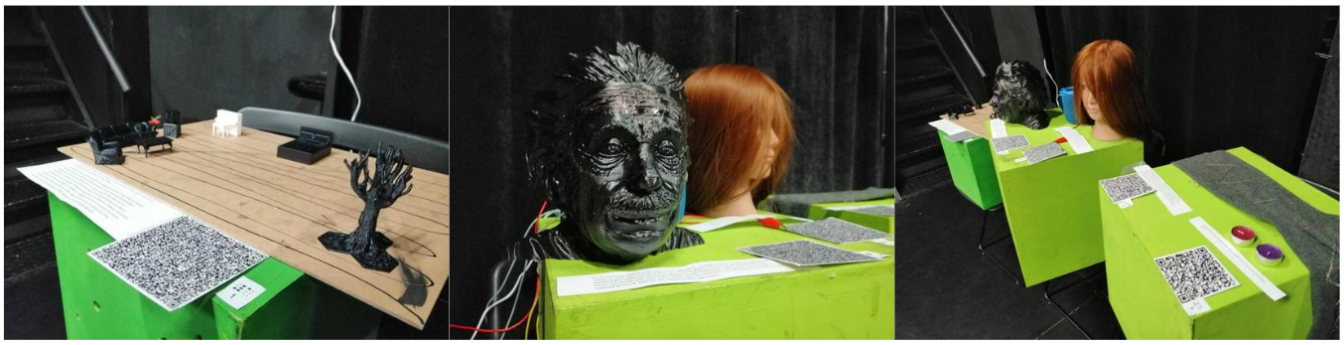

Figure 1: Researth through Design - Prototype System

ABSTRACT

The HCI community has attempted to understand the role theatre can play in systems design, but the ways inclusive design methodologies could benefit from inclusive theatre are underexamined. To better understand inclusive theatre practices for technology design, we worked with the first professional inclusive theatre ensemble in Greece, which faced difficulties due to social distancing during the Covid-19 pandemic. In this paper, we attempt to better understand inclusion within such theatre practices through the co-designing of a prototype digital system for Touch Tours, an experience through touch service. We conducted a series of research through design activities with the group, building on eighteen months of ethnographic research. Our goal was to develop a service based on their practices. We contribute design implications for inclusive services, with respect to equity in experience, which enhance the activistic character of the movement, and HCI research concerned with developing technologies that support inclusion.

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CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in accessibility**; **Accessibility technologies**; *Haptic devices.*

KEYWORDS

Touch Sensory Tours, HCI, Accessibility, Theatre, Social Model of Disability

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1 INTRODUCTION

People that experience disability, have not enjoyed equal access to traditional theatre and modern theatre still struggles to facilitate equitable access. This paper describes work situated within a larger project that explores inclusive theatre based on the social model of disability (SMoD) [46]. Specifically focusing on the service of Touch/Sensory Tours (TSTs). Theatre venues offer TSTs through Audio Description and touch during performances to create stimuli that substitute for visual ones for the Blind or Visually impaired (B/VI) members of the audience [63]. TSTs' value is recognised

[63, 70], but the availability of the service is limited, because of organisational and timing constraints [35]. Touch tours allow blind and partially sighted people to get hands-on with theatre props and costumes before an audio-described performance, creating a more meaningful and immersive experience, thus the absence of the service can limit the experience of B/VI theatregoers and discourage them of participate in such visually dominated artistic experiences[66].

We argue that mediating such services with technology will make them available in more spaces as technology can remove the barrier of actors' physical presence during the service opening access to the service of TSTs, thus assisting in making art more inclusive and experience-centred for a wider range of audiences [16, 37]. Wider availability of the service will contribute to advocacy for inclusion by shedding light on the lack of inclusion in art and the need for accessible spaces offering experiences. Through this project, our main aims were to understand if the transfer of such a human-mediated service to a digital-mediated one is a sensible choice that has the potential to increase the availability of the service, understand which considerations should be taken into account in the design of such digitally-mediated touch services concerning the notions of inclusion and equity to experience, and further examine the advantages and/or disadvantages of the introduction of such services to a wider audience.

This paper presents the co-design approach for technologically supported inclusive theatre TSTs with our collaborators, THEAMA, Greece's first professional inclusive theatrical group. We conduct a focus group with them to gauge our partners' opinions on the service, a pre-workshop activity to allow them to reflect on the meanings of touch and a research workshop on TSTs. Our contribution is twofold: 1) empirical contributions on how inclusion is understood and practised within such theatre groups, and 2) design implications for the design of digitally-mediated TSTs. In our discussion, we address the implications for the design of technology to support theatre services and performances, as well as how the findings may be applied to more inclusive design approaches within HCI.

The empirical contributions shed light on the importance of involving theatre partners in the co-design process and the ways that such synergies can provide unexpected meanings to inform the design. This process offered us the opportunity to take into account considerations such as creating advocacy and supporting activism through such designs and let us understand that such systems (should) serve more than their initial objective, of accessibility services, and thus there is a need for flexibility in their design. The design implications highlight the importance of creating a platform for flexible and modular TSTs that can be easily customized to reassure the sustainability of the service in the current sociopolitical situation while emphasising the need for including accessibility experts from the initial stage of the design process. The discussion of the implications for the design of technologies to support theatre services and performances is also relevant to more inclusive practices of design within HCI, which can benefit from the paper's insights.

2 RELATED WORK

2.1 Theatre, Inclusion, and Disability

Inclusive theatre is defined as a form of artistic expression that includes artists of all colours, genders, races, religions, nationalities, and ages, whether or not they are experiencing disability, with the main ideological approach of equal participation and integration of all people, without exclusions in art and, and consequently, in society [10, 73]. Along with promoting inclusion in participation, the inclusive theatre approach seeks to improve accessibility on and off stage [2], raise awareness of rights issues [11] , and promote art and inclusion. Theatre accessibility encompasses all factors related to physical and content accessibility: physical accessibility makes the theatre space accessible and friendly (e.g. Wheelchair-accessible entrances, exits, hallways, bathrooms, dressing rooms, elevators, dynamic seating, and availability of quiet spaces), and content accessibility grants equal access to the theatre experience (e.g. Sign Language interpretation, Closed Captioning, audio description, TSTs, and sensory-friendly performances) [3].

In addition to providing a platform for disabled performers, who have historically been marginalised in both theatre and society [22], inclusive theatre also educates viewers on culture-based activism [11, 71].

Involving technology in art produces different ways of experiencing and producing art, creating interconnections among the disciplines of art, technology, and research [23]. In HCI the medical model of disability has dominated the field, designing and delivering products for 'non-disabled' people and trying to adapt the same technology for people experiencing disability only after the delivery of the final product [26]. Even in the most researched topic in accessibility, motor impairments, almost one-third of the research was conducted only with participants who are not experiencing disability [56].

The HCI community has started to change though, asking questions about who is involved in the research, how they are involved, and how to lessen the chance that research with and for particular groups will make them vulnerable [67]. As Mankoff et al. put it[38], the problem of following the medical model is the assumption that people facing disability are people who need help and assistance. At the same time, in their perspective which is focused on the sociocultural model of disability, the real need is a nonexclusive design approach, with respect to the culture that is connected to disability. For them, the element of culture is the key factor to avoid a design for 'normality' approach, thus they highlight the importance of connecting the field of assistive technologies to disability studies, and seize the available opportunities to connect with communities who are experts on the topic, *"to avoid well-meaning errors"*.

2.2 TSTs and Multisensory Experiences

Despite the name, TSTs are a multi-sensory service that aims to provide B/VI individuals with information about the props used, actors' clothing, and the stage's appearance. This includes stage tours and using other senses such as smell when plot-relevant [63]], thus accommodating some of the needs of Blind-deaf theatre-goers [34].TSTs can benefit everyone [6], not just people with disabilities [63]. The link between TSTs and live theatre is under-explored, with a few notable examples of what is possible [62, 64, 65].

In the last decade, HCI research has begun to recognise the importance of investigating the cooperation of senses in perceived experience by moving research further from traditional auditory and visual feedback [44], and drawing connections amongst the cooperation of different senses and emotions[25, 36]. Touch as a means of transferring information holds third place among the five senses, after the visual and the audio in HCI [44]. However, a sense of touch for transferring knowledge about the shape of objects to B/VI people is a common concept mainly to museums [4, 30] and became more popular with the wider availability of 3D printers to replicate museum artefacts [32].The move from knowledge to experience transfer has opened access to people who are excluded by certain forms of art, such as live dance performances and theatre, which traditionally mainly rely on the visual sense [27] or auditory description.

Hutmacher[28] attempts to understand the reasons for such a diverse bibliography on the visual sense by drawing parallels between the hierarchy of senses as perceived by ancient philosophers such as Plato and Aristotle and the funding available for sense research today. According to Hutmacher's research, Aristotle, while placing sight at the top of the hierarchy of senses, emphasised the importance of touch in understanding the world, a statement that has been recognised and established as still valid by modern philosophers and researchers. Hutmacher concludes this work by stating that the dominance of the visual senses is "at least partially a social construction" and calls for more balanced research among the human senses in order to increase diversity.

Moving a step closer to challenging the exclusion of B/VI and D/deaf people from art, current research allows people to feel choreography movements by exploring the affordances of surface[49] and vibrotactile [58] haptic technology, allowing them to understand the intensity of the dancers' movements and their positions on stage. Such services are typically provided in conjunction with Audio Description services, which are typically provided by human professionals who are in charge of describing what the rest of the audience can perceive through their visual sense [12]. Due to the high costs of the service, its availability is limited to the mandatory regulation governing disability rights [50], which primarily cover nonlive content, a gap that researchers are attempting to bridge through the use of metadata that may be available in conjunction with text-to-speech processes in the cases of live broadcasts [35], or by prerecorded audio descriptions in combination with time alignment algorithms for repeated live performances [72].

Disability and art provide opportunities for the HCI community to shift ableist notions from developing solutions to identifying opportunities [8] and to employ research methodologies that bridge the unbalanced power dynamics between researchers and participants [61, 66]. According to Spiel and Angelini [61], the institutional approach that accompanies the research limits work and creates a need for more nuanced and open research approaches that can recognize and, critically, pursue opportunities that arise during collaboration with participants.

Understanding the multimodal nature of humans is not a new concept. Originating from ancient philosophy [28] it progressed to synchronous robotics [47] and, in HCI, specifically the use of more than one primary sense [5]. Simpler combinations of vision and touch [55] lead to more complex ones, which are based on new technology that supports touch, smell, and taste [42, 45]. Obrist[43] observes that *"the most profound future digital technologies are those that unite all the main senses (sight, hearing, touch, taste, smell) into compelling experiences."*, and speculates that soon-to-be-created humanoids will be equipped with all of the main human senses.

2.3 Context

2.3.1 Disability - The Greek Context. This work took place in Greece where accessibility of built infrastructure and content is a matter of major concern. Many persons experiencing disabilities are unable to participate in society or live independently due to a lack of financing and necessary legislation [7, 33, 52]. The Hellenic Greek parliament just voted in September 2017 to adopt the United Nations Convention on the Rights of the Person with Disabilities, despite the fact that the EU has been enforcing it since 2011. This vote took place barely a few months after the Greek Ministry of Culture eliminated the -able-bodied- criteria for entry to tertiary-level drama study (in February 2017) [1]. This elimination was the result of actions carried out by Greek activist groups over several years [1].

2.3.2 Our partners THEAMA & ISON. We chose to collaborate with THEAMA, an inclusive professional theatrical ensemble. The THEAMA [1] ensemble was founded in 2010 as a professional inclusive theatre group for people, experiencing disability or not, operating in Athens, Greece. Their goal was to address a gap that existed in the sector of professional training and career-oriented approaches for people with disability who are actively involved in the performing arts. Its members are professional performers who are members of the Greek Actors Association, the regulating body for all actors in Greece. THEAMA and the inclusive dance ensemble EXIS founded ISON [2], Athens' first inclusive education project for artistic expression.

Our cooperation with THEAMA & ISON allowed us to closely work with people, who are involved in art either as professionals or as students targeting becoming professionals, are experts in the topic of disability, and they are either familiar with or experts on inclusive theatre and inclusive education. Moreover, through this synergy, we had the opportunity to conduct research about TSTs in cooperation with B/VI people who have a close connection to art. Thus, ensuring that B/VI people who are the primary beneficiaries of TSTs will inform this research with their expertise, while experiencing art in their everyday lives provided us feedback for their perceived experience in a topic that the visual element is of significant importance.

3 METHODOLOGY

This work approaches Accessible design based on the SMoD as outlined by Oliver [46], in accordance with the perspectives of our collaborating teams. According to Oliver's model, "impairment" is dysfunction, while "disability" is the limitation that dysfunction creates because society fails to provide the infrastructure required to include people with dysfunctions. This distinction highlights that the problem is not disabled people failing to reach their potential

[1] https://theamatheater.gr/en/intro/
[2] https://ison.com.gr/

but society emphasising the consequences of their impairments [41, 46].. In this work, inclusion is defined by the disabled rights movement's slogan *'Nothing about us, without us'*, which calls for the inclusion of disabled people in all stages of decision-making [17]. In our case, this slogan is interpreted as including disabled people in all stages of the design process.

The TSTs design process followed a constructivist process, as the existence and use of TSTs service in theatre was a new concept for the researchers, due to their rarity in Greece; however, due to our design background, we were aware of the use of touch-enhancing accessibility in museums or art installations [4, 30].

While our engagement with the groups continues, we share here the design of technology-supported TSTs. This was grounded in ethnographic work that led to an initial focus group with the THEAMA professional inclusive theatre ensemble, an asynchronous pre-workshop activity, a research workshop with members of the THEAMA group and the ISON inclusive education project, and an initial prototype, which was used during and after the workshop to collect participant reflections for future prototypes.

3.1 Ethnographic Research

The idea for automating the service of TSTs came as one of the results of the almost 18 months of ethnographic research engagement of the first author with the THEAMA ensemble. The work took place before and during Covid-19 lockdowns and, since the members of the group were in the most vulnerable groups in relation to Covid-19, the interruption of their physical engagements lasted longer than the lockdown period imposed by the Greek government. Although the artists were in their homes, their need for artistic expression and experimentation, worked mostly as an opportunity for our collaboration. It was the first time for them, that all their main interaction as their meetings and the lessons of ISON were conducted in the digital space. Moreover, it was the first time that they were feeling that it is better for them to stay away from each other and from their audiences. During our virtual meetings, we found a lot of natural brainstorming about the enhancement of the digital experience and the ways of finding substitutes for the normality we were all missing. The directors' restless artistic spirit, and the compulsory free time, accidentally led them to investigate the inclusion services of other theatre venues worldwide. Thus they came back with the proposal of incorporating TSTs in their services, and lots of questions, as well, about how such a service would be feasible, based on the current situation and the fact that they are a relatively small ensemble with limited resources.

3.2 Focus Group (FG) - (Understanding co-designers needs)

Because the idea for automating TST service came from the first author's previous research engagements with the THEAMA ensemble, we decided that this research should begin by discussing TSTs with THEAMA members, exploring their thoughts, perspectives, and ideas for introducing such a service in Greece. All of the participants (5 professional artists referred to as FGP1-5) were familiar with and had witnessed theatre TSTs in at least one performance as spectators. They were not told of our idea to incorporate the TSTs service into their work, allowing us to collect their initial

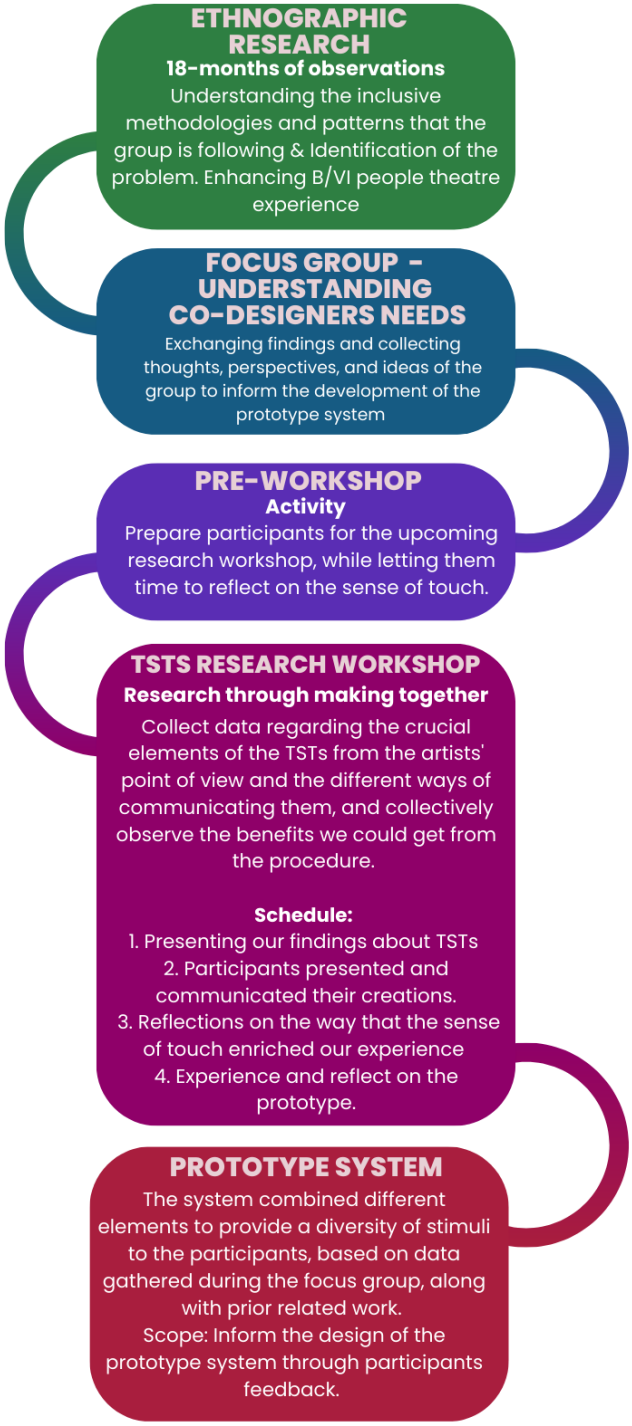


Figure 2: Step-by-Step Methods Diagram

reactions and thoughts. The following issues were discussed during this FG: 1. The participants' ideas and perceptions on the content and structure of the TSTs. 2. The most critical elements of the TSTs. 3. The parts that have not yet been included in the TSTs. 4. The

positive and the negative aspects of TSTs for the actors. 5. Their thoughts and ideas about the TSTs taking place remotely. 6. The possibility of TSTs providing added value to people other than the B/VI spectators.

Table 1: Focus Group Participants - THEAMA

Participant	Role	Pronoun	Identifies as Disabled	Visually Impaired
FGP1	Founder, Director, Actor	He/His	Yes	Yes
FGP2	Stage Director, Dancer, Performer	She/Her	No	No
FGP3	Sound Director, Sound Composer	He/His	Yes	No
FGP4	Actress	She/Her	Yes	No
FGP5	Actress	She/Her	Yes	No

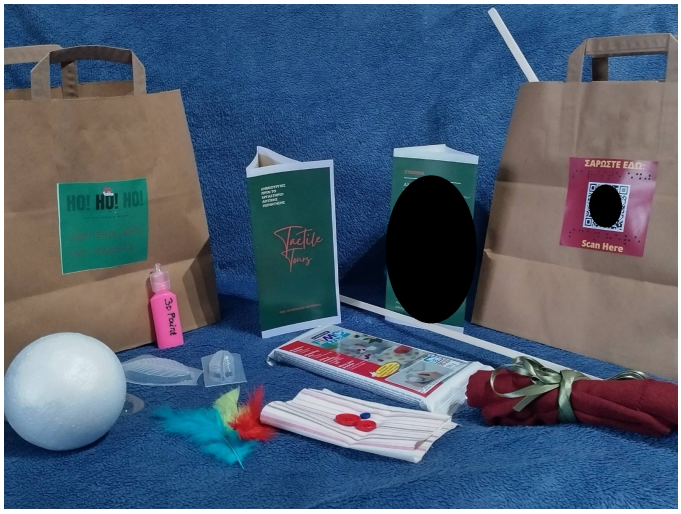
3.3 Pre-workshop Activity (PWA) - (Exploring touch)

To keep our participants engaged and allow them to reflect on the topic of tangible interactions, we prepared a small 'Arts and Crafts DIY Kit' and distributed it, while also encouraging participants to express themselves on themes and topics that arose during our previous engagements.

The ten kits that we created consisted of paper bags filled with supplies that would assist participants in creating artefacts to be used during the TSTs research workshop. We gave the bags to the THEAMA director, who distributed them to THEAMA actors and ISON students who were interested in the project. A flyer detailing the scope of the exercise, what the participants were expected to do with this gift, and our contact information was also included in the bag. We added a sticker on the outside of the bag with a QR code that directed screen reader users to the online version of the flier.The text 'Scan here' was written in English and English Braille, as well as Greek and Greek Braille, framing the QR code on either side. The recipients of the bag were requested to produce an artefact with specific importance and meaning to them based on themes provided by us, as well as prepare some communication material about their creation and a very brief performance related to it. The previous focus group activity data was used to shape the aforementioned themes.

3.4 TSTs Research Workshop - Research through making together and improvising

This was a double-scope workshop since we wanted to collect data on the main parts of the TSTs from the artists' perspectives and the various ways of presenting them, as well as collectively observe the benefits we could gain from the procedure and experience. 9 people



(a) The bag prepared for the pre-workshop activity with a flyer and the contents of the bag

(b) Performing and experiencing the prototype during the final part of the workshop

participated (referred to as WP1-9, as shown in Table 2), two of them B/VI. The first part of the workshop was dedicated to presenting our previous work and findings about TSTs to the participants, after which participants would present and communicate their creations. Because only three of the participants completed the PWA tasks, we had to adapt the workshop schedule by dividing the participants into two groups and asking them to create one artefact per group as well as a short performance related to their creations.

The performance was described as a one-minute artistic improvisation incorporating or relating to their creation. Following the completion of the activity, the discussion was dedicated to reflecting on the activity and the way that the sense of touch enriched our experience. This part of the workshop was dedicated to understanding the ways that the incorporation of the feeling of touch could enrich the experience of art both for the B/VI participants and others. We

chose to leverage the expertise of our participants in theatre and improvisation to gather feedback for our first prototype. They were asked to choose an object from a collection after touching it, and each object was associated with a character description written in Greek, English, Greek, and English Braille (As described in Table 3).

Participants were asked to interact with the prototype and provide feedback while speaking as the character shown on the card they were holding. They were given a fictitious scenario in which they are the audience to the first performance incorporating this service. We chose to include this activity in the workshop rather than simply starting another discussion because we saw that some of the participants might become more communicative and comfortable while improvising a character other than their own. The closing minutes of the workshop were dedicated to bringing ourselves back to reality and expressing thoughts and ideas about the workshop.

3.5 Research through Design - Experimenting with a Prototype System

Our prototype system was developed based on the information provided to us during the FG and prior related work [18]. By using a generative research approach, we hoped to learn more about the intended interactions that such an artefact or system should support [24]As a result, the system combined various elements to provide the participants with a variety of stimuli. Our prototype system consisted of a 3D-printed bust of Einstein, a barber mannequin head, a scarf, two scented candles of different fragrances, and a model top view of the space/stage with small-scale 3D-printed objects. Using conductive materials, all of the objects were connected to a Raspberry Pi. Each element was linked to a text that could be read through the printed text, retrieved via a smartphone via a QR code, or heard when the correspondent element was touched via a Bluetooth speaker (in this case, the script was pre-recorded).

4 FINDINGS

We gathered qualitative data from the aforementioned encounters in the form of audio recordings from workshops and interviews, which we later transcribed, along with ethnographic notes collected earlier. We employed Braun and Clarke's thematic analysis[13] to analyse this corpus of data; we first descriptively (and inductively)[14] coded the data, then we developed categories of codes and formed first themes reflectively, having the SMoD as a reference point.

4.1 Inclusive Artistic Expression

4.1.1 Reasons. The added value that the TSTs will bring in the accessibility services currently offered, was significant in the minds of all the participants, 3 of them were particularly worried about letting other people touching them, their clothes, or their faces, among the reasons, was the fear of COVID [P4], and the fact that a some of the actors might feel uncomfortable with close contact with strangers [P2, P5] due to social interaction anxiety. Other than anxiety, the sense and the experience connected to touch, were also examined, as from an artistic perspective touch is a type of interaction and its existence depends on the artistic frame [P2]. As P1 highlighted, there are cases in which touch might not be compatible with the character that the actor is performing. Moreover, all the actors mentioned that the time in which usually the TSTs are taking place (1 hour before the play starts), is important for them to calm down and concentrate on their work.

Therefore, the idea of working on the topic of TSTs was a nice fit for the continuity of our previous research engagements on the topic of inclusion in modern technologies, as this was a new service they would like to offer as an inclusive ensemble, and incorporation of technology could possibly provide solutions to the problem of conducting the TSTs themselves. During the FG, [P1] and [P3], who have director duties in the group, spoke to us about the practicalities, of deaf, hard of hearing, and B/VI people contacting them in the past to ask for short descriptions of the characters or any other material to have a better theatre experience when in the performance. During this ideation process, the team expressed their ideas about the utilisation of audio as a possible solution for serving the needs B/VI users.

> "There could even be a page offered via the site of the theatre group, in which every actor could offer [express information about] themselves, their character, and have this recorded information available there, so the blind people could access those files the previous day" [P4]

> "If that recorded information were available through an app [meaning a smartphone application] the people could even navigate themselves in the content even 10 minutes prior to the performance" [P1]

> "Even if there is special equipment, if we have recordings, the audience member has only to press a button, in this way the cost will remain low." [P1]

4.1.2 Prerequisites. As the discussion regarding ways of providing a service to the B/VI audience members without the presence of the actors was evolving, the idea of offering the service in combination with tangible probes was becoming more dominant in the discussion. *"There could be a [dedicated] space, that would host some fabrics, some objects of the performance, for the people to go and experience them"* [P4] although as [P1] added, due to the importance that the props have for the performance and the connection that actors might have with some of them, it would be important that those props be duplicates of those actually used during the performance.

We heard about the importance of bringing the spectator into a specific experience, and the connection that touch and the incorporation of other senses have to the experience creation. As [P2] expressed *"'If the actor wears a winter coat and the spectator touches a piece of the coat, this automatically means (for them) Winter, cold ...'"* All the participants had a common approach to the introduction of TSTs in the performances of THEAMA, which they perceive as a nice addition to the Audio Description service they already provide in their performances. They also made clear that there is no reason for the existence of TSTs in a performance that does not offer AD service.

With all the participants on the same page, trying to find the balance between the traditional way of conducting TSTs and their

Table 2: Research Workshop Participants: The table shows the participants' involvement in the THEAMA ensemble and/or ISON inclusive education project, their preferred pronoun, whether they self-identify as disabled, whether they are visually impaired, which of the two groups they are involved with, and whether they are students or professionals.

Participant	Role	Identifies as Disabled	Pronoun	Visually Impaired	Groups they are involved at
WP1	Founder, Director, Actor & Drama Teacher	Yes	He/His	Yes	THEAMA & ISON (Professional)
WP2	Sound Director, Composer, Dancer, Music Teacher	Yes	He/His	No	THEAMA & ISON (Professional)
WP3	Translation & surtitles synchronisation services, Drama Student	No	She/Her	No	THEAMA & ISON (Professional & Student)
WP4	Drama Student	No	She/Her	No	ISON (Student)
WP5	Drama Student, Actress	Yes	She/Her	No	ISON (Student)
WP6	Drama Student, Actress	Yes	She/Her	No	ISON (Student)
WP7	Drama Student, Actor	Yes	He/His	Yes	ISON (Student)
WP8	Actress	No	She/Her	No	THEAMA (Professional)
WP9	Researcher	No	She/Her	No	-

Table 3: Description of the objects, the character description connected to the objects, and the reasoning for incorporating this character into the activity scenario.

Object	Character	Description Provided	Reasoning for incorporating character
Gavel	Critical	Usually, everything sucks, if I do not do it myself.	Production of negative comments.
Whistle	Enthusiastic	Everything is wonderful! I can't wait to see what else today has in store for me!	Creating contrast to the judgemental character (critical).
Card	Joker	I can invent my own character. I can be whoever or whatever I want.	A card available for the participants who feel discomfort in the role associated with the object they selected.
Clapboard	Director	I need to let people know about the new service.	Observe the ways that the team will choose to communicate the new service.
Futuristic Glasses	Technophile	I am passionate about any technological or non-technological tool I find out about. I adore technology.	Production of comments for the automation of the service.
Sundial	Technophobe	I avoid anything new. I do not understand the technology and I do not want to deal with it. Any discovery after electricity is simply nonsense.	Production of negative comments regarding the automation of the service.
Microphone	Journalist	I am here to cover the event. I know that the information that will reach the public is the one that I will communicate to them.	Explore the communication techniques that will be used to transfer the news to more conventional means of communication (television).
Selfie Stick	Influencer	The reason that I am here is mainly to impress my followers and to gain new ones.	Explore the communication techniques that will be used to transfer the news on social media.
Magic Wand	The energy of the Universe	I have the ability to freeze time, shape everything as I want to, and restart it again from the new situation I've just created.	Provide a safe space for people who feel discomfort on directly participating in the activity.

digitisation, the discussion quickly moved to the rules and guidelines that should be followed on conventional TSTs, and how those should be reconsidered during an automation process. Due to the fact that such a service has the unique characteristic to be offered as assistive/complementary to an event taking place at a specific time while not running in parallel to it, the time that the service will be available is a critical factor. As the actors agreed, in order to assure added value, it should be offered in a period prior to the performance but close to it.

Touch, besides offering another tool, in our senses toolkit, brings with it meanings that can potentially alter communication. *"Touch provides another dimension to the communication [..] thus, I don't know whether this could be part of an established practice (speaking about the digitally mediated service)"* [P2].This statement complements the initial points of resistance that the director expressed during the informal interview, by highlighting that a part of the service might be feasible to be digitised, but what seems impossible is to find a way to incorporate the element of 'syncretism', as although the script might be more or less predefined, *"if you have to speak with an older person from a village, then the reply you will provide will have much simpler words (or maybe meaning) than when you would reply to someone else."* Thus the correct preparation of a touch tour, requires the cooperation of the actor and the performance director, for the development of scripts that would support the artistic creation and assist the element of 'syncretism'. As P1 and P2 further developed their thoughts on the expertise that should be compulsory for the development of the service, they came to an agreement, that the development of the scripts of the service is impossible without the cooperation of the accessibility experts. Besides bringing their expertise of providing added value to the performance per se, their duties include the reassurance that the services will offer that value without limiting the horizons of the audience on a specific understanding: accessibility services should be there as a part of the artistic creation, that will provide food for thought, instead of a ready meal.

> "TSTs are part of the artistic merit , as is the auditory description, the interpretation in sign language, and any accessibility service, carries an artistic merit, and if it does not, (this is a reason for) the artistic identity of the performance gets lost for the people who are receiving the service"[P1]

Thus, by approaching TSTs as part of the artistic expression, rather than as just a service, they should be utilised to guide the audience to a specific condition, as part of their experience. For this reason, when integrating the TSTs service in respect to the performance and to the audience as a whole, it is critically important to pay special attention to the balances, that will preserve the artistic claim and avoid the creation of noise that will not contribute to the development of the experience. TSTs should target the creation of the experience that a non-B/VI person or audience who spectates a performance in big theatres (by a distance that does not allow attention to the visual detail) would get by their visual surroundings. Disregarding the fact, that the touch tour is focused by definition on the utilisation of touch, other senses such as the element of smell could also be used by the director, if they believe that this could enhance and assist the artistic experience [P1,P2,P5].

> "If you cannot see the coat, to experience the winter, you should be able to touch it and smell the naphthalene, to construct the same experience and bring yourself into it". [P1]

Our findings reveal that there are multiple ways of mediating TSTs through technology (e.g. online, tactile etc.) but it is important to design them not as a service on top of the artistic expression but as a seamless part of it.

4.2 Description kills theatre - Focus on Symbols

The concept of semiology came early into the discussion as a way of representing meanings rather than describing them, thus preserving the freedom of those receiving art to consume and interpret it based on their experiences. In contrast to the traditional ways of using description in other sectors, where the balance between the depth of detail that is provided and the memory of the receiver of the information should be utilised in the best possible way, the case of art is different.

> "The stimulus of the touch tour may not actually come from an actual object in the performance [..]. Clever handling is needed in the tactile description (because it is impossible to include everything), stimuli for saving time, for whatever there is no need to be described. If you describe the whole performance, why should someone stay and watch it? Description kills theatre. You have to focus on key points so that these are stimuli for the viewer's imagination to gallop[..]." [WP1]

This statement comes in agreement with the initial observation that WP1 did when WP6 started brainstorming about their creation *"Yes, this could be a symbol because it is a reference point"*. As WP3 complemented, the balances amongst the information provided should be carefully considered, because the description could easily restrict imagination through the level of detail provided. WP1 adds that all those are connected to the type of theatre served and the artistic line that the director is following, although, highlights that only the directions are up to the director and that every detail which is connected to accessibility and inclusion services should be up to the accessibility services experts.

As comes out of the descriptions that the rest of the group members provided for their creations, they also preferred to use symbols to express meanings rather than accurate representations of objects. WP9 commented about the puppet created for Macbeth *"I like that is like you are expressing something about authority through a symbol"*. While WP7 preferred to incorporate in their performance objects that would curry a special meaning about the character.

> "I am Menelaus from Troy, and what I actually imagined is that those two objects (the orb and the wooden stick) are that: The orb will be used as a trophy, in order to showcase the victory of Achaeans, by throwing the orb the ground, by doing this (sound of a ball that pulses on the ground) I want to show that trojan earth has now become Achaean. The stick, I will use it like a spear, trying in a way to show that this is one of the objects that contribute to the conquest of Troy by the Achaeans." [WP7]

> "The object (wooden stick), is used both as a sword and as a spear, it has a double semiology"[WP1]

The same approach, of expressing themselves with the help of semiologies was used in the cases where creation was not connected to a theatre performance but to personal views. Those are the cases of WP4 and WP5.

> "So, there is this stick, the vertical one, and one horizontal chopstick [..]. What I've tried to do is [..] to create something that will relate to me.[..] Scarecrows

> mean two things. I love scarecrows because they are very lonely and their purpose is to scare people. On the one hand, this is repulsive, but I like people when they are scared. I like to scare people. I wouldn't want to be a scarecrow, those are 2 different feelings."[WP4]

> "We created this hat [..], I mostly made the pumpkins because when I was creating them I was thinking about the Cinderella story, in which the pumpkin was transformed into a carriage, to drive her to her destination, the ball with the prince. This ball made her dreams come true. To me, the pumpkin symbolises the means by which she made her dreams come true. That's how I feel because ISON is the place where I will be able to realise my own dreams step by step as it happened in the fairy tale."[WP5]

The way that the creators employed to describe their creations, as participants admitted altered the experience of an object, to experiencing art, as this combination enhanced their experience and their understanding of what they were able to see and/or touch. Thus, the actors expressed to us that, as we are speaking about art, there is no importance on accuracy in the representation of the objects. In theatre the right approach is the utilisation of accessibility services experts, for the transfer of semiotics and meanings, targeting triggering the imagination rather than the image. As [WP1] expressed we should

> "Use stimuli to let imagination free, the description shouldn't reveal the plot, we 'watch the same play, we don't see the same thing, the details frame the imagination."

Since the concepts of semiology and abstraction were elements that were not introduced in the previous research engagements, the initial prototype had highly detailed representations of the objects. The decision of letting our participants reflect on the sense of touch by making and speaking about TSTs through their designs gave us the opportunity to further inform our design.

4.2.1 Imagining Together. The way that our research engagements with the team were planned, was dedicated to understanding the level that the experience could be enhanced by utilising the sense of touch prior to or during the performance, using objects that would be offered to the participants. To our surprise the team of participants provided a special meaning to the process of making and specifically to the process of making together, bringing to the forefront the importance of the collective experience.

The artists paid special attention to the collective experience of making. Throughout the process of creating, the members were announcing the materials they could potentially use for their creations, but always making sure that the rest of the members had whatever they needed to prepare theirs, in order for everyone to be satisfied. Other than this important gesture of solidarity, the participants also discussed the advantages of collaborative creation, by admitting the assistance they received in unlocking their imagination and the potential that would not be available if they were creating alone.

> "I think it was a useful experience because it somehow enriched our imagination. [..] In my case, for example, it was the ball that WP1 passed to me at some point, when I saw it I thought that there is no way that this will be useful to me. You are combining diverse ideas and thoughts and you can turn your mind into different approaches, in order to achieve the result you want. This, in a way results in broadening your imagination [..], you can combine stuff that assists your imagination and spontaneity, in general, you have no limits" [WP7]

.

Participants acknowledged the fact that besides the personal gain of unlocking their potential through collaborative work, there were also organisational factors that were resolved due to the same reason. They admitted that they are attempting something new to them, and the reason that they succeed in the completion of their task, was respecting the different qualities that the team members had to offer in the process.

> "There are people who have the ability to connect objects and situations, to their own events and objects, [..] and through that combination, create something new. There are other people that do not have such an ability. I believe that this seminar was good both for the people that have this ability, but mainly for those who don't have it that easily. I liked that we worked as a team, and through this teamwork, we discovered someone who knew the way to provide directions [..]. All this could be a motive to initiate a very nice collaboration, and to search and discover the object which will assist us to perform better." [WP4]

Moreover, people, admitted that for them, the process of creating together as an inclusive team was a way for them to understand inclusion better, and break self-barriers that were previously preventing them by being open and creative, thus letting them back from broadening their spectrum of understanding.

> "For me, this stands as an example regarding inclusion in general.[..] I had to face for one more time, what happens in our society. 'But how are you going to make theatre in this way? How can a blind person watch theatre?' For me, this is how it worked, and with such a tiny thing as collaboration, you can do everything, the only prerequisite as WP7 supports, is to be open (meaning to new ideas and approaches) to do so." [WP8]

4.3 Accessibility Services and Activism

Besides the core reason for the group's existence, art, and activism are also a fundamental part of their existence. Although one of their main aims, when the group was initiated, was the "Communication and promotion of the SMoD based on the situation, on the current place and time, given the current situation" (THEAMA Director), the art projects in which the group was involved during the years, have proved that their aim seems to be focused on inclusion. THEAMA group evolves and raises around the notion of inclusion, while focusing on the current sociopolitical situation and this seems to accompany them, in every choice that they follow as a group. The element that makes their approach unique is

their focus on the current sociopolitical situation. As P1 and P5 agree during the discussion, if you do not pay attention to the environment surrounding you, an attempt at activism could end up intimidating people instead of providing them food for thought, thus bringing potential allies, far from supporting the notions you serve. For them, the focus on the target is not enough to achieve a change, it is important to study the current situation, understand the audience, and based on this knowledge, develop a plan of action for bringing a systemic change[51]. According to the group, the focus should not be on providing something innovative but on the activities that serve the scope and aims of the group.

> "A service such as TSTs could be considered activism in Greece. Could it be considered a commercial product? No! [..], something like this might happen in the 2040s. Even nowadays, simultaneous interpretation in sign language is not considered a prerequisite (meaning. Of a theatre performance). First, you have to create the need. And we ourselves are creating the needs"[P1]

.

A significant challenge, which hijacks the activist perspective of a new accessibility service introduction, is the tendency of non-activist groups, or those practicing false social activism [15] to gather attention. Such attempts might be by either taking advantage of the social sensitivity of the topic without examining it from a holistic perspective or by attempting to provide accessibility services just to gather attention without actually serving the spectators of the performance.

> "I've attended the performance [name of the performance] in which there was a disabled character performed by a non-disabled actor and the theatre venue was not accessible. This means that you want to use the topic of disability, you are speaking about disability, hiring actors without impairment; which is ok, in the same way, that disabled actors are performing roles who are not experiencing disability or there is no reference to disability in the script.. But using the topic of disability, without paying attention to the accessibility of the venue, is very superficial, [..]. From an artistic perspective, I can accept the choice of a non-disabled actor, but if the actor was experiencing disability, then they would have to think about the accessibility of the venue."[P2]

> "The problems are the following: By the recent experience we had in [name of the performance and place that the event took place]. There, a Tactile Tour was offered one hour before the performance during which the actors were describing to the B/VI spectators the characteristics of their roles, what they were wearing, etc. Attention! When we saw this, we were excited, we said Wow!! This is very nice! But after some point, we got disappointed for many reasons. From the actor's perspective, (conducting the tour) one hour (earlier), by which half of it you will be with the B/VI spectator[..], is very binding. On the other hand, I realised that in the Tactile Tour, there were 2 actors, and when the performance started there were 14 actors, the rest of them were not of crucial importance but were also very important roles, and then it was when I realised that this was just for gathering attention" [P1]

The participants of the aforementioned performance were quite critical while discussing the Tactile Tour they have recently experienced, although they admitted they were happy that they were there as spectators. The reason was that, as they commonly agreed, such things need time, and as P3 mentioned *"You can bring the change step by step"*. The whole reasoning behind the need for activism at the present time regarding P5 is that currently accessibility and inclusion are perceived as add-ons and not as prerequisites.

"This happened during an activity of [name of an important project for inclusion in theatre], in which we were involved as THEAMA group, and it was obvious that this happened only for gathering attention [..]. This was not nice[..]. I was listening to the procedure as I was by luck, sitting next to [name of the actor], a very well-known actress in [name of a country]. She is a woman with tremendous experience, and I was listening to her conducting the description out of character, and not as a character [...], that was another big fail, [...] because after that, she will be on the stage and you will listen to a quite different approach (meaning another voice, character, the rhythm of speaking) and you will not be able to understand what is going on"[P1].

The main reason for the group's disappointment is their perspective on what can be defined as accessible, for them it is not enough to have an accessible theatre as just wheelchair friendly or provide audio description services.

> "All public spaces should be accessible, and thus all the theatres. They should not be allowed to operate if they are not accessible."[P5]

As P5 admitted, the way that the venues in Greece are handling disability is hopeful, but what should be more important is to make disabled people, and consequently disability visible in our society. In this way, people would be able to understand that disability is a spectrum, which comes in different shapes, as people tend to characterise disability as big or small. This approach is faulty since it does not help people understand that the barriers that people experiencing disability are facing are socially constructed. As they explain, this is a fact that they understand, as they are still on a learning curve themselves, but as they kept highlighting, the key to achieving such targets is knowing your audience.

At the current moment by knowing their audience in Greece, what they want to achieve as a team is making people understand that people experiencing disability are independent people with their own character and personality; they are not in need of immediate assistance as soon as the society is serving them in an inclusive way, which is not creating barriers on the achievement of their scopes.

4.3.1 Creating Inclusion through everyday practices. For the group, inclusion is not another buzzword, is a way of experiencing life through everyday practices. Our gatherings were initiated in ways that would allow us, to learn and understand ourselves, as a group, and evaluate our common needs in order to be able to serve them, and reassure that everyone is perceiving the same experience.

This was a continuous pattern followed in each and every step of the procedure because in this community inclusion is a prerequisite, the same pattern emerged every time, as it was adapted to the community we were shaping with the participants. Every engagement was initiated by people seated in random spots spacing a circle but always leaving enough space in between us to let wheelchair users choose the spot in which they feel comfortable, not the spot that remains available. In gatherings where B/VI people were joining us, we were starting by introducing ourselves in a way that would cover the information needed in order for all of us to have the same experience. This introduction was consisting of a small introductory speech (usually conducted by the director) in which we were informed about the setup of the space, which was usually a circle. Right after this small introduction each one of us was starting to introduce ourselves by informing next to whom are we seating, what are our names, who we are, and how we look like.

In the same way that disability comes in different shapes and sizes, so does inclusion, as the practices shall be followed from time to time differ. The team always shapes a new community and every member seemed responsible for reassuring that every other member will perceive the same experience and respect the rest members of the group. During the activities, the more experienced members of the group were sharing their experiences when there was the feeling that might some information are missing either by the memory of the rest of the members of the group or of their knowledge, always concluding their statements with questions to prompt the group to feel included in the discussion or to bring their attention back to the current activity.

Descriptive communication seemed to be an important factor during all the activities as the participants were never referring to something (eg. an object, an event, a notion, etc.) by using the word 'this'. In cases where they were referring to an object, they were using descriptive language even if the person they were referring to was not B/VI, for example, WP3 instead of asking 'where do you think this could be used', while speaking to a sighted participant, asked *"Now, where do you think this long ribbon could be used?"*. While in cases where they were referring to things that would require either knowledge or memory, they were mentioning in descriptive ways what exactly they are speaking about, thus reassuring that all the attendees have the same information.

The inclusion for the team is expressed by reassuring everyone feels included in the process, that we all are on the same page, and that everyone feels comfortable. The role of reassuring inclusion seems to be mostly on the director of the team, who tries to be available when needed, decompress situations that might create anxiety, and assist the students to understand the semiotics of the activities, by either producing questions or guidance to participants that feel confused or anxious regarding a task and activity. This role includes providing personal, informal TSTs about the surrounding environment to the participants who cannot visually perceive it and accommodating the needs of the people to make everyone feel that their will and participation are equally important.

Moreover, in cases where members of the group seemed to forget to create the accessibility needed, there was always an intervention by another member of the group (in most cases the director), that was reminding them what needs to be done. During the presentation, WP4 starts presenting their creation by expressing their feelings about the creation, during the first seconds there is an intervention by the director saying "Before proceeding, describe us verbally what we see", WP6 starts their presentation with the verbal description of their creation but the director realises that their voice is not loud enough, thus making information inaccessible to some of the people in the room, so asks to WP6 to increase their voice.

5 DISCUSSION

Our Findings suggest that touch has an important role in accessibility services and the perceived experience. Our participants focused on the use of audio for communicating information and the use of the sense of touch for offering a more immersive experience to B/VI theatregoers, while recognising the added value of the service to non-B/VI people. Although, they expressed their doubts about completely removing the human factor from the offered service as they believe that there are aspects of human interaction, such as 'syncretism' that cannot be substituted by current technology and thus there will be a need for either following a hybrid model for conducting TSTs or relying on innovation. Moreover, the study found that describing a performance through detailed descriptions, such as the way that museum artefacts are described, could restrict the imagination of the audience. Our participants preferred the use of symbols to express meanings rather than accurate representations of objects, supporting the creation of inclusion through different levels of communication. Thus, the right approach for designing such services should be the involvement of accessibility services experts in the initial stages of the development of the artistic creation, targeting the development of stimuli to free the imagination, rather than focusing on transferring a specific meaning.

Apart from focusing only on the development of the service per se, our engagements brought into light another important aspect of the services offered by our participants, an activistic aspect and a need for respectful provocation. As they mention, one of their main aims is to promote and communicate the SMoD based on the current sociopolitical status quo, with a focus on inclusion. They explained that witnessing the use of such an important factor to them for virtue signalling, is intimidating, and creates a false understanding of disability for the general audience, thus for them all, the services should be situated and respectful. Moreover, their approach is to use their services also to educate the audience on disability and inaccessibility topics and open up relevant discourses, as per their view their target is on following SMoD but grounded to the current sociopolitical situation, to bring the systemic change they desire. Finally, a significant theme emerged that was tied to the process of collective making and the potential of the processes to awaken the creators' imaginations and to function as a prompt for inclusion, which informed our first discussion point.

5.1 Solidarity through making

The procedure of creating together, besides being joyful for all of us, was interesting as most of the participants mentioned that it let them understand each other, and challenged them to think more about inclusion concepts which they thought they had a fully-formed opinion on already. Previous work on the design of theatre accessibility services in cooperation with the actors, reports that the process helped them achieve a better understanding of the play

and the services[70]. Our research builds upon this work as the making process, besides assisting the better understanding of the actors about their characters, also let them find new approaches to their artistic expression. Furthermore, by accidentally coming across a 'Making Art Together'[16] session, we had the opportunity to collect feedback about the potential of this method for enhancing solidarity more broadly. 'Making Art Together', although not standarised practice, has been explored for developing dementia-friendly activities[16] because they reduce the social anxiety of understanding and learning about the art before experiencing it, and they decompress the carer's duties. National Galleries of Scotland offers the opportunity for understanding art through art-making workshops as a follow-up activity to the TSTs offered for the B/VI Gallery visitors[40].

Based on the feedback collected during our engagements, we argue that approaches such as 'Art through Making' can be of great benefit to the HCI community, due to the potential of involving a wide range of participants, thus reducing the risk of enhancing socially constructed vulnerabilities through research [67]. Klaveren[66], building upon Gaver et.al.'s cultural probes, explore the enaction of togetherness through art by investigating the ways that researchers can step from 'outsider' to 'insider' positions. Spiel and Angelini [61] employing embodied approaches in their methodology when exploring the mentality between people and their perception of technology while working with the disability community, reflect on the potential of such practices to balance the power dimensions between the researcher and the community, creating space of further reflection and overcome the boundaries that might evolve from traditional institutionalised research approaches.

The whole existence of the THEAMA group is based on their notion of inclusion and their collective need for artistic expression,as a guide to their everyday practices. In other words, their way of supporting social innovation and preserving their identity, is based upon their core values of existence, that is as per the group's description, inclusion and art, and per this research analysis, inclusion, art, and solidarity. Understanding the group's values, let us establish ours, and come into alignment with Cockton's call to HCI researchers[20] to design for value, and intend a gifted design, which will target "changing the world rather than merely describing it"}, thus going a step closer to our collaborators' vision for inclusion. According to Cockton[20], HCI should focus on delivering specific value, by keeping a facilitating role, to create designs that reflect the needs of all the stakeholders involved.

As Mankoff suggests[38], the research of technology that aims for inclusion is interconnected to disability studies, which comes into alignment with Cockton's note[20] for multidisciplinary collaborations to a successful value-centered design and our findings, about the need for cooperation with the actors, the directors, and the accessibility experts, for the design of such technologies.

We suggest gamified processes that support artistic expression and collaboration can create the ground of understanding amongst the stakeholders, make the boundaries amongst them thicker and create the space needed for the extraction of the real value that the design should serve, which might differ from the initial understanding of the people involved in the process.

Sommerville et.al.[60] determined the success of their interdisciplinary collaboration on four factors, the equality of objectives, flexibility, mutual respect among the researchers, and to the formal and informal contracts they established, while the major problems they identified during the process were classified under three main themes: communication, methodology, and comprehension. Although we believe that further research on the topic is needed, our data show that such methodological approaches as synchronous collaborative making can be of great value in cases that require the active cooperation of different disciplines, as a way of negotiating expertise and resolving conflicts through making.

5.2 Theatre tech and activism

For our participants, the use of accessibility services in every form of their artistic expression, besides creating inclusion, is a way of making people realise the absence of them in other venues, and as they put it, make the services known to people and thus "create a need". It is important for them to enact activism with a unique and situated approach. Their perception of creating impact is situated in the current sociopolitical situation, as they highlight the importance of knowing the audience that will experience the performance. Their target is not to create performances that are dedicated to disability but instead advocate for the disabled rights through actions and their existence in the performance, because impairment is a part of their identity, disability is a part of their daily experiences and art is their passion and profession.

Authors engaged in HCI and the solidarity movements in Greece wrote about the need for HCI research to imagine the ways of embedding the practices and values of such movements both socially and economically in the future design of systems[69]. More importantly, within such body of work, authors describe how the work of such social movements was to deliver a service to people that needed it, in an inclusive and creative way, while also doing so in ways that raise visibility about an issue and apply pressure for change at the local or national level. We believe that such calls align with our work here, and we argue that for the design of technologies that depart from such experiences [24] we need to develop not just a new design perspective but also come up with ways that our designs can apply pressure for affecting policy and legislation.

Nonetheless, according to our research, these systems should be:

(1) Inclusive
(2) Situational
(3) Respectful
(4) Educational
(5) Innovative
(6) Provocative

5.2.1 Inclusive. By inclusive in this case, we refer to systems that will support equity in experience, as per our collaborators' need for a systemic change. As Polhill et.al[51] put it, systemic changes are by definition changes that target the way that a system currently operates, thus to its structure, and this is the reason that they are characterised by ambiguity. As systems are moving from information exchange services to immersive experiences and awareness raisers, there is an immediate need for HCI to support this change by going beyond providing accessibility in access and moving to creating for inclusion in experience. As per our research, inclusion and therefore equity in experience, is not connected with access to information, but with access to meaningful and carefully enhanced

information, that will be transferred to the receiver in a way that will allow them to perceive the same experience as everyone else.

Theatre and activism are strongly connected to emotions[31, 53], and amongst each other[48, 59]. Thus, we are being led into thinking, that the creation of an experience is connected with a fine balance between the information that is being communicated, the surrounding environment, and the senses that are being involved. Our view is that besides known accessibility barriers as for example the exclusion from live content[50], there is an urgency for future systems to serve inclusion in experience, by the transfer of objective data of the scene and the surrounding environment, while stimulating the appropriate senses, that will allow the space of interpretation and the construction of unique self experiences. We argue that equity in experience is a cornerstone for letting people decide where they stand both in art and socio-political life, by having the freedom to take this decision through their own unique interpretations. Thus, future systems need to support various levels of participant engagement. They need to enhance the connection and the understanding of the surrounding environment by the experience perceiver, transfer the information that is relevant to the context, and utilise the human senses. However, as per our findings, the sequence in which those levels are experienced and the existence or elimination of overlaps in between them should be adaptable, thus allowing the experience to be open to interpretation.

5.2.2 Situational. Paul Dourish[21] while defining the meaning of context in the spectrum of Ubiquitous computing, emphasises the dynamic nature of context and the constant need for reevaluation of what it does in interaction; highlighting the importance of technology to the evolution of communities of practice, even though admitting that meaning might never be encoded. This definition of context is close to the views of THEAMA about activism. They declare themselves as advocates of the SMoD, while they highlight the importance of taking into account the context in which you advocate. In their perspective, the lack of context when creating art or other actions dedicated to audiences will either reduce their success or could be the reason for their failure. For them, incorporating TSTs in their accessibility services is more of a statement than just an introduction of a new service as they are aware of the Greek reality, in other words, their context. If we further our understanding of their approach, we can assume that this realisation also changes the metrics which will characterise the system as successful. In case the initial aim was providing TSTs, the success of the system would be a combination of the B/VI people that experienced the system and their opinion about the perceived experience. While in this case, the system is designed as a means of activism, the aforementioned success factors are still important, but should be combined with:

- `Short-term metrics`: such as how many people in total experienced the system, what their perception was, what this means to the perceived experience, how many of them were B/VI, and how their views are different from the rest of the people. And,
- `Long-term metrics`: as above, the discourse around the system, how it was communicated to a broader audience, how many venues will incorporate the service after its introduction, and if the system's introduction contributed to the systemic change they are willing to achieve[51].

We argue that the design of systems aiming to contribute to broader society should be aware of the current socio-political situation and informed by it to establish their own factors of success.

5.2.3 Respectful. The group, through their experiences, described that knowing the societal context is useful as it keeps their expectations grounded. During our discussion, they explained, that although there are a lot of different groups in Greece fighting for disability rights, some of them, by ignoring the lack of knowledge of the Greek society about disability, end up intimidating people, that if approached with respect could end up being allies of the disability movement.

Patrizia Marti[39], attempting to establish the context of Respectful Design, writes that this approach is a call for thoughtfully addressing all human skills, such as perceptual-motor, emotional, cognitive, and social ones, to create meaningful interactions, aiming to "create a space of experience of using technologies that leads to feelings of engagement, emotional involvement and reflection on the topic"[39].

We build upon this approach by complementing it. Respectful Design, in our view, suggests we must take into account the cultural context in which a system is being developed.

5.2.4 Educational. We already have instances of modern-era technologies connecting education and activism, like the Maru anti-harassment chatbot which is designed to promote freedom and safety on the internet[29]. The use of chatbots for opening space for reflection on complex topics[54] and, the connection between antagonistic movements and education[69]. By educational in this case we attempt a step beyond traditional education and make a point for educating through inclusion. We find, practices such as the accessibility services offered by the National Galleries of Scotland[40], or the creation of museums consisting of tangible replicas of well-known artefacts[32] innovative and inspirational. Although, we believe that the affordances of modern technologies are creating opportunities for inclusion that would allow people to educate themselves on new topics, through inclusion.

Narrowing the audience of TSTs to B/VI only people has practical reasoning as the groups should be of relatively small size, for organisational reasons. This organisational barrier comes in contrast to views that TSTs are beneficial for the experience enhancement of all theatergoers[63, 70], and in a way contribute to the maintenance of visual dominance[28]. Inspired by relevant discourse in education[57] we argue, that in this way we are separating people, thus reducing inclusion. Our research shows that this separation is one of the main reasons that make societies maintain the view that disabled people are in need of immediate assistance. Through this statement, we want to invite designers, to think differently about the societal impact of the designs produced, and utilise the affordances of new technologies to let people come in contact with topics that are out of their knowledge or zone of understanding.

Our findings show that making an accessibility service well-known might be more beneficial for disabled people and society than the existence of the service per se. Communicating the existence of a service is a way of making people aware of it and, possibly, demand it in their future experiences. The existence of a service by itself, on the other hand, cannot guarantee that the service will be known to people who are not directly in the need of

using it, such the TalkBalk functionality in Android phones. Thus, in order to support the activistic and educational scopes of future systems, we propose that it would be more beneficial to create paths during which people can choose what functionality they need in advance, before their first experience with the system, rather than having to understand how to enable the functionality they need while using the system, in order to properly experience it.

5.2.5 Innovative. Previous research on the intersection of technologies for civic engagement and activism, reveals that two of the main considerations that shall be taken into account when designing for such scopes are the effort needed for their maintenance and the financial cost[68]. We argue that when designing for such spaces, of a relatively low financial capacity, those two prerequisites remain important.

As our team and relevant literature suggest[35, 50, 72], one of the core barriers to incorporating accessibility services is their financial cost. Although the integration of technologies to partially substitute human-generated services, is accompanied by a lot of questions that need to be addressed[19], we argue that advances in technology are opening up opportunities for the availability of accessibility services with reduced costs. Our research suggests that there is no need for technology that will replace accessibility professionals, instead, the immediate need is for technology that will reduce the time of their involvement, thus reducing the costs of production. We argue that keeping such technologies at a relatively low cost will lead to more venues expanding their accessibility services, thus contributing to the discourse for their need, while opening up more opportunities for employment for accessibility professionals.

Besides the aforementioned organisational matters and the group's opinion that innovation should not be the core aim, in our case innovation is needed to cover behaviours that are currently available only in human contact, but recent advances in AI technologies make us believe that will be available in the near future. During our engagements, a problem that was repeatedly mentioned mentioned was the group's difficulty to imagine ways that technology could substitute aspects of human contact, such as 'syncretism'. Obrist extending on Weiser's vision wrote about the integration of all human senses in future technologies while establishing three laws that should be taken into consideration when developing multisensory experiences[43]. The second law " *Receivers of a multisensory experience must be treated fairly.*", opens up a dialogue regarding the people who will be the receivers of the experience, and if we as designers should consider the development of different experiences based on the receiver's characteristics. Moreover, she calls the community to think about the ways that technology is changing us as humans, and in which way those changes should be incorporated into future AI technologies.

In an attempt to make a contribution to this discourse for future technologies, and based on the question initiated by the community of artists we are working with, we believe that following the path of developing different approaches based on the receiver's characteristics seems to be the most appropriate design approach. Although, we want to prompt the community to reflect on the ways, that such different approaches will be respectful, and avoid creating new exclusions.

We believe that, in addition to assisting the scopes of inclusion (5.2.1) and education (5.2.4), designing systems with multiple layers of engagement and customisability, prior to their initial use, is more financially feasible as a design process and as a design outcome than the idiographic approach.

5.2.6 Provocative. Prompted by our group's opinion, that in art there is no need for accuracy, but a need of finding ways to engage with a wide range of audiences, and create unique experiences for each member separately, we reflect on ways that this idea could be beneficial for designing for inclusion and activism. As our data reveal, in art the focus should be on the semiology of the artefacts used and their interpretation and integration as one level of the experience rather than as a channel for relaying information. We believe that as the incorporation of technology in such double-scope services, is still in the initial design stages, the freedom of utilising inaccuracy and ambiguity, is an opportunity for provocation since it will assist the constant reevaluation and development of the designs[9] while utilising the ambiguity of them to invite the curiosity of people and consequently to their use. Although in compliance with our call for respectful design, we support that in such sensitive topics, connected to human rights, provocations should be targeting changing people's behaviour[54], but be extremely focused on eliminating any possible discomfort. Thus, we propose that future technologies could use the freedom for abstraction allowed to open discourses and communicate messages, such as the use of accessibility services as main services and inform the people who might not need them, how they could disable them.

6 CONCLUSION

This paper builds upon relevant work in the intersection of Theatre, Technology, and Disability studies. We believe that the current shift to immersive technologies creates an opportunity for action, targeting inclusion through experience enhancement. We argue that inclusive interdisciplinary research processes, that allow participation in multiple ways can be of great benefit to the HCI community. Based on previous research and our findings, we argue that such methodologies, can create connections and understandings amongst the different stakeholders of such projects that aim for inclusion, and provide space to deepen reflection on the topic. Our research suggests that such designs for change need to serve more than inclusion, by contributing to the opening up of social discourses about underrepresented topics. The prototype developed and used for research purposes, acted as a probe and brought to light insights about the development of such technologies, and we believe that if deployed in diverse contexts in the future, it has the potential to be a provocation for social change by problematizing audiences. The use of the prototype to expand the advocacy repertoires in spaces of social innovation also brings with it ethical considerations for such 'unconventional' technologies for two purposes: Inclusion and Advocacy.

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