FOREWORD

This booklet presents the abstracts for the GDA (Green Digital Accessibility) conference, an inaugural conference focused on bridging the gap in knowledge in accessibility and environmental sustainability, drawing together experts in the field of media, accessibility, technology, environmental studies and education.

Our two keynotes will be given by Dr Hemini Mehta of the European Broadcasting Union and Tom Greenwood from Wholegrain Digital. Five panels will follow, the first of which focuses on the sustainability of media accessibility services. Our second panel is titled "Accessible Environmental Communication". The third panel of the conference centres on sustainable and inclusive design with accessibility, sustainability and the end user is the focus of our fourth panel. Our last panel will discuss sustainability in educational contexts. Finally, we will have a roundtable with experts in the fields of media, digital design, media accessibility and environmental education.

We hope that the GDA will drive conversations on environmental sustainability and accessibility forward.

Welcome

The Organising Committee

Transmedia Research Group

December, 2022

#GreenDigitalAccessibility

GDA 2022
PROGRAMME

Date: Friday 2nd December 2022
Location: Residència d'Investigadors

08.30 - 09.00 CET	Registration
09.00 - 09.10	Welcome address by **Pilar Orero (TransMedia Catalonia, UAB)**
09.10 - 10.10	**FIRST KEYNOTE LECTURE** by **Hemini Mehta (European Broadcasting Union)** **Chair: Pilar Orero** Discussion: 15 minutes
10.10 - 11.05	**Panel 1: Sustainability of Media Access Services** **Chair: Sarah McDonagh (UAB)** - **Sharon O'Brien (DCU) & Pat Brereton (DCU):** *Green Machine Translation: Sustainability and Accessibility* (15 mins.)* **[Online]** - **María Asunción Pérez de Zafra Arrufat (University of Granada):** *Carbon footprint in subtitling: Towards a more energy-efficient and conscious work activity* (15 mins.) - **Mariona González-Sordé**

	(UAB): *Are Easy Language websites greener?* (10 mins.) **Discussion:** 15 minutes
11.05 - 11.35	**Coffee Break:** 30 minutes
11.35 - 12.25	**Panel 2: Accessible environmental communication** **Chair: Estel·la Oncins (UAB)** - **Gert Vercauteren (University of Antwerp) & Mieke Vandenbroucke (University of Antwerp):** Making Climate Communication Accessible: Levering insights from a Belgian project on crisis communication (15 mins.) - **Marina Pujadas Farreras (UAB) & Sarah McDonagh (UAB):** *Assessing the accessibility of information about the climate crisis: A comparative analysis* (10 mins.) - **María Eugenia Larreina (UAB) & Chiara Gunella (UAB):** *Is playing for environmental awareness for all? Accessibility and sustainability in video games* (10 mins.) **Discussion:** 15 minutes

12.25 - 13.25	**Panel 3: Sustainable & Inclusive Design** **Chair: Gert Vercauteren (UAntwerp)** - **Irene Hermosa-Ramírez (UAB):** *Universal and ecological design in Media Accessibility: Finding Common Ground* (15 mins.) - **Marta Brescia Zapata (UAB):** *Green conference for all: Guidelines for accessible and sustainable events* (15 mins.) - **Xi Wang (University of Portsmouth):** *Translating Gardens into Multisensory Experience: An Inclusive Tour for BPS Visitors* (15 mins.) ***[Online]** **Discussion:** 15 minutes
13.25 - 14.25	**Lunch**
14.25 - 15.25	**SECOND KEYNOTE LECTURE** by **Tom Greenwood (Wholegrain Digital)** **Chair: Sarah McDonagh (UAB)** **Discussion:** 15 minutes
15.25 - 16.10	**Panel 4: Sustainability, Accessibility and End Users** **Chair: Alessandro Pollini (Uninettuno)** - **Miroslav Vujičić & Uglješa**

	Stankov (Novi Sad): *Behind the Smart - The hidden costs of tourism technology optimism* (15 mins.)* **[Online]** - **Armony Altinier (Koena)** *Go4DiGreen: how digital accessibility can help refugee entrepreneurs to contribute to the European Green Deal* (15 mins.)* **[Online]** **Discussion:** 15 minutes
16.10 - 16.40	**Coffee Break** (30 minutes)
16.40 - 17.40	**Panel 5: Sustainability in Educational Contexts** **Chair: Alessandro Caforio (Uninettuno)** - **Gian Andrea Giacobone* (Uninettuno) & Alessandro Pollini (Uninettuno):** *GreenScent project and Sustainable Interaction Design: exploring inclusive sustainability education* (15 mins.) ***[Online]** - **Estel·la Oncins (UAB):** *Sustainability in online teaching: train the trainer* (15 mins.) - **Loukas Katikas (Ellinogermaniki Agogi):** *Schools as Living Labs for the New European Bauhaus* (15 mins.) Discussion: 15 minutes

17.40 - 19.00	**Roundtable: Tom Greenwood (Wholegrain Digital), Gert Vercauteren (UAntwerp), Loukas Katikas (Ellinogermaniki Agogi), Alessandro Caforio (Uninettuno)** **Chair: Pilar Orero (UAB)**
19.00 - 19.05	**Closing remarks by Pilar Orero (UAB)**
21.00	**Conference Dinner: Antic Forn**

Conference venue: The conference will take place at Barcelona's Residència d'Investigadors, close to La Rambla.
Address: c/ Hospital, 64. 08001 Barcelona.

Conference dinner will be held in **Antic Forn,** Pintor Fortuny, 28 Raval - 08001 - Barcelona.

SPEAKERS AND ABSTRACTS

Hemini Mehta

European Broadcasting Union

KEYNOTE LECTURE: Sustainability strategies and future working practice in media

Hemini's talk will focus on public service media high level sustainability strategies - net zero strategies adopted by EBU Members with a particular focus on the future working practices in media.

Hemini Mehta is the sustainability lead at the European Broadcasting Union where she leads several teams focused on sustainability for Public Service Media, Green Productions, Cloud Sustainability and Green AI. As Sustainability Rapporteur at International Telecommunications Union (ITU part of UN), Hemini has authored numerous articles and reports as well as organised and contributed to several conferences and events focused on sustainability in the media sector.

Sharon O'Brien and Pat Brereton

Dublin City University

Green Machine Translation: Sustainability and Accessibility

With the move to machine learning approaches to machine translation (NMT) in recent years, MT is enjoying unprecedented levels of success. However, machine learning requires significant computational power (Strubell et al. 2019) prompting debates about the environmental impact of NMT in various fields. In translation studies, Kenny et al. (2020) highlight that 'sustainability' is considered from two perspectives: (1) sustainability of professional practices in an increasingly technologized environment and (2) the moral relationship between human beings and non-human entities. Cronin (2017, 2020) leads commentaries on the latter, dubbed 'eco-translation', arguing for a move away from the ideology of boundless growth. Meanwhile, the NLP community has started to interrogate the environmental impact of training NMT engines (Strubell et al. 2019; Yusuf et al. 2021). This emerging critical perspective on sustainability and MT is essential because all forms of technological innovation leave a high carbon footprint in their wake.

At the same time, environmental impacts need to be weighed against the potential gains that such technologies enable. With MT, its potential for supporting (minoritized) language rights, accessibility, and the right to information in, e.g., crisis settings (O'Brien 2019), for example, have been given increasing attention. Just as MT might be maturing as a tool that could strengthen accessibility, we are having to interrogate its environmental impact. This challenging friction between the development of machine translation for good and the imperative to reduce our environmental impact echoes wider debates around climate change and climate justice such as, for example, in the 'material turn' envisaged in sustainable media studies and especially in eco-cinema

(Brereton 2015, 2019). Drawing parallels with these fields, we will explore how the debate on MT needs to develop beyond virtue signalling on carbon emissions to a more sophisticated analysis of how to balance MT development for good.

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https://arxiv.org/abs/2109.12584.

Sharon O'Brien is Professor of Translation Studies in the School of Applied Language and Intercultural Studies, Dublin City University, Ireland, where she teaches translation technology, localisation, research methods, and crisis translation, among other topics. She acts as Associate Dean for Research in the Faculty of Humanities and Social Science. She is co-editor of the Journal Translation, Cognition and Behaviour, published by John Benjamins. She was coordinator of the EU-funded International Network in Crisis Translation. She was a funded investigator in the Science Foundation Ireland national research centre, ADAPT, for over 10 years. Sharon has supervised twelve PhD students to date and has mentored several post-doctoral fellows. Her full profile can be found here.

Pat Brereton is currently a Professor in the School of Communications in DCU and alongside teaching on a masters in Climate Change, he is a co-Director of the Climate and Society Research Centre. He has published widely on the topics of environmental communication, literacy and eco-film.

María Asunción Pérez de Zafra Arrufat

University of Granada

Carbon footprint in subtitling: Towards a more energy-efficient and conscious work activity

Climate change and the reflection on the influence of different work activities is at the core of current research. It is a key element for the development of a more sustainable society (Ham et al, 2015; Batmunkh, 2022; Tomitsch, 2022). Therefore, a thorough analysis is needed to propose more sustainable and eco-friendly strategies in the context of digital accessibility.

Regarding green ICT, there are different methods to estimate the carbon footprint (Hintemann et al, 2019; Marks et al, 2021; Obringer et al, 2021). However, the results show a considerable difference in the results due to the variables used to estimate this consumption, including users' devices, video resolution, and the type of connection used, among others. Other studies focus on the assessment of green management (Kader et al, 2014; Sheldon, 2017; Duarte et al, 2020) according to the economic activity carried out.

In this presentation, we reflect on the carbon footprint emitted in the subtitling process from two perspectives: the subtitling activity per se and the work environment. Through this analysis, we have classified the factors that directly influence the CO_2 emissions and, finally, we propose measures that can facilitate a reduction of emissions in the performance of the subtitling activity.

María Asunción Pérez de Zafra Arrufat is a postdoctoral researcher, Margarita Salas and Training Coordinator of the Vice President for Equality, Inclusion and Sustainability at the University of Granada. María completed technical training in Spanish Sign

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Language Interpretation in 2012 and graduated in Translation and Interpreting in 2016. She completed her Masters in Translation Professional, specialising in Multimedia and Accessibility (2017), Masters in Gamification and Transmedia Narrative (2017), Masters in Disability, Personal Autonomy and Dependency Care (2019), Doctor of Languages, Texts and Contexts by the University of Granada (2020). She has also worked as Research Support Technician at the Secretariat for Inclusion from the University of Granada (2017-2020) and is a member of the group of HUM research 770: TRACCE translation and accessibility.

Mariona González-Sordé

Universitat Autònoma de Barcelona

Are Easy Language websites greener?

In 2020, Spanish people spent 6 hours a day online on average [1, 2]. We have grown into digitalisation more and more since the invention and popularisation of the Internet, highlighting some challenges that we need to overcome. Accordingly, when pursuing a sustainable and inclusive society, some milestones need to be reached. Finding ways to make our digital environment more sustainable and inclusive is one of them.

There are several recommendations that website developers can follow to make their site more sustainable [3, 4], as well as resources they can use to calculate their site's carbon footprint [5] or overall eco-friendliness[6]. At the same time, we can also find numerous guidelines on how to make digital content more accessible. Suggestions in W3C Accessibility Guidelines [7] aim to make websites usable for everyone. Accessibility can be achieved by means of different services and resources, and one of them is Easy Language.

For a website to be fully accessible, its content needs to be easy to understand, and linguistic simplification through the adaptation of the text to Easy Language can improve any site's comprehensibility. Several guidelines explain how to write in this simplified language variety, and a few of them focus on the adaptation of website content [8, 9, 10]. We have observed that these two types of adaptations (to boost sustainability and enhance comprehensibility) present a relationship of correlation. Websites that have been adapted to Easy Language tend to score better in carbon and eco-friendliness calculators. This descriptive study of the relationship between website sustainability recommendations and Easy Language guidelines aims to find a common ground that explains why Easy Language websites tend to be greener. With it, we want to show how

in this case, like in many others, accessibility and sustainability can be mutually enriching allies [11].

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Mariona González-Sordé holds a BA in Translation and Interpreting from the Pompeu Fabra University (UPF), a BA in Applied Languages from the same university, and a MA in Audiovisual Translation from the Autonomous University of Barcelona (UAB). Before joining UAB, she worked as a subtitler and as a translation project coordinator. She is currently a PhD student at the UAB, working on Easy Language and media accessibility. Her research is backed up by a scholarship linked to the Mediaverse European project.

Gert Vercauteren and Mieke Vandenbroucke

University of Antwerp

Making Climate Communication Accessible: Levering insights from a Belgian project on crisis communication

Green digital accessibility is a two-sided coin. On the one side access service providers have to think about their ecological footprint and about how this can be minimised. On the other side, digital communication about environmental awareness, climate change and related scientific issues has to be presented in such a way that it reaches the widest possible audience and as such can potentially generate the biggest possible impact.

In the present paper, we will focus on precisely this second side of the coin and look at the question what conditions have to be met for climate communication to be accessible and understandable for anyone suffering from any form of communication vulnerability, be it because of linguistic, textual, cultural, sensorial or cognitive barriers. To answer that question, we will critically reflect on the findings from a recent Belgian project on inclusive crisis communication, and argue that these findings are equally valid and therefore transferable to science communication in general and climate communication in particular.

First, we will briefly explain the methodological design of the project in which both qualitative and quantitative evidence was gathered from different core sources and subsequently compared and synthesised. This included a systematic literature review, round table discussions with intermediaries, focus groups with end-users as well as the development and testing of specific inclusive communication materials, including but not limited to text documents, audio files and video materials. Then we will zoom in on the results of those tests and present our lessons learned, good practices and points of attention when communicating specialised information with diverse audiences, both in terms of the content and the form in which this information is presented.

In addition to and/or probably even more than offering insights into how accessibility and inclusion can be achieved in climate communication, the aim of this presentation is to reflect and stimulate discussion on the particular challenges that universal design approaches pose for climate communication.

Gert Vercauteren is tenure track assistant professor at the University of Antwerp where he lectures in audiovisual translation and media accessibility.

Mieke Vandenbroucke is a researcher at the University of Antwerp. Her research interests are in linguistic pragmatics and sociolinguistics.

María Eugenia Larreina & Chiara Gunella

Universitat Autònoma de Barcelona

Is playing for environmental awareness for all? Accessibility and sustainability in video games

Awareness about the environmental crisis plays an important role in engaging communities across the world to lead a more sustainable lifestyle (European Commission, n.d.; United Nations, 2022). Video games tackling environmental issues contribute to this goal by potentially influencing players' real-life behaviours (Klimmt, 2009). However, for these games to act as effective digital communication tools and to generate social change, all players should be able to access them. This is the aim of game accessibility: ensuring interaction between the game and the player, regardless of their abilities and needs. For example, subtitles for in-game dialogue may be used by players with hearing disabilities, players in noisy environments, or language learners.

This presentation qualitatively analyses the accessibility of three video games that raise awareness about environmental issues: *Plasticity* (Plasticity Games, 2019), *Alba: A Wildlife Adventure* (Us Two & Plugin Digital, 2020), and *The Sims 4: Eco Lifestyle* (Electronic Arts, 2020). They are tagged as educational games by Games for Change (n.d.), a nonprofit organisation that promotes social change through serious games.

All three games present a high level of players' agency towards different environmental challenges, such as circular economy or sustainable and smart mobility, which may facilitate the understanding of users' actions towards the planet (Stang, 2019). However, there is a general lack of accessibility. While *Alba* offers several customisation features, *Plasticity*'s accessibility is limited to the options provided by the PC, and players of *The Sims 4* must rely on unofficial modifications of the game to enjoy an accessible gaming experience.

As a first approach to the accessibility of games about environmental issues, this presentation highlights the need for inclusivity in the efforts of promoting social change

towards sustainability. Further research should involve users in accessibility assessment and explore the social benefits of accessibility in games about the environment.

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María Eugenia Larreina is a PhD candidate at the Universitat Autònoma de Barcelona. She is researching video game accessibility, focusing on the needs and preferences of persons with visual disabilities and the potential application of audio description to the medium. She has been awarded a PhD grant by the Catalan Government, linked to the Research Audio Description: Translation, Delivery and New Scenarios (RAD) project.

She is also part of the TransMedia Catalonia research group and her research interests include media accessibility and audiovisual translation.

Chiara Gunella holds a Bachelor in Anthropology, Religions, and Oriental Civilizations, a Master in Migration and Intercultural Relations (EMMIR), and she is a PhD candidate at the University of Barcelona, in the research group Gènere, Identitat i Diversitat (Gender, identity and diversity). Her research interests include migration, sex-trafficking, media accessibility for migrants, serious video games for social impact and participatory methodologies.

Chiara is currently a researcher at Transmedia Catalonia where she is involved in the AMIF project MILE, aiming to create a sustainable ecosystem and replicable cooperation between municipalities and local migrant-led associations, and she is working as head of communication in the H2020 GreenSCENT project, which goal is to engage people with environmental issues in their local area through the development of accessible applications and digital platforms. Chiara is also part of the Hello Europe network, aiming to support migrant entrepreneurs around the world and co-founder of Formazione Inclusiva, an NGO aiming to decrease discrimination in the workplace.

Marina Pujadas Farreras & Sarah McDonagh

Universitat Autònoma de Barcelona

Assessing the accessibility of information about the climate crisis: A comparative analysis

Access to clear and scientifically verified information is crucial to understand the scale of the challenge of the climate crisis. Individuals and key decision makers need information that is accessible and easy to understand in order to make informed decisions and change their behaviours to minimise damage to the environment. In 2022, Google announced its collaboration with the United Nations to provide scientifically verified and easy to understand information panels and visuals on the causes and effects of climate change (UN 2022). While their use of Plain Language, a language variation that falls under the umbrella term of Easy to Understand, makes the information accessible to the general non-expert reader, people with cognitive, intellectual disabilities or reading difficulties might still have difficulty parsing through the meaning of these panels and visuals. Taking this as our starting point, in this paper we will assess the main access barriers to information about the climate crisis using the examples of London's Environment Strategy Executive Report in Easy Language (2018), the Northern Ireland Discussion Document on Northern Ireland Climate Change Bill (2020) and the Easy News´section on climate change from the website United Response (2021). We will analyse the communication strategies and language style used in each of these different examples. Finally, we will conclude this paper by offering recommendations on how to create material on the climate crisis in Easy Language.

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Marina Pujadas Farreras is a predoctoral researcher in the Department of Translation, Interpreting and East Asian Studies at the Universitat Autònoma de Barcelona (UAB). She holds a BA in Translation and Interpreting from the UAB and a MA in Audiovisual Translation from this same university. She has been awarded a PhD grant by the Catalan Government, which will allow her to pursue her research interest in media accessibility.

Sarah McDonagh is a postdoctoral researcher at the Universitat Autònoma de Barcelona (UAB). She has experience working with the digital archive The Prisons Memory Archive in Northern Ireland to create descriptive guides of the controversial prison of the Maze and Long Kesh. Sarah's principal research interests are in media accessibility, particularly subjects related to accessibility of digital heritage, which

includes access facilities such as audio description, touch tours, British and Irish sign language interpreting, and captioning for the Deaf and hard of hearing.

Sarah has been involved in the EU-funded Accessibility, Culture and Training (ACT) project, in collaboration with various partners across the UK and leading institutions in Europe. She has also worked with the Prisons Memory Archive to design accessible content for people of varying sensory abilities, as well as address key ethical considerations regarding heritage management and preservation. She is currently involved in the H2020 GreenSCENT project, working as part of an international team to engage people with environmental issues in their local area through the development of accessible applications and digital platforms. Sarah is also a member of the Transmedia research group.

Irene Hermosa-Ramírez

Universitat Autònoma de Barcelona

Universal and ecological design in Media Accessibility: Finding Common Ground

This paper presents a reflection on how the seven principles of universal design (Connel et al.,1997): 1) Equitable use, 2) Flexibility in use, 3) Simple and intuitive use, 4) Perceptible information, 5) Tolerance for error, 6) Low physical effort and 7) Appropriate size and space for approach and use can be combined with or linked to the seven principles of ecological design (Shu-Yang, Freedman & Cote, 2004): 1) Meet the inherent needs of humans, 2) Move toward resource sustainability, 3) Maintain ecological integrity, 4) Emulate natural ecosystems, 5) Eliminate natural debt, 6) Protect natural habitat and 7) Increase environmental literacy in Media Accessibility. Researchers such as Gosset et al. (2009) have already conducted similar analyses in the scope of architecture and urban planning, but the concurrent application of both designs has not yet been explored in our field. Here, we mirror the analysis put forward by Udo and Fels (2010) and focus on the principles more relevant to the modalities of Media Accessibility (audio description (AD), subtitles for the d/Deaf and hard of hearing, Sign language interpreting, audio subtitles, programmes in easy-to-understand language, etc.).

As illustrations, the principle of equitable use, particularly when it comes to providing equivalent means of use for all users is very much in line with principle one of ecological design: the need to meet the inherent needs of humans and their economy, while avoiding ecological damage. This undoubtedly includes the right to participate in cultural life (Article 30, CRPD, 2006). Also within the equitable use principle, making the design appealing to all users increasingly requires a sustainable design. The principle of flexibility in use would also benefit from resource sustainability (principle two of

ecological design). In our case, this could be done by "upcycling" (Oncins, 2021) or translating (Jankowska, Milc & Fryer, 2017) ADs.

Irene Hermosa-Ramírez, PhD researcher in Translation and Intercultural Studies at Universitat Autònoma de Barcelona (UAB), holds a B.A. in Translation and Interpreting (University of the Basque Country) and a M.A. in Audiovisual Translation (UAB). Her thesis focuses on the language and semiotics of opera audio description. She is a member of the TransMedia Catalonia research group, collaborating in the RAD project. She is the secretary of the Catalan Association for the Promotion of Accessibility.

Marta Brescia Zapata

Universitat Autònoma de Barcelona

Green conference for all: Guidelines for accessible and sustainable events

Nowadays, both accessibility and sustainability are hot topics on the European agenda. In the field of standardisation, EN301459 recommends using the Universal Design when developing any system or product. This requirement is becoming mainstream with the pull from the United Nations Convention on the Right of Persons with Disabilities (CRPD): now it is also an issue of political will and moral obligation. Also, the ISO 20121 standard specifies requirements for an event sustainability management system for any type of event or event-related activity and provides guidance on conforming to those requirements. Nevertheless, conferences, seminars, summits, and meetings in academic contexts are not always accessible and/or sustainable. To gather data towards possible solutions, a co-creation workshop will be carried out during the Festival of the New European Bauhaus. It will focus on the practicalities of organising and coordinating an accessible and sustainable event that caters to people with diverse access needs. Through the use of practical examples taken from the work carried out as part of different EU projects, participants in this workshop will gain an insight into the logistics of creating an accessible event that is user-centric, collaborative and sustainable. The workshop's main aim is to settle a discussion on how to prepare guidelines and recommendations to organise a green, fully accessible event regardless of its format.

This presentation will start presenting the findings and insights from this workshop and then discuss the guidelines worked out during this use case. This study is groundbreaking since it is the first attempt to integrate universal accessibility guidelines within the standard ISO 20121 aiming at creating a template to ensure that any type of academic or scientific event (live, online or hybrid) is accessible and sustainable from its onset.

Marta Brescia-Zapata is a PhD candidate in the Department of Translation, Interpreting and East Asian Studies at the Universitat Autònoma de Barcelona. She holds a BA in Translation and Interpreting from Universidad de Granada and an MA in Audiovisual Translation from UAB. She is a member of the TransMedia Catalonia research group (2017SGR113), where she collaborates in two H2020 projects: TRACTION (Opera co-creation for a social transformation), and GreenScent (Smart Citizen Education for a greeN fuTure). She is currently working on subtitling for the Deaf and hard of hearing in immersive media, thanks to a PhD scholarship granted by the Catalan government. She is the Spanish translator of Joel Snyder's AD manual "The visual made verbal", and also collaborates regularly as subtitler and audio describer at the Festival INCLÚS.

Miroslav Vujičić & Uglješa Stankov

University of Novi Sad

Behind the Smart - The hidden costs of tourism technology optimism

Smart tourism is a prevalent discourse in tourism theory and practice that creates a positive outlook on the future of tourism as a more accessible, sustainable and resilient industry (Gretzel, 2021; Stankov & Gretzel, 2021). Much of this optimism stems from the belief that new technological solutions benefit tourists, tourism destinations, and the tourism ecosystem as a whole (Stankov & Gretzel, 2020). To a certain extent, this phenomenon can be explained by the idea of technology optimisms stating that people who are constantly exposed to technological advancements develop an unconscious association between technology and success. Overoptimism is at the heart of that phenomenon, and as such, it could be considered a bias toward technology (Clark et al., 2016). There are many reasons to be optimistic about technology, but one of the most common is the fact that technological breakthroughs can have enormously positive impacts on the economy, society, and individual lives (Paro et al., 2021). Nonetheless, this is only one side of the story. In many instances, technological failures go unnoticed, and the tourism industry incurs a substantial amount of hidden technology costs (Case, 2015; Clark et al., 2016). Thus, this paper investigates the primary costs of the smart tourism agenda, often overlooked by tourism literature, beginning with the digital footprint created by tourism technology, green-washing by tourism technology providers, and concluding with the detrimental effects of technology-driven tourism experiences. The purpose of highlighting these costs is to aid in the discovery of a more balanced strategy for advancing smart tourism development that will truly contribute to the goals of sustainable development.

Uglješa Stankov is a Full Professor at the Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad. His main research areas are the strategic role of information technology in designing services and co-creating experiences.

Miroslav D. Vujičić is an Associate Professor at the University of Novi Sad, Faculty of Sciences. The main field of interest is decision-making processes, project management, product development, cultural tourism, and has proficiency in data gathering, analysis, and interpretation of mathematical and statistical methods.

Armony Altinier

Koena

Go4DiGreen: how digital accessibility can help refugee entrepreneurs

The Go4DiGreen project aims to improve the situation of refugees in Europe by improving their digital and entrepreneurial skills. Digital skills are crucial for working life and social inclusion. However, there are great inequalities in both developed and developing countries. The COVID 19 pandemic has made the situation worse, especially for refugees who are one of the most vulnerable populations in European society. On the other hand, refugees have a huge potential to contribute to society and to the ambitious goals of the European Green Deal. To achieve its goal, the project will develop inclusive and accessible training materials on green entrepreneurship with a special focus on digital skills. Accessibility barriers, and especially language barriers, can prevent refugees to exploit their full potential and use the competences and skills they acquired in their home country. As refugees may not be fluent in the local language of the place where they live, special emphasis was placed on using plain language to create the content in order to minimise the language barrier.

Armony Altinier has worked in the field of digital accessibility for 15 years. She contributed to the creation of the French Accessibility Standard based on the International guidelines (WCAG) in 2015. Speaker, author, and social entrepreneur since 2007, Armony created the French social enterprise Koena, of which she is president, with the aim of promoting digital accessibility. Koena participates in Erasmus research programs with various partners (universities, NGO, associations) from various countries (Spain, Ireland, Canada, Austria, Germany, Bulgaria, Cyprus, Greece) to implement digital accessibility and create better standards. Koena is developing tools for professionals who want to provide online services compliant with digital accessibility laws in France and in Europe.

Xi Wang

University of Portsmouth

Translating Gardens into Multisensory Experience: An Inclusive Tour for BPS Visitors

Gardens are naturally multisensory spaces which generate significant interest from visitors, especially during the Covid-19 pandemic. However, at the same time, gardens present some access barriers for blind and partially sighted (BPS) visitors, who are not able to fully access the visual aspects. The natural terrain of some gardens can also be potentially hazardous for BPS visitors.

This paper presents a case study which illustrates our methodology for producing a smart audio descriptive guide for BPS visitors to appreciate gardens in a multisensory way. Our multi-stage methodology begins with an experimental case study in which a group of BPS visitors were led by a human guide on a tour of a historic garden – the Hillsborough Gardens. The first stage involved the tour guide and accessibility experts working closely together to plan the tour. The goal was to provide a full multisensory experience, including hearing, touching, smelling and even tasting. The guide also had to plan a safe route. Then the actual tour of the gardens was carried out with a small group of sighted and BPS visitors. We asked in-tour questions for the visitors, to stimulate reflection and to record feedback. The visitors' questions and feedback were noted, and interviews were carried out at the end of the tour. The paper presents some interesting and surprising insights which emerged from the tour. One key finding is the potential for a good guide to make visitors much more perceptive and appreciative of the garden environment, and as a result to value the natural environment much more. The paper also reviews the extent to which our customisable speech-driven smart guide can provide some of the benefits of a human guide, and some of its limitations. A number of these findings are relevant to those planning similar visits in other garden venues.

Xi Wang is a Lecturer in Translation in the School of Languages and Applied Linguistics at University of Portsmouth, UK. Xi had been working at Queen's University Belfast as a Marie-Curie Early-Stage Researcher since 2018 and completed her PhD in Translation Studies at Queen's in July 2022. She currently teaches MA modules in Translation Technologies and Critical Approaches to Specialised Translation. Xi holds two MA degrees in Translation and Interpreting at Jilin University and Queen's University Belfast. Her research interests are in audiovisual translation and media accessibility. Xi has worked with world leading tourist attraction Titanic Belfast and RNIB to investigate novel access options that employ new technologies to improve accessibility and visitor experience for blind and partially sighted visitors.

Tom Greenwood

Wholegrain Digital

KEYNOTE LECTURE: Environmental sustainability and accessibility in digital design synergies

Tom's talk will focus on the potential synergies between environmental sustainability and accessibility in digital design, highlighting how the pursuit of reduced environmental impact supports the creation of more inclusive and accessible online services.

Tom Greenwood is the co-founder and Managing Director of Wholegrain Digital a certified B Corp, and a specialist in web performance and sustainability. With over 15 years of experience designing and developing sustainable websites, Tom is also the author of the book *Sustainable Web Design,* lead author of the Sustainable Web Manifesto and editor of the Curiously Green email newsletter.

Gian Andrea Giacobone & Alessandro Pollini

Università telematica internazionale Uninettuno

GreenSCENT project and Sustainable Interaction Design: exploring inclusive sustainability education

Nowadays, although we are increasingly aware of the environmental change that we are producing, our readiness to break the behavioural patterns to change the negative effects of the events on the planet is quite low. Considering this, the urgency of effectively delivering a message to foster social and individual change is nowadays vital. For this reason, an integrated and holistic approach to sustainability education is required to enable young generations to empower their knowledge, values, and attitudes towards accessible, inclusive and respectful societies. This contribution describes the research activities that are conducted in the H2020 EU funded Research and Innovation project GreenScent "Smart Citizen Education for a Green Future" (https://www.green-scent.eu), aiming to change citizens' behaviours allowing them to be the ones who act to implement the policies of the European Commission in the context of the Green Deal.

This project aims to design accessible and inclusive technology-enhanced learning experiences by studying complex societal, cognitive and interactional aspects. The methodology will integrate participatory, critical and experimental design research approaches towards knowledge acquisition and competence building for the interpretation of the world as made up of complex human-technology-environment assemblages (Light, 2022).

This research aims to contribute to evolve the Sustainable Interaction Design field (SusIxD) (Blevis, 2007) devising processes, platforms, and tools that may catalyse societal transitions according to a sustainability through design approach, i.e. how interactive systems can be used to promote a more sustainable behaviour change

(Fritsch & Brynskov 2011). This will allow us to experiment with sustainability in design, i.e. how sustainability can be used as a critical lens to reduce the negative impact of interactive technologies themselves (Mankoff et al., 2007).

Finally, the reported activities are used to investigate inclusive sustainability education according to a systemic approach, including accessible and usable validation, cognitive ergonomics, inclusive interaction design, and behavioural change. The expected outcome is the development of interactions and interfaces that will prevent the overload of individuals, the isolation of vulnerable groups and the break of community exchange. Here is where it is important to view interaction design as broader than our direct interfaces with technology and regard it as a cultural phenomenon (Light, 2022).

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Gian Andrea Giacobone is a postdoctoral researcher in interaction design at Università telematica internazionale Uninettuno.

Alessandro Pollini is an Interaction Design researcher at the International Telematic University Uninettuno. He is a designer and cognitive ergonomics specialist, experienced both in R&D and product design projects. He has been involved in EU Research and Innovation Projects for +15 yrs in fields such as ICT, Ubiquitous Computing, Human-Robot Interaction, Technology-enhanced Learning and Security.

Estel·la Oncins

Universitat Autònoma de Barcelona

Sustainability in online teaching: train the trainer

Online teaching and learning courses involve less energy and lower CO2 emissions than full-time campus-based courses (Roy et al. 2008). Still, implementing online or low carbon blended education has high implications for many stakeholders in educational contexts. Thus, it demands leadership of professionals, technical and pedagogical support of departments, development of lecturers, adapted design of curricula and teaching materials, and active learning attitude of learners (Versteijlen 2017).

During COVID-19 educational organisations and governments provided active support for teaching professionals to create online teaching materials (UNESCO, 2020). This support aimed at upgrading the ICT skills of teaching professionals for the use of online platforms to assist them with the preparation and delivery of online sessions. However, are teaching professionals prepared to adapt and create accessible and inclusive curriculums and course materials for the development of their online courses? Are these professionals able to address the diverse needs of their learners in online teaching? In this presentation, the IDE@ project will be explained. The project aims at developing the skills and designing the curriculum for the profile "Certified Trainer in Inclusive Distance Learning". This certified trainer may be in charge of understanding, detecting, planning, designing, creating, and managing inclusion and digital accessibility in online educational contexts.

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Estel·la Oncins holds a Phd in Accessibility and Ambient Intelligence from the Universitat Autònoma de Barcelona.

She has a large experience in providing accessibility for live events as a freelance translator, subtitler, surtitler, respeaker for different Spanish televisions and conferences, and as an audio describer for Liceu Opera House. Her research areas are audiovisual translation, media and digital accessibility and creative industry.

She is currently involved in the Education and Outreach Working Group (EOWG) from W3C. She is a partner in KA2 IMPACT, IDE@ and YOUNGARCHERS. She is also a partner in H2020 projects MEDIAVERSE and GREENSCENT.

Loukas Katikas

Institution Ellinogermaniki Agogi

Schools as Living Labs for the New European Bauhaus

Societal values are strongly formed by public models, this is also true for buildings. It is easier to gain people's attention to the need for change, to significantly increase the quantity and quality of energy-efficient retrofits in Europe, when public authorities and governments are adopting the appropriate approach. It is therefore important to demonstrate exemplary solutions at frequently used buildings like schools, universities and science centres. Based on the concept of the living labs and the New European Bauhaus (NEB) initiatives, NEB-Labs will work as a 'think and do tank' to co-create, prototype or even test new tools, solutions and policy recommendations in the school settings. Hence, through the NEB-Labs, school communities will: i) develop citizen awareness-raising activities spreading the concept of energy and resource-efficient building and renovating, ii) promote education and training for sustainability, helping all actors (school staff, students, families, citizens) development competences and positive behaviours towards environmentally respectful energy use. Nevertheless, the transformation of places of learning that connect a tangible place with innovative pedagogical methods and the local community is a quite complex learning ecosystem. To succeed in the overarching goals of this vision, schools must reflect the values of the European Green Deal and the New European Bauhaus (sustainability, aesthetics, inclusion). To this end, the main contributions of this study include a primer on how to develop and deliver: i) the pathway on how schools can become a physical place of education and knowledge, ii) to propose ways of learning or gaining knowledge and/or the education and pedagogical focus for an effective integration of these topics to the curriculum and finally, iii) re-consider the relationship of the schools with the local communities as hubs of innovation towards the green transition and sustainable development.

Loukas Katikas graduated from the Environmental Department of the University of

Aegean and in 2012 he got his master's degree in GIS and Natural Disaster Management. He holds a PhD in Geospatial Sciences from the National and Technical University of Athens. As a researcher, he participated in several EU projects related to Climate Change, Environmental and Disaster Risk Management, Geosciences and STEAM education as well as to Nature-based Solutions and Environmental Education in schools. From 2016 he is a proud member of the 100 Mentors community for mentoring in schools worldwide covering the fields of Environmental Science, Geography and Geospatial Information Science. His research interests and recent scientific publications lie in the areas of Environmental Applications and GIS, Geostatistics and the optimal planning of Renewable Energy Sources. He has been working in the Research and Development department of Ellinogermaniki Agogi since April 2021.