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Social cohesion, Participation, and Inclusion  
through Cultural Engagement

## D2.2 INITIAL METHODS FOR REFLECTION

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## Executive summary

This report on methods for reflection serves as a first iteration of methods and theories that support the overall objective of WP2 to develop citizen curation methods based on interpretation and reflection, following the aim of SPICE to enhance social cohesion. As such, this report explores and suggests methods to support reflection within and across groups. It must be highlighted that the processes of interpretation and reflection work in conjunction and are conceived in SPICE as an “Interpretation-Reflection loop”. Hence, the reflection methods in this report should be considered as a whole, in complementarity with the methods for interpretation presented in D2.1. Various permutations of these methods will give rise to an assortment of approaches to citizen curation that can be organized through scripted activities and elaborations distributed in the different components of the SPICE platform.

Through the research and development in WP2, hereunder the work presented in this report, SPICE seeks to develop an understanding of the effects of interpretative and reflection processes that lead to social capital, and in particular to social cohesion. The reflection methods described in this report, are expected to support citizens in building, maintaining, and sharing representations of themselves and those of others. The resulting pathways of interpretation and reflection for citizen curation should be much more than mere collecting, in the sense that the reflection methods presented here aim to bring in focus the qualitative judgements of the citizen to the artifacts being curated, and in this way adding value judgement, context, critique, assessment, and socio-cultural implications of the selected artifacts, exhibitions or collections. Specifically, this report focuses on methods and theories springing from the fields of *narrative identity*, *duoethnography* and *cultural semiotics*, in order to develop a framework for understanding the meanings of citizen contributions and their interrelationships. The methods are targeted to the context of the case studies elaborated in WP7, where different kinds of workshops are being organized in order to iteratively prospect and evaluate prototypic activities and scripts, which can be incorporated by the work-packages working on the different aspects of the SPICE platform.

The specific reflection methods were chosen due to their potential for introducing different perspectives and different levels of analysis. Whilst the concept of *narrative identity* provides a reflective first-person approach, both individually and collectively, *duoethnography* offers tools for dialogic exploration of varying perspectives. *Cultural semiotics* on the other hand, can help to unveil the complex interrelated dynamic processes of citizen curation. As part of the Interpretation-Reflection Loop, they thus allow for a cohesive complimentary integration of methods and activities for exploring the various reflection and interpretation processes in SPICE.

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## 1.0 Introduction

The research conducted in SPICE revolves around an understanding of citizen curation as “citizens applying curatorial methods to archival materials available in memory institutions in order to develop their own interpretations, share their own perspective and appreciate the perspectives of others” (Bruni, et al., 2020). By this understanding, citizen curation is regarded as a tool for enabling greater social cohesion and follows the core idea of SPICE that citizen curation can be fostered through a variety of methods which supports processes of interpretation and reflection (see: D2.1 - Citizen Curation). As such, SPICE wishes to encompass a wide range of different audiences, as well as a wide range of use cases, in order to “promote inclusive participation and social cohesion in a variety of contexts” (Bruni, et al., 2020). The intention of this report is to provide an overview of the methods for reflection to support this idea. By utilizing these methods together with methods for interpretation, WP2 “will explore a repertoire of activities in order to test which ones are more effective in stimulating a variety of audiences to produce interpretations and perspectives that in turn will enable them to participate in a rich and diverse cultural space for reflection” (Bruni, et al., 2020).

By combining work on *narrative identity*, *duoethnography* and *cultural semiotics*, this report supports the development of a framework from which scripts and activities might be generated, which encourage reflection by enabling the audience to perceive and appreciate the values, the sentiments, the intentions and hopes reflected in the stories of persons with similar or different backgrounds (see: D2.1). Ultimately, it is the intent, and expectancy, that the combination of the reflective and interpretative processes, will reveal something about both the artifacts that are being perceived (and their histories), as well as something about the individual or the community that produced the interpretations and reflections - with the idea of constructively evidencing “variety within groups and similarity across groups” (Bruni, et al., 2020).

### 1.1 Objectives of WP2

The objectives of this deliverable spring from the original objectives formulated for WP2:

“ ... developing methods for citizen groups to build representations of themselves through interpretations and associated community vocabularies; developing methods to support reflection within and across groups drawing on similarities and differences among interpretations; developing an understanding of the effects of interpretive and reflective processes on social capital and social cohesion.”

Specifically, the objectives that have guided this “initial report on citizen reflection methods” have been:

- To investigate methods to support reflection within and across groups drawing on similarities and differences among interpretations.
- To investigate how these activities may generate input that can lead to a representation of citizen groups that can be used in the different technical modules of the platform (e.g., interfaces, user/community modelling, recommender, ontological reasoning, etc.).
- To initiate the development of a model for the “Interpretation and Reflection loop” (IRL), which converges towards Social Cohesion and its different dimensions.
- To envision how to use the methods to enrich the activities in order to capture richer input from users, which are amenable to treatment and analysis, and that will enhance the objectives of the IRL in terms of social cohesion (and its derivatives or surrogates, e.g., empathy).
- To explore how these methods can be customized and adapted to the different case studies to be subsequently refined and tested during workshops with stakeholders.



## 2.0 Social Cohesion

Most people seem to intuitively accept “social cohesion” as a desirable goal for any society, community or collective entity. Conversely, anything that goes in the opposite direction, e.g., social fragmentation, exclusion, deterioration of the social tissue, polarization, etc., is seen as a jeopardizing development for society.

The “social cohesion” literature has for decades been plagued by definitional confusion, with a proliferation of definitions that have proved difficult to combine or reconcile (Friedkin, 2004; Fonseca, Lukosch, & Brazier, 2018). The problem is aggravated by the fact that the interpretation of the concept depends on the sociological and cultural context under consideration. According to Lépineux (2005), in a sense it would be more accurate to assert that every nation has its own interpretation of social cohesion, and accordingly its own model of society, to which one may add the specificities of a myriad of international and transnational stakeholders. Schiefer & van der Noll (2017) claim that despite this lack of consensus, recent decades have seen an “inflationary” use of the concept by scientists and policy makers “as an instrument to monitor societal development and to adapt policies to face societal challenges, such as globalization or diversity.” Nevertheless, according to them, in the majority of approaches there is in fact more overlap in the different conceptualizations than has often been assumed.

Perhaps the only clear consensus that emerges in contemporary analyses of social cohesion is its consideration as a “multidimensional phenomenon” or as “a latent construct with multiple indicators” (2004). Given this definitional complexity, in SPICE we are assuming an approach that considers the construct in a dynamic way, by selecting and focusing on some of the dimensions and indicators that are relevant and pertinent to the SPICE case studies, within the context of cultural heritage and in relation to our tools for citizen curation.

By reviewing many contemporary approaches, oriented towards the operationalization and usability of the construct for policy makers, Schiefer & van der Noll (2017) identified six distinguishable dimensions of social cohesion that were found to commonly appear in the literature:

- social relations
- sense of belonging (identification)
- orientation towards the common good
- shared values
- quality of life
- (in)equality

(However, they also argue that the last three of these dimensions should, or could, be treated as antecedents or consequences of social cohesion, rather than inherent essential components).

Each of these dimensions can be further differentiated into sub-dimensions, traits or attributes. Furthermore, throughout the literature, social cohesion is also seen as a multi-level construct consisting of phenomena at the micro (e.g., individual attitudes and orientations), meso (features of communities and groups), and macro (features of societal institutions) levels. The six dimensions and some of their sub-dimensions or attributes are summarized in Fig. 1 below.

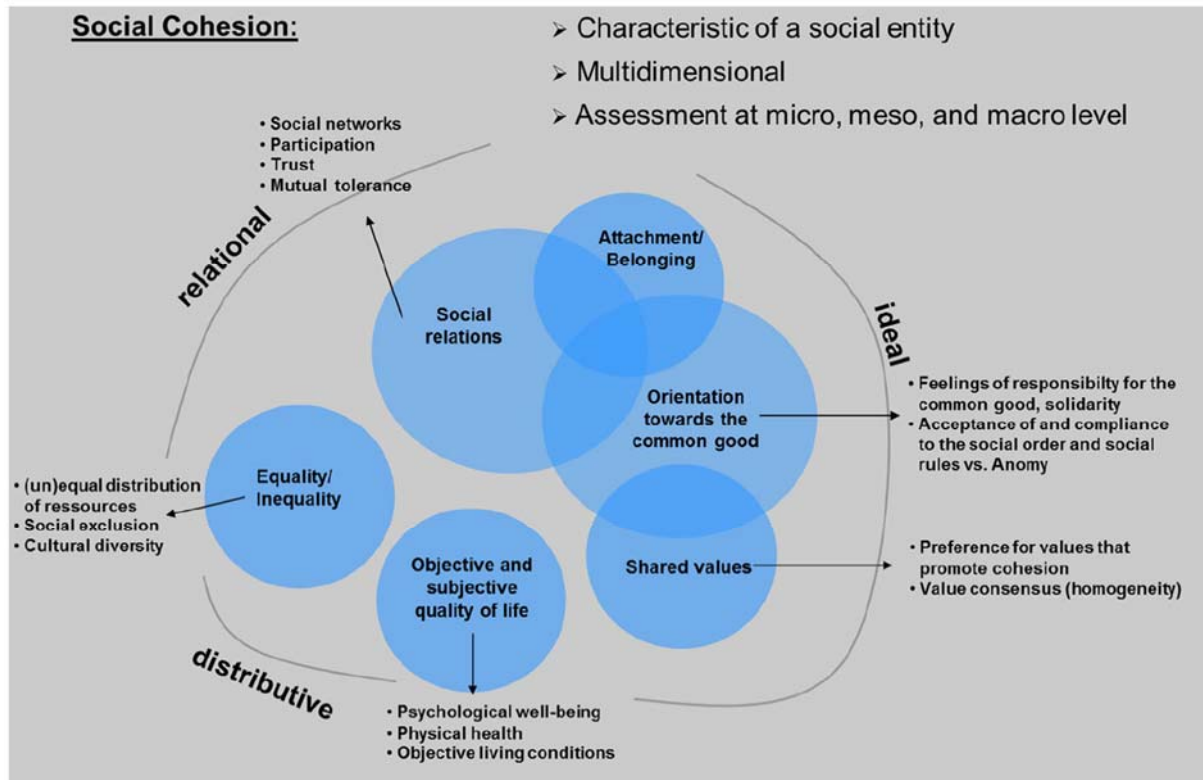


Fig. 1: Core dimensions and appertaining components of social cohesions  
(Schiefer & van der Noll, 2017)

Another interesting and relevant aspect in the context of SPICE, is that based on their extensive literature review, Schiefer & van der Noll (2017) also identify four often discussed reasons for the alleged decline of social cohesion:

- The process of globalization and its associated economic changes
- Global migration movements and growing ethnocultural diversity
- The development of new information and (computer-based) communication technologies change social relationships, which are considered to be constitutive for social cohesion
- In the context of the European Union, the inclusion of additional member states is viewed as challenging national (id)entities and requiring the integration of different welfare systems

There also seems to be a difference between the academic and the policy-making approaches to social cohesion. The academic discourse (in e.g., sociology, political science, or psychology) is more focused on the conceptual and analytic understanding of social cohesion. On the other hand, the policy discourse is more problem-orientated and looks at current needs and developments within national contexts or trans-national and regional units, perhaps more concentrated on the operationalization of indicators for assessing social cohesion (Schiefer & van der Noll, 2017). It is worth mentioning that the European Commission (and the European Committee for Social Cohesion) is mentioned in Schiefer & van der Noll's (2017) review as one of the most prominent actors engaged internationally in social cohesion policy-making. They also point out that in national political debates, actors with different, and sometimes even opposing political ideologies, use the social cohesion term to promote their views. For example, by being in favor or oppose cultural diversity, promoting value homogeneity or acceptance of value diversity, or the return to traditional values and nationalism. This ambiguity makes "social cohesion" a very interesting target-construct to be included itself as a matter of reflection in the citizen curation processes of the SPICE-IRL platform. We could hypothesize a process of reflection on the many overlapping dimensions and value-sets involved in different groups of citizens' perspectives and beliefs on what social cohesion should be. In

other words, the citizens' meta-reflection on the construct (analyzed and mediated through the SPICE platform) could even become, in turn, a promoter of social cohesion, beyond the different idiosyncratic opinions on it, by identifying and highlighting what, in our "IRL-model", we call "overlapping value-systems" (see: 3.0 below).

Schiefer & van der Noll (2017) exemplify the discrepancies in the political spectrum by noting that from "a social-democratic view, equality and solidarity might be emphasized as an essential ingredient for social cohesion whereas from a nationalist view the shared national history and traditional values might be emphasized. Liberal views, in turn, might stress the importance of equality in terms of individual opportunities." This kind of differences in perspectives can also be expected to be present in debates that go beyond the political spectrum, emerging in the interrelated cultural and social spheres, adding complexity to the *heterarchical overlapping of value systems* (see: 4.3.6 below). In this direction, Maxwell (1996) points out that social cohesion "involves building shared values and communities of interpretation" (Schiefer & van der Noll, 2017).

Another relevant theme for SPICE, identified in the review by Schiefer & van der Noll (2017), comes from 20th century sociologists, who claimed that social cohesion flourishes when individuals and groups with different cultures, values, beliefs, life styles, and socio-economic resources have equal access to all domains of societal life and live together without conflict, i.e., a matter of social integration and *inclusion*. These approaches also emphasize the "social capital approach", in which the role of social networks for the functionality and problem-solving capability of the collective entity in question is paramount. The social capital thus represents "connections among individuals—social networks and the norms of reciprocity and trustworthiness that arise from them" (Putnam, 2000; Schiefer & van der Noll, 2017). The social networks in SPICE relate to the quality and quantity of social interactions between the different layers of stakeholders considered in the case studies (curators, museum workers, visitors, students, teachers, researchers, target groups, etc.), which can be characterized, for example, by frequency of visits, interactions, nature of contributions, sharing patterns, etc. and correlated to social cohesion dimensions or attributes.

As previously mentioned, in SPICE we are taking an inductive approach to social cohesion by placing the construct as the "attractor" towards which the interpretation and reflection activities of the platform will tend to evolve. Therefore, through workshops within the five case studies (WP7) we will explore different dimensions and traits of social cohesion that can be included in our Interpretation-Reflection Loop model (see: 3.03.0 below). In particular, we are exploring the dimensions of "inclusion", "identity", "sense of belonging" and "shared values" in our current work on cultural narrative identity, cultural semiotics and heterarchical value systems (see: 4.1.2 and 4.3 below). As stated by Schiefer & van der Noll (2017) in the field of social cohesion the role of shared values is ambiguous, given the alleged necessity of "value homogeneity". In this regard, "value consensus" is often assumed to smoothen social interactions. However, as they point out, a qualitative shift is visible in the field from an emphasis on consensus regarding e.g., life style, beliefs, and values as an essential element of social cohesion, to the notion that "cohesion strongly relies on the acceptance of, and constructive dealing with diversity and respective conflicts. Opponents of the homogeneity claim argue that instead of a value consensus, a society should promote (and value) the constructive coexistence of individuals who differ in their values". In this direction, our model for the Interpretation-Reflection Loop aspires to implement a novel analytical perspective that considers a multi-layered processual dynamic where the emerging cultural narrative identities (and the values that they reflect) can overlap to give place to complex heterarchical and non-transitive clusters of values.

## 2.1 Empathy

Empathy can be roughly defined as, “the ability to put yourself in somebody else's shoes,” or to feel and understand what the other person feels (Ratka, 2018). However, while in the past empathy has primarily been considered a trait, a part of our biological makeup, recent research has demonstrated that empathy is also a skill that one can effectively improve with practice. Based on his studies on empathy, Jamil Zaki (2019), compares empathy to a muscle that can grow through the right type of ‘training’. This may involve practicing compassion, meditation, establishing and maintaining diverse relationships and friendships, to reading or watching fiction (MacCormick, 2019).

Moreover, empathy can be categorized into two distinct areas: affective and cognitive. Whereas affective empathy concerns affectively responding to others’ emotions, then cognitive empathy involves identifying and understanding what the other person feels (Ratka, 2018; Molnar-Szakacs, et al., 2009). Zaki also suggests a third type of empathy, empathic concern, a type of compassion that caregivers use with patients, with the aim of improving the experiences of another person (MacCormick, 2019).

Thus, empathy does not only support a better understanding of others’ feelings and perspectives, but additionally cultivates deeper connections, tolerance and trust, helps challenge prejudice and discrimination, and inspires social change (Ratka, 2018; Riess, 2017).

A number of interventions can be used to change the level of empathy a person has toward another individual or group:

**Contact with out-groups can increase empathy toward them.** People generally have higher levels of empathy toward their in-group than their out-group (de Waal, 2010). This has been explained as due to the tribal nature of humans and the evolutionary importance of tribalism to survival (Bazalgette, 2017). However, empathy toward an out-group and its members can be increased through contact (Allport, 1954). A number of studies have shown the more time someone spends with outsiders the less prejudice they have toward them (Zaki, 2019). However, this contact has to help people to get to know each other, e.g. work colleagues, roommates, etc. Contact without understanding can decrease empathy. Seeing people from an out-group (e.g. on the street or on public transport) without a deeper connection can lead to the out-group being perceived as a threat and actually lower empathy.

**Perspective taking increases empathy.** A key method for increasing empathy is perspective taking: seeing the World from someone else’s perspective (Bazalgette, 2017; Zaki, 2019). An effective method of perspective taking is engaging with stories or experiences from the other person’s point of view. Batson (1991; 1995; 1997) suggests that people can have empathy for individuals (e.g. a particular homeless person) but not for abstract concepts (e.g. the poor). This phenomenon is reflected in the stark saying, “When one man dies it’s a tragedy, but when a million die it’s a statistic”.

**Active listening increases empathy toward individuals as well as the groups to which they belong.** In a study by Batson & colleagues (1997), participants heard the story of a young woman living with HIV. Some participants were asked to listen deeply to her with the prompt:

*“Imagine how the woman who is interviewed feels about what has happened and how it has affected her life” (Batson, et al., 1997)*

Those given the prompt had increased empathy for the woman and also cared more about people living with HIV/AIDS in general.

**Stories increase empathy by exercising theory of mind.** Theory of Mind is the ability to discern another person’s thoughts or feelings from their behaviour, expression or situation (Hoffman, 2001). Stories are a good way for people to exercise empathy and apply their theory of mind: understanding the motivations and thoughts of the characters in the story. In a study, participants read either a story about someone living

with depression or a scientific description of the condition (Zaki, 2019). Those reading the story were more likely to donate to an organisation supporting research and treatment into depression. In another study, people either read a story about a racist attack or a synopsis of the same information. Those reading the story exhibited more empathy and less prejudice (Johnson, 2013).

**Perspective giving increases empathy particularly with groups that perceive themselves as a minority, excluded or discriminated against.** A method for developing contact between groups was developed by Gordon Allport (1954). This method proposed that contact should bring groups together and give them equal status even if one has more power outside the contact session. This has since been challenged. Minority groups often feel worse after listening to complaints of a group they perceive as more powerful. Minority groups actually benefit more from perspective giving (e.g. telling their stories) rather than perspective taking (e.g. listening to the stories of others) (Bruneau & Saxe, 2012). Therefore, contact often works better when it reverses rather than ignores existing power structures.

**Having the right mindset can increase empathy.** If a person believes it is possible to change their empathy then it becomes a self-fulfilling prophecy. A person who believes empathy can change will spend more time listening to the stories and considering the opinions of other groups. People who believe empathy is a fixed trait do not. If people are given a story showing how empathy can change (e.g. an unsympathetic person who then became a community worker) they tend to behave with greater empathy. Conversely, a story showing how empathy is fixed (e.g. an unsympathetic person who then repossessed people's homes) led people to behave with less empathy. People can also convince themselves that empathy is not fixed. Students who were asked to write to another student explaining that empathy was not fixed, came to believe it and acted accordingly (Weisz, Ong, Carlson, & Zaki, 2020).

**Mentally redrawing in/out group boundaries can change the target of empathy.** People can change the target of their empathy by imaging themselves as part of a larger in-group, for example, imaging themselves as working in academia rather than working in the Open University. A study asked fans of Manchester United to explain why they loved their football team. Afterward, they walked past a jogger (actually an actor) who had fallen and twisted their ankle. They were far more likely to stop and help the jogger if they were wearing a Manchester United rather than a Liverpool football shirt. A follow-on study asked Manchester United fans to instead explain why they liked football. This time they were willing to help the jogger whether they were wearing a Manchester United or Liverpool shirt (but less likely to help a jogger wearing a non-football, plain t-shirt) (Levine, Prosser, Evans, & Reicher, 2005).

**Social norms can encourage empathy.** People are more likely to be empathetic if they believe others are too. In a study, people read a story about the homeless and were shown the responses of others to the story. Participants reported greater empathy if their peers had done the same. In another study, students were asked to write about why they thought empathy was useful and important. They then read each other's messages. This helped them to realise that empathy was the norm and to conform to that norm (Weisz, Ong, Carlson, & Zaki, 2020).

**The media used to convey the information can affect empathy.** A study compared people's reactions to another's opinions when they either read them or heard their voice. When confronted with an opinion with which they disagreed, participants were less likely to dehumanise the person holding those opinions if hearing their voice rather than reading their words. There is also evidence that virtual reality can help people to take someone else's perspective. A study compared the effect of experiencing the life of a homeless person using VR or by reading about it (Asher, Ogle, Bailenson, & Herrera, 2018). Both groups showed increased empathy for the homeless. However, the VR groups were more likely to show empathic concern by signing a petition for the homeless.

**Engagement with any form of art can increase empathy.** Numerous studies show engagement in the arts increases empathy (Kou, Konrath, & Goldstein, 2019). Artforms that have been found to increase empathy



include novels, drama, dance, music and artworks. Evidence suggests this effect is particularly strong for narrative forms of art such as novels and drama, possibly because of the increased opportunity for perspective taking. However, even with visual art people have been found to simulate the emotional expression and movement within an artwork when viewing it.

**Stress and anxiety can reduce empathy.** Anxiety, stress and tension can reduce the ability to empathise. This has been found in the medical domain in which doctors protect themselves from the stresses of the job by reducing their empathy, even though physician empathy lowers patient anxiety and delivers better clinical outcomes (Wahjudi, Findyartini, & Kaligis, 2019). In another study, theology students were told they had to go to another building to deliver a sermon about the Good Samaritan. Some were told they had to rush. Others were told they had plenty of time. Most of those in a rush did not stop to help a man (an actor) laid in pain in the doorway. Most of those not in a rush did stop to help (Darley & Batson, 1973).

Considering the contemporary views on social cohesion, there is a strong relationship between empathy and social cohesion, as we might consider how Batson, et al. (1995; 1997) remarks that “empathy is typically felt for individuals as individuals, not for groups or abstract classes of people” (Batson, et al., 1997). This follows how empathy can be understood as “other-oriented feelings congruent with the perceived welfare of another individual” (Batson, et al., 1995). Hence, empathy can be understood as being concerned with how people feel and act toward other individuals and the ingroups and outgroups to which they belong. Many breakdowns in social cohesion can be interpreted as fractures between groups (whether those groups are defined on the basis of race, gender, class, sexuality, religion, politics or some other characteristic) in which there is a deficit of empathy across those groups. Research on empathy also has many practical applications directly related to social cohesion such as reducing prejudice by promoting empathy toward outgroups. As discussed above, empathy is not fixed and could potentially be influenced by a number of interventions that could be integrated into visitor experiences co-designed within the SPICE project.

Some examples are summarised in the table below (see: Table 1).

How empathy can be changed	Design issues
Contact	How can the interpretation-reflection loop and Citizen Curation scripts encourage meaningful contact that helps to build empathy?  Bear in mind that being aware of other people but without a meaningful connection (e.g. being on a bus) can actually lower empathy.
Perspective taking	How should the perspectives of others be presented to promote perspective taking? For example, being given one story to read might be more effective than giving people a visualisation of many different stories.  How can the recommender pick the best story that would be useful for perspective taking?  Can we guide citizens’ responses to the interpretations of others in a positive direction?
Active listening	What sort of prompts and methods can be used to help citizens to listen actively when receiving interpretations from others (e.g. “Imagine how the other person feels”)?
Perspective giving	How well do different interpretation methods and prompts help citizens to give their own perspective?

	Should all participants give and take perspectives, or it is better for some to give and others to take? Should power differences in the outside World influence this choice?
Mindset	How can citizens be encouraged to have the right mindset? Can we give citizens stories or information about how empathy can change?
Redrawing boundaries	Can we encourage people to think about larger ingroups (e.g. football fans rather than Manchester United fans)?  If someone thinks about their ingroup as older British people, can they be encouraged to think about their ingroup as older people in general, or even people in general?
Social norms	How can we help citizens to perceive empathy as a norm?  Can we automatically detect high empathy responses and prioritise those as an example to others?
Media	What types of media/interface should be used in Citizen Curation tools?  Would sound or VR promote greater empathy than text?  Could SPICE text processing methods be applied to text converted from speech if using voice input?
Stress and anxiety	When and where are citizens most likely to be responsive to empathy (e.g. less likely when on a time-limited museum tour, more likely when at home or in the cafe and not in a rush)?

*Table 1: Examples of interventions for enhancing empathy*

### 3.0 The Interpretation-Reflection Loop

(Disclaimer: This section also appears in D2.1)

Even though we are reporting the methods for interpretation (D2.1) and the methods for reflection (D2.2) in two separate deliverables, there are good reasons for considering the relation between both deliverables (and kinds of methods) as complementary to each other, constituting a single whole. Interpretation and reflection are ontologically and epistemologically intrinsically related. Considered as cognitive and semiotic processes, at the ontological level it would be unnatural to separate them. Therefore, it makes sense epistemologically to explore them in complementarity. This complementarity is what we want to convey by defining the “Interpretation-reflection loop” (IRL).

In SPICE, the Interpretation-reflection loop represents the theoretical model for linking the processes of interpretation and reflection, which will be embedded in the different citizen curatorial activities afforded by the SPICE platform. It is also intended to inspire logics for how the semantic intelligence of the system analyses, elaborates and manages citizens-input in order to repropose new activities, visualizations and representations of meanings - which in turn encourage and enhance different aspects of social cohesion in a sort of inclusive participatory loop, or traversal through the system.

Thus, the methods for prompting rich interpretations and eliciting and analysing reflections will become distributed in different temporal phases and components of the SPICE system. This can be in the design of the interfaces that facilitate participation and solicit content from the participants (WP5); or it can be in suggesting new logics to propel dynamic relations within the ontologies and the architectures being defined in the linked databases (WP4, WP6); or inspiring new ways of clustering data in user-models and recommender systems (WP3). All of which should converge towards the project’s goal of enhancing

inclusion and different aspects of social cohesion. In this sense, the interpretation and reflection methods can be used to:

- Enrich the audience input, by providing opportunities for citizens to contribute content that is rich enough to be amenable to be put in relation to the different dimensions of social cohesion.
- Inspire the logic behind the visualizations, recommender systems, content analysis, ontological reasoning, sense-making systems, etc.
- Structure further audience-activities, once they have gotten recommendations, to catch new meanings, and loop again ...

In SPICE, interpretation and reflection are not conceived to happen in a vacuum. On the contrary, they are always conceived in context. The process is always linked and related to specific cases, which are determined by the five SPICE case-studies elaborated in WP7. In the same vein, interpretation and reflection are not to be thought as autotelic activities, but rather as teleological activities that converge towards the goal of enhancing inclusion and different aspects of social cohesion.

The IRL intends to model the cultural space and the process in which the citizen curation interpretative and reflective activities take place. For the analysis of the dynamics that emerge in such cultural reflective space we are relying on Cultural Semiotics methods to define the internal categories in the “topology” of such space. In this regard, Lotman’s model of the semiosphere (see: 4.3.1 below) (Lotman, 1990) can generate ideas to model the architecture and the dynamics of the cultural “cloud” in the SPICE platform (see: 4.3.6 below). In the IRL, the semiosphere represents the cultural space for collective reflection. From the design point of view, what becomes central in such space is how the system “moderates the discussion”. This implicit (and somehow unavoidable) normativity is what the design of SPICE intends to make converge towards the goal of facilitating and enabling inclusion and social cohesion.

The collective type of reflection that we are aiming to instantiate, could be seen as “practical reflexivity” (Cunliffe & Easterby-Smith, 2004), i.e.: tacit, practical forms of knowledge questioning and exploring about how we construct identities and realities. Given the recognized value of narrative methods in the cultural heritage sector (see: D2.1 – Interactive Storytelling and Narrative Methods), we prioritize methods derived from the field of Narrative Identity (see: 4.1 below) as a motor for clustering, mining and analysing the representations of the individual and collective selves that arise from audiences interacting with the heritage collections, when empowered with curatorial methods for interpretation (such as artefact analysis, storytelling, collecting, visual thinking strategies and slow looking) (see: D2.1). Through such emergent narrative identities, we can put different communities and audiences in relation with each other in order to construct shared sense and perspectives. By combining conceptual tools from narrative identity and cultural semiotics we are working on a relational model for the IRL that clusters and relates such emerging individual and cultural narrative identities in “non-categorical” or stereotyped ways, which would otherwise result in rigid, and perhaps clashing or mutually exclusive (i.e., ignored) categorizations. Even though social media has the potential to help people take new perspectives and interact with a broader range of people, in practice the recommendation algorithms quite often fail to address this goal. They are usually limited to characterise groups that can be more effectively targeted with particular content. Additionally, similarity-measures are used to suggest similar content to those previously selected, thereby reinforcing prior choices. Such technology may be effective for marketing purposes but in a cultural context it may harm socialisation and lead to cultural narrowing, rather than helping people to appreciate new perspectives. Such logic may reinforce social fragmentation, stereotyping and exclusion, and may be implicated in other societal problems (e.g., discrimination, polarization, sectarianism) which hinder social cohesion.

In the SPICE context, it is advantageous to shift our understanding of reflection from being a mere cognitive activity that gives order to events and situations, to a dialogical and relational activity designed to question static or rigid practices and perspectives (Cunliffe & Easterby-Smith, 2004). In order to introduce such dialogical activities, we are exploring the rich tradition of duoethnography (see: 4.2 below) in the field of cultural heritage. Swan and Bailey (2004) expressed concern with the way in which encouraging collective reflection was in danger of becoming a mere form of (top-down) “consciousness raising”. They



perceived that the problem may be that reflection is increasingly linked to a “therapeutic model of public sharing of emotion”. This overwhelming use of “sharing of emotions” as a “reflective” or participatory activity has increased exponentially with the advent of social media, often at the cost of intelligibility. In SPICE, while acknowledging the role of sentiment and emotions in signification processes, we are devoting efforts to emphasize intelligibility and understanding.

From the design point of view, the IRL can be seen as the canvas in which we conceive, try and experiment with different permutations and combinations of the methods and activities being considered to be distributed throughout the platform of the project and its temporal processual trajectory (see: Fig. 2, below).

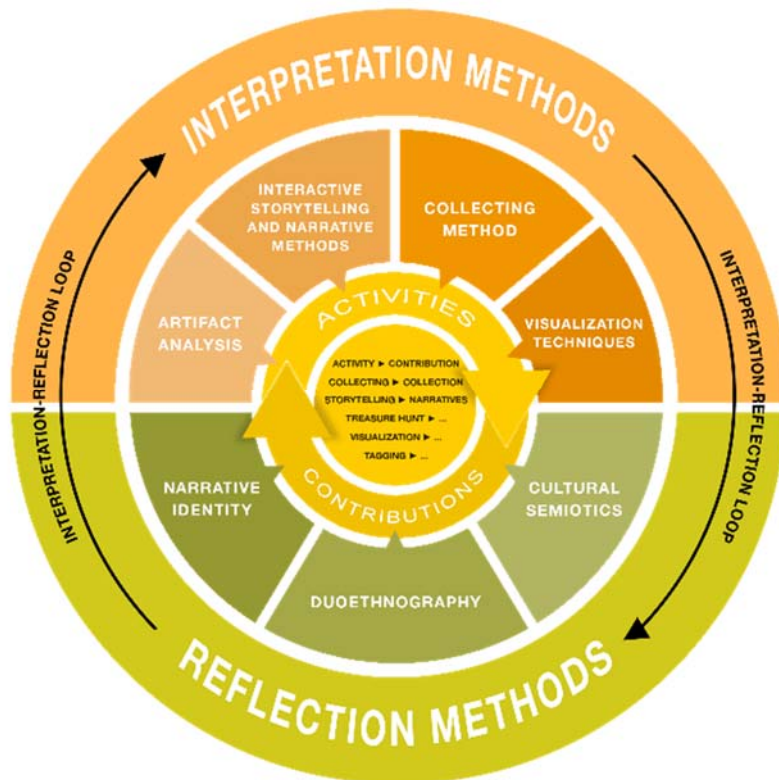


Fig. 2: Methods in the Interpretation-Reflection Loop

To summarize, we propose an initial working definition of the IRL (visually represented in Fig. 3 below):

“The interpretation-reflection loop illustrates the iterative process in SPICE for generating unique citizen curation activities by combining interpretation and reflection methods. These activities are used to encourage citizen contributions prompting interpretation, reflection, and sharing of different perspectives, in order to enhance social cohesion and promote inclusive participation of different citizen groups. The contributions obtained through the activities can also be used, through the SPICE platform, as a foundation for generating new types of activities for new contributions, hence defining the iterative loop.”.

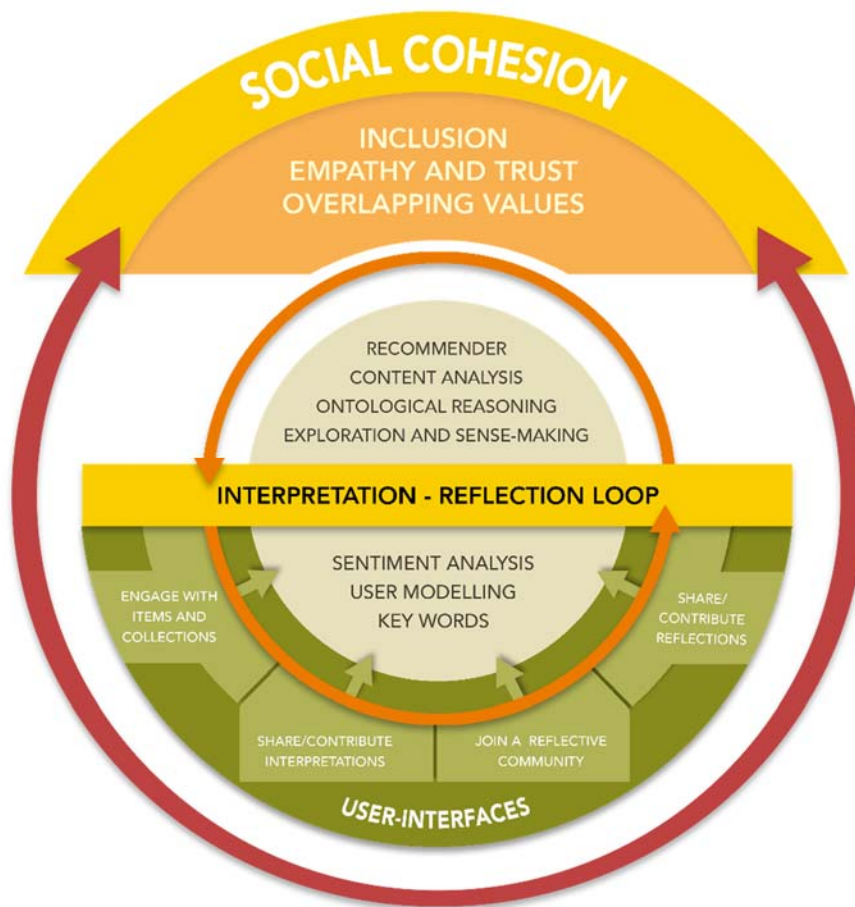


Fig. 3: The process in the Interpretation-Reflection Loop

## 4.0 Methods for Reflection

In the following, key methods for reflection in SPICE will be presented along with their relevance to the project. The methods selected include *narrative identity*, *duoethnography* and *cultural semiotics*. They were chosen due to each method introducing different perspectives and levels of analysis. Whilst the concept of narrative Identity provides a reflective first-person approach, both individually and collectively, duoethnography offers tools for dialogic exploration of varying perspectives. Cultural semiotics on the other hand, can help unveil the complex interrelated dynamic processes of citizen curation. As part of the Interpretation-Reflection Loop, the reflection methods thus allow for cohesive complimentary integration of methods and activities for exploring the various reflection and interpretation processes in SPICE. The section is structured as follows: first, each method is introduced through its key-concepts, followed by relevant examples applying the method in the domain of cultural heritage and/or interactive media experiences. Finally, the relevance of the method to SPICE is outlined through more specific recommendations for the SPICE framework, based on the previously introduced concepts and examples.

### 4.1 Narrative Identity

The ongoing debates concerning the very concept of *identity* often involve positions that either reject its definability at large or require specific criteria for various types of identity discrimination. However, acknowledging the multifaceted nature of *identity* and thereby setting aside the categorical and taxonomically rooted approaches, we can on a more fundamental level suggest that identity involves people's responses to the question: "Who are you?". Based on that, we can say that personal identity is

often expressed in a ‘narrative mode’, and we can thus view it through focusing on the first-person perspective on *identity* (Bruni, in press; McAdams, 2011).

According to Ricoeur (1991), narrative identity fundamentally refers to “the sort of identity to which a human being has access thanks to the mediation of the narrative function”. For him, this can be the “life stories” of an individual or of a historical community.

Narrative identity is thus regarded as the combined story of a person. The story one tells others about how one came to be the person one is. It is a personal *reflection* on the story of the self (McAdams & McLean, 2013), an ever-evolving story that holds information about a person’s current understanding of personal past events, their meaning in the present and with respect to an imagined future (McAdams & McLean, 2013; Bauer, McAdams, & Pals, 2008; Sims, 2005).

According to McAdams’ review (2011), the concept has evolved in many different directions, encompassing perspectives from cognitive science, life-course developmental studies, cultural psychology, sociology, and personality and social psychology, having become a central component of a “full, multi-level theory of personality”. According to him, narrative identity is “[...] the internalized and evolving story of the self that a person constructs to make sense and meaning out of his or her life”, as it has been argued that “[n]arrative identity provides life with unity, purpose, and meaning” (Bauer, McAdams, & Pals, 2008). We construct our narrative identity by ordering past events into “a coherent account of identity in time” (McAdams & McLean, 2013), and as such, the “remembered and anticipated events of a person’s life become the person’s life story” (Ezzy, 1998).

#### 4.1.1 Narrative Identity as Socially Informed

Even though that narrative identity is most often considered personal and thus singular and unique for each person, there is a general consensus that narrative identity is still socially informed, since “[m]emories of personal experiences are constructed through ongoing dynamic and reciprocal interactions between the developing individual and persons, institutions, and surrounding culture” (Fivush & Merrill, 2016)

This agrees with the ideas of Bakan (1966), who stated that two *core tendencies* of humans, are *agency* and *communion*, i.e., individuality and “participation of the individual in some larger organism of which the individual is a part”. Following this bidirectional relationship between the self and the community, it has been argued that “narratives are deeply embedded in sociocultural interactions across the life course, how individuals story their lives reflects both explicit efforts at meaning-making and implicit modes of being in the world” (Adler, et al., 2017). By this, it can be argued that narrative identity is formed in the individual, in “cooperation” with the community of which the same identity is a part. As we experience life, we react to the accepted norms of society, both by conformity and by confrontation, and as such individual values are affected by society and culture (Fivush & Merrill, 2016).

This co-dependent relationship between the self and the community, introduces the dilemma that one cannot be separated from the other. Anthony Giddens (1991) describes this interaction between the identity of the individual and the society to which he or she belongs, as the way in which “[t]he narrative of self-identity has to be shaped, altered and reflexively sustained in relation to rapidly changing circumstances of social life”. Additionally, self-constructed narratives have been suggested to serve as a direct representation of a person’s perceptual model of experience, sense of personal and cultural identity, and to be involved in the creation and construction of memories and social relational patterns (Barthes, 1975; Ricoeur, 1984; Polkinghorne, 1988; Bruner, 1990).

The early descriptions of narrative identity by Paul Ricoeur (1988) suggest that “[t]he notion of narrative identity also indicates its fruitfulness in that it can be applied to a community as well as to an individual”. As Ricoeur (1991) noted, our constructs are “[...] self-instructed by cultural symbols, the first among which are the narratives handed down in our literary tradition”. Given that throughout our life we are continuously formulating this story through a narrative, both story and discourse might change depending on the current situation in which the story is told. In hindsight we reflect on memories of the past, and potentially alter the

significance and meaning of such memories, effectively changing our stories of ourselves. Furthermore, the context in which we tell our story varies. Depending on the current social context, and therefore the current audience, our expectations of the accepted values and norms of the new audience influences which events we choose to include, and more importantly which to omit, from our story, effectively changing both story and discourse (Lucius-Hoene & Deppermann, 2000).

Originating from the perspective of narrative identity, Margaret Somers (1994) further asserts that “[w]e come to be who we are (however ephemeral, multiple, and changing) by being located or locating ourselves (usually unconsciously) in social narratives rarely of our own making” (Somers, 1994). By this, she connects the narrative identity of the individual with the influences of the surrounding society, in what she calls the “social construction of identity”.

#### 4.1.2 Cultural Narrative Identity

Recent understandings of narrative identity suggest that a person’s life story says as much about the culture wherein a person’s life finds its constituent meanings as it does about the person’s life itself. In constructing self-defining life stories, people draw heavily on prevailing cultural norms and the images, metaphors, and themes that run through the many narratives they encounter in social life (McAdams, 2011). This cultural perspective still has the main focus on the individual, where culture is “just” an influence or a constraint in the development of individual narratives (Bruni, in press). With this in mind, Bruni brings together the notions of “narrative identity” and “heterarchy of values” in order to synthesize a relational, processual and heterarchical notion of *cultural narrative identity*. For this aim, he highlights the centrality of cultural dynamic “markers”, including “values”, in the determination of identities: “Values may be spread throughout a web of emerging intertwined spheres and domains, encompassing inseparably the individual, the social and the cultural; in domains that go from private to public, from family to work, from local to national to regional to global, touching the many nuances of interest groups and stakeholders co-existing in a globalized civil society” (Bruni, in press) (see: 4.3 below). Hence, we argue that cultural narrative identity is far from just isolated and static, but rather in its core, a dynamic, relational, multidimensional and processual phenomenon, which rely on two distinct, yet simultaneous aspects: a dynamic aspect, which yields development and transformation and affords agency to those that “belong” to the culture in question, and a static aspect, which lays in its foundation and origins, or “that which has to be handed over” from generation to generation. It is the processual changing dynamics between these two aspects that constitute the narrative identity of a culture. In other words, we can regard *cultural narrative identity* as the dialectic between the “roots where you come from” and the “values where you stand right now” (Bruni, in press).

#### 4.1.3 Relevance to SPICE

By employing narrative identity as a method, when you ask people how they came to be and who they are, they will typically also reflect on the future, as they place themselves in an evolving life story, with settings, scenes, characters, plots, and themes. This is what situates a person in the world, providing meaning and purpose. Elements of the method can also be combined with interpretation methods in SPICE (see: D2.1) to enrich the citizen curation activities, which in turn will be implemented in the interfaces for these activities (WP5). For instance, storytelling activities, could potentially benefit from applying the perspective of narrative identity and cultural narrative identity to the proposed activity (see: D2.1 – Interactive Storytelling and Narrative Methods). Hence, narrative identity as a method for SPICE, is expected to be useful for deriving information about the preferences of the individuals, as well as the features of the culture. As such, narrative identity might serve as a framework for the development of the ontologies in different knowledge areas developed in WP6, as it can potentially connect ontologies for storytelling and narratives, emotions, and identity. Furthermore, employing narrative identity as a method can also engage the citizens in reflective processes. Reflective processes in the sense of personal reflection, potentially (and hopefully), engaging the citizens in more empathetic ways towards people that share their values, as well

as people that diverge. As such, it has been proposed that “[t]hose aspects of a group identity which include a narrative, web of traditions, and myth are created and constantly revised by that group in order to further its own agenda and promote social cohesion” (Schindler, 2014).

As one of the key objectives of SPICE is to identify methods that “assists citizen groups in building a representation of themselves and appreciating variety within groups and similarity across groups, to enhance social cohesion” (Bruni, et al., 2020), we argue that for SPICE it is specifically the previously mentioned duality of narrative identity, of both being personal and individually unique, meanwhile being also a phenomenon that is socially and culturally manifested, which is of interest.

As narrative identity holds potential information about the values and beliefs of both the individual citizen as well as the culture(s) in which the citizen developed their narrative identity (Ricoeur, 1991; Ezzy, 1998), a dynamic perspective of cultural narrative identity can be relevant, as it potentially enables the grouping or clustering of citizens in novel and innovative ways, possibly revealing surprising connections to “others”, which in turn is expected to enhance empathy and social cohesion. As such, the perspective of *narrative identity* and *cultural narrative identity* can inform the development of the *user-* and *community models* as well as the *recommender system* in WP3, by suggesting a dynamic model of overlapping systems of belonging and dynamic categories, which in turn draws upon visualization techniques (see: D2.1 – Visualization Techniques) in order to produce representations of these dynamic “similarities and differences”.

As at the core of any type of identity (narrative, cultural or social) is the acknowledgment of some type of a boundary (self-other, them-us, ours-theirs), any form of identity also naturally depends on the need for ‘dialogue’. Thus, we can additionally use cultural semiotics and particularly the semiosphere model (see: 4.3 below) to better contextualize and visualize narrative identity and values by highlighting these dynamic boundaries.

Additionally, by modelling and highlighting idiosyncratic narrative identities of specific target groups, it is conceivable that such an approach can support the specificity of each of the five case-studies in terms of the local cultural context of the particular heritage institution and the target group that the case is portraying.

#### 4.1.4 Practical Examples

The following section holds examples of the concept of narrative identity applied in the domain of cultural heritage and interactive media experiences. As narrative identity is often used conjointly with storytelling and narrative methods (see: D2.1 – Interactive Storytelling and Narrative Methods), the following examples can also parallelly be considered to demonstrate those.

##### *Toward an Integration of Narrative Identity, Generativity, and Storytelling in African American Elders*

Among African Americans, storytelling has been used for centuries as a way “to pass down traditions to younger generations, as well as make meaning for themselves” (Fabius, 2016). This review paper aims to investigate the link between narrative identity, storytelling and generativity (i.e., the interest in establishing and guiding the next generations, which also involves a shift from being mostly self-focused to other-focused) in African American elders.

With a focus on generativity, Fabius (2016) argues how “practicing storytelling methods allows older adults to share their narrative, and the listener is better able to understand the experience of the individual (Black & Rubinstein, 2009)”. Following similar arguments on the importance of sharing of family narratives (which in turn aids in the development of personal identity), as proposed by Robyn Fivush and Natalie Merrill (2016), it is concluded that “families are a major source of support in African Americans, elders are expected to help in the development of young people, and families stick together through adversity”. Fabius further connects the individual narrative identity with a cultural narrative identity as “individuals



listen to and share stories throughout their lives. It is in these stories that culture is shared and lessons are learned”.

### *Poetic Reflection Through Digital Storytelling: A Methodology to Foster Professional Health Worker Identity in Students*

This paper reports on a case that involved a group of students in the field of “Public Health Issues” at Oslo University College (Jamissen & Skou, 2010). Typically, students prepare for their future career as health workers by developing scientific and technical knowledge – for example through assignments which are often descriptive and factual and emphasize analytical and rational thinking. However, students are not often offered the possibility to reflect on other key aspects of healthcare, such as the need to understand the feelings and the different ways of thinking and behaving of patients, relatives, co-workers and other professionals involved in the complex processes of healthcare.

In this case study, the students were therefore asked to produce some digital stories that represent some key moments of the life of a health worker. The very activity of crafting stories and sharing stories allowed students: (a) developing a more personal and empathic understanding and (b) learning to appreciate how people can interpret the same situation in different ways. The stories that these students tell themselves during the workshop are important to build their identity as health workers.

This study can be connected to the concept of *Story Circle* (see: D2.1 – Interactive Storytelling and Narrative Methods), and the digital storytelling workshop to which the concept was developed. Similarly, here there are arguments for improved empathy from the exercise of listening and telling personal stories.

For SPICE, this underlines the importance of eliciting personal narratives, i.e., the narrative identity of the citizens.

### *Seasons of migrations to the North: A Study of Biographies and Narrative Identities in US-Mexican and Swedish-Chilean Return Movements*

In her study, Tollefsen Altamirano (2000) applied the concept of narrative identity when examining the dynamics of geographical return movements in two North-South contexts, US-Mexican and Swedish-Chilean. Although the study was largely based on in-depth biographical interviews focusing on the individual lived experiences of migrants and refugees, it also took into consideration the broader social, economic and political contexts.

Built around various themes, such as everyday situations, circumstances and meanings ascribed to the emigration and return, the empirical data from the two case study contexts involved 17 life history interviews. Moreover, the study investigated the consequences of return concerning “social mobility, meanings of return and the shaping of identity-place relationships for the subjects of migration”. Thus, the narratives from the biographical interviews were used to investigate how migrants made sense of their exile and return experiences, and were additionally used to analyse the process of shaping the migration biographies. This involved establishing different categories and themes for various situations and experiences (e.g. family situations, work identities, experiences of migration, exclusion etc.).

#### 4.1.5 Recommendations for SPICE

Following the dynamic approach to identity as proposed by Bruni (in press), and with a focus on enhancing social cohesion by assisting the citizens with “appreciating variety within groups and similarity across groups” (Bruni, et al., 2020), we propose that the community models (see: D3.1) within SPICE should be focused on the idiosyncrasies of the individuals, and the relational clusters that these might form in the modelling of the virtual communities, for instance, through overlapping heterarchical values (see: 4.3.6 below).

Supporting the proposed concept of *cultural narrative identity* and its focus on *dynamic* cultural markers or values, Margaret Somers (1994) similarly argues against an approach to identity focusing on *static*

normative categories of ethnicity, class, political perspective etc., as such categories seek to fit the individuals within pre-defined sets of attributes and values, which should then supposedly be able to explain and predict the behaviour of the individual. As with characters in narratives (see: D2.1 – Interactive Storytelling and Narrative Methods), such ‘types’ and categorizations can be argued to over-stereotype the individual. According to Somers (1994), static categorizations, such as e.g. personality types, poses the issue that “[t]here is no reason to assume a priori that people with similar attributes will share common experiences of social life, let alone be moved to common forms and meanings of social action”.

Given this, for SPICE, we propose modelling overlapping dynamic categories and criteria for belonging, both at the individual (i.e. user, participant) and cultural level (i.e. community, group), as we argue it can be beneficial to build community-models (WP3) and network ontologies (WP6) on “complex relational and cultural matrices determined by empirical inquiry and not by a priori assumptions” (Bruni, in press).

However, although we do propose not to conform to categorical understandings of culture, we do recognize that such categories might be used as subsets or as tools for dynamically classifying a group of stakeholders which seemingly share certain sets of attributes, be that communities of interest or communities of practice (see: D7.1). For instance, since the organising of people (and characters) into normative categories is so inherent in our perception, dependent on the goal of a visualization (see: D2.1 – Visualization Techniques), applying stereotyping dichotomies can aid in illuminating differences between a citizen and a specific group (e.g., people from another country, with a different religion or with a different gender, etc.), even if such categories are static and the underlying user- and community models are developed dynamically. Much like Somers (1994), we are therefore “not suggesting that there is no place for the use of categories of identity in everyday social practice”.

Narrative identity involves the personal story of an individual or a culture, but for SPICE we do not imagine the story of the individual to be gathered directly, as this involves a degree of intimacy, which people might be uncomfortable with in a highly public setting as SPICE envisions. Instead, we propose to extrapolate stories of narrative identity by combining the perspective of narrative identity with other methods. I.e., following how “storytelling methods seem to fit well the phenomenon of autobiographical memory” (McAdams, 2018), narrative identity can be combined with storytelling techniques and artefact analysis (see: D2.1), by which an individual or a group can be prompted to tell stories about their own life and experience through the interpretation of a particular object or collection. This also corresponds with the idea of the Interpretation-Reflection Loop (see: 3.0 above).

In such an example, the narrative identity methodology can be about identifying and mining different components of personality (e.g., values) in the stories generated. Hence, for SPICE, an order for processing narrative identity, might then look as follows:

Artifact analysis → Story of Individual → Features of user → user-modelling

If we acknowledge that narrative identity is tied to the individual, whilst saying as much about the culture in which it is formed, it can then be argued that the story of the individual must be gathered before an analysis of the culture from which it is formed can be determined. This suggests an order for processing narrative identity as follows:

Artifact analysis → Story of Individual → Features of user → Features of the culture →  
Community-modelling

In our case, we are initially focusing on *values* and *perspectives* reflected in the stories (see: 4.3.6 below).

According to McAdams (2018), narrative methods are valuable in cases “where you want to know what the memories mean for the people who remember them, especially if you are interested in how people generate meanings spontaneously, in the very act of narrating”. The variety of “traits” that constitute an identity, offer a repertoire of potential markers that can be purposefully mined when analysing the emerging stories of subjects performing for instance artefact analysis (e.g. childhood identification, aptitudes developed out of endowment, opportunities offered in social roles, sense of belonging) (Erikson,

1959). Such mining could be considered by applying an organisational framework of different categories of narrative variables such as developed by Jonathan Adler & colleagues (Adler, et al., 2017; Adler, Lodi-Smith, Philippe, & Houle, 2016), which structure the narratives into four categorical themes:

- *Motivational themes*, which is regarded as “individual differences in narratives that highlight what the protagonist currently seeks, has sought in the past, or has achieved”
- *Affective themes*, which concerns “the emotional quality of a part or whole of a narrative”
- *Themes of integrative meaning*, which represents “the extent to which the narrator makes an interpretative evaluation of the event or life he or she has narrated and seeks to connect some of its content to the narrator’s self”
- *Structural elements of narratives*, which “refer to how the story is written or told in terms of the order of the content narrated, its coherence, and the complexity and details of the story, as well as the expressive sophistication of the narrator”

Each of these themes holds narrative variables, that can be used as parameters when mining the narratives elicited from the citizens. For instance, within the *affective themes* can be found the *narrative measures of redemption and contamination*, which “capture shifts in the emotional tone of narratives”. Given this, if a story starts out negative but ends positive, one such shifts in the emotional tone is present, which is specifically regarded as *redemption*. If this occurs the other way around, with a story starting out positive but ending negative, it is described as *contamination* (Adler, Lodi-Smith, Philippe, & Houle, 2016; Adler, et al., 2017). Hence, these narrative measures focus on *sentiments*, which relate to the ontologies of emotions and sentiments developed in WP6 (see: D6.2 - 13: Emotion Knowledge Area) and implemented as sentiment analysis in WP3 (see: D3.2). Following the development and implementation of ontologies for a wide range of emotions in WP6 and WP3, it could be considered to relate the narrative measure of *specific emotions* to this work as well, to establish a more finely grained perspective of the emotions of the citizens.

Another aspect to be potentially mined in the stories are the “high points, low points, and turning points” which resides under the *Themes of integrative meaning* (McAdams, 2018; Adler, Lodi-Smith, Philippe, & Houle, 2016).

Another progress to be made for the method of Narrative Identity will be to consider the Narrative Identity Structure Model (NISM) by William Dunlop (2017), and re-elaborate it having in mind McAdams’ criticism, which could offer an opportunity to create a heterarchical model as opposed to Dunlop’s hierarchical model. With such an heterarchical model, we could explore the emerging plotlines intertwining in a group of participants in terms of themes, which can emerge simultaneously from e.g. artifact analysis, or can be funnelled by questions and exercises.

## 4.2 Duoethnography

Since the advent of postmodernism during the late 1970s, several scholars have placed an importance on culture and storytelling as forms of social science inquiry. This was deliberately carried out in an attempt to expand the scope of inquiry beyond the traditional limitations of scientific practices. The expansion included personal attributes and cultural beliefs in ethnographic practices. In this context, Adams, Jones, & Bochner (2011) define autoethnography as “an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)” (Ellis, Adams, & Bochner, 2011). Autoethnography is a precursor to duoethnography wherein the ‘duo’ replaces the ‘auto’.

Duoethnography has its origins in Norris & Sawyer’s (2004) pioneering work, *Null and Hidden Curricula of Sexual Orientation: A Dialogue on the Curreres of the Absent Presence and the Present Absence*. In this article, Norris & Sawyer juxtapose their own disparate points of view and thereby attempt to reconceptualize the context of the world they inhabit by narrating stories in order to change the curricula of the present and future. For Norris & Sawyer (2015), the purpose of duoethnography is “not the finding of essence but the exploration of how life histories of different individuals impact the meanings they give to



those experiences by employing multiple voices in dialogue”. The authors (2015) further state that “part of the meaning of duoethnography was the inquirers’ examination of difference as a means toward their reconceptualization of perception and meaning”. Therefore, the key to duoethnography is systematically analyzing (graphy) two different personal experiences (duo) in order to understand personal experiences in a cultural context (ethno). In another book, *Duoethnography (Understanding Qualitative Research)*, the same authors (2013) define duoethnography as “a collaborative research methodology in which two or more researchers engage in a dialogue on their disparate histories in a given phenomenon”.

Since then, many other works refer to the definitions described by Sawyer & Norris (2013). Snelson, Wertz, Onstott & Bader (2017) quotes Sawyer and Norris (2015) when describing duoethnography as how “two or more researchers work in tandem to dialogically critique and question the meanings they give to social issues and epistemological constructs”. A similar description is provided by Breault (2016) as he characterizes the term as “two participants [that] interrogate the cultural contexts of autobiographical experiences in order to gain insight into their current perspectives on and experience of issues related to personal and professional identities”. Here, Breault uses the term ‘two participants’ rather than ‘two researchers’; therefore, an implication could be drawn that duoethnography involves researchers, practitioners, users, or any other types of participants that are conducting it and hence, it is highly relevant to SPICE.

As seen in this section so far, most of the existing significant literature related to duoethnography either constitutes the work of the pioneers Sawyer & Norris or refers to them. The term itself was originally coined by the authors (2004) within the context of social justice as a reflection and a method to advance it. Sawyer & Norris (2004) considered duoethnography to be a very useful method to explore one’s own subjectivity, varied experiences and privileges. All of these attributes are grounded within a dialogic research methodology and this is carried out through an inquiry with the subjectivity of differing voices and identities as well as a pursuit of collaborative “coconstruction and deconstruction” of the topic of investigation (Sawyer & Norris, 2013). As a dialogic research method involving personal interpretations and experiences, these are mediated by individual and cultural meanings. In one of their works, Sawyer & Norris (2013) aptly mention that, “(a) dialogic context in duoethnography is a conversation—not only between people but also between people and their perceptions of cultural artifacts (such as photos)—that generates new meanings. In duoethnography, two or more researchers work in tandem to dialogically critique and question the meanings they give to social issues and epistemological constructs”.

This type of dialogic inquiry between two researchers puts forth a bigger question about the trust between them during the process. As noted by Breault (2016), the requirements for duoethnography are intimate since it involves personal backgrounds and experiences, hence the trust must be prerequisite. He goes on to state that “[w]ithout such trust, the disclosure and rigorous interrogation of personal stories would be unlikely”. The underlying ethical issues with duoethnography go beyond mere trust and according to Norris & Sawyer (2012), the duoethnographic accounts of each other must not be “reified, trivialized, vilified, or romanticized”. Therefore, there are certain challenges involved in duoethnography as a reflective process, but these can be mitigated through instilling trustworthiness and objectivity. Being a qualitative research methodology, duoethnography does not adhere to a set of defined rules but must anchored to foundational tenets of “effective research practice” (Breault, 2016). This may help in discerning the quality of duoethnography while maintaining the varied set of reasons and intended outcomes that the researchers seek while carrying out duoethnography.

#### 4.2.1 Relevance to SPICE

There are several areas within the design and development of SPICE systems that requires empathy and understanding via “stepping in the shoes” of museums’ end-user community members, visitors as well as citizens and autoethnographic accounts of their experiences. This process helps in comprehending specific upbringings as well as the targeted audience’s social and cultural backgrounds. Duoethnography conducted by two different participants could assist in the process of deeper understanding of a topic through a

personal, social, and cultural lens. As stated by Norris & Sawyer (2012), duoethnographers should recognize that “the frames they hold are inadequate and the Other can assist in a reconceptualization of self”. Therefore, if the process of duoethnography involves recognition and assistance of each other as participants, this method can help foster different perspectives and fill gaps in understanding.

#### 4.2.2 Practical Examples

##### *Duoethnography as Relational Whiteness Pedagogy: Human Orientation Toward Critical Cultural Labor*

Through their own lived experiences, Hummel & Toyosaki (2015) examined how duoethnography as a practice can be used for a critical examination of whiteness and whiteness studies. In their article, the authors define whiteness as “historical systemic structural race-based superiority” based on the definition of Wander, Martin & Nakayama (1999). Borrowing upon Norris & Sawyer’s (2012) notion of curreres, Hummel & Toyosaki (2015) engage in a difficult and complicated dialogue about their past experiences, ethnic, and cultural backgrounds and present circumstances in relation to privileges, power structures, and oppression. The authors (2015) identify several aspects of duoethnography that were beneficial to them to engage as a practice to “mount critical and relational whiteness research and pedagogy” and act as a “human(izing) orientation for critical cultural labor”. Some of these include:

1. A form of pedagogy for “teaching difference and cultures from a critical paradigm”.
  2. A recognition of partial and unfinished nature of humans and “honoring diversity and love” towards “achieving the human vocation of becoming more human”.
  3. A medium for autoethnographers to “investigate the complexity and particularity of culture through their vulnerability and honesty”.
  4. A tool for studying “culture with polysemic nuances and resist (simply) consensual and reductionist theorization of culture”.
  5. Providing “analytic and relational apparatuses for investigating our embodied repetitive markers that are informed by social and cultural structures”
- (Hummel & Toyosaki, 2015)

In this manner, the authors geared duoethnography to their own advantage by making use of some of its capabilities. Eventually, Hummel & Toyosaki (2015) states that “through sharing and implicating, we can begin to theorize and resist whiteness as whiteness continues its ubiquitous presence. It’s about sharing and resisting, a relational weaving as critical labor” (p.43). Similarly, Hummel & Toyosaki (2015) quotes Freire, “[t]he oppressed must not, in seeking to regain their humanity (which is a way to create it), become in turn oppressors of the oppressors, but rather of the humanity of both”. A key takeaway of this article is understanding the empathetic nature of duoethnography and examining the possibilities of its application in citizen curation (see: 2.1 above and D2.1 – Citizen Curation). This has to be carried out through an acknowledgement of power structures, vulnerability and intersectionality in backgrounds, upbringings, lived experiences, and culture. What would have been more beneficial from the article is a slightly more critical point of view of the methodology, such as a mention of limitations of duoethnography (if so) that the authors (Hummel & Toyosaki, 2015) encountered either as a subversion of their aims or whether aspects of it were insufficient for their examination.

##### *Using World of Warcraft to Teach Research Methods in Online Doctoral Education: A Student-Instructor Duoethnography*

In a trending era wherein the educational potential of games receiving increasing prominence, another interesting example of using duoethnography in an interactive gaming experience between a student and instructor was demonstrated by Snelson, Wertz, Onstott, & Bader (2017). In this study, the authors test a duoethnographic approach by using an online digital game environment of *World of Warcraft* as a field site to explore whether qualitative research methods can be practiced and developed using such a platform. They then specifically outline the purpose for their study as a means of expansion of “the knowledge base

of instructional practice for online research methods education through a collaborative experience involving research activities in World of Warcraft”.

Some of the reasons for choosing duoethnography were mentioned by the authors as:

- Examining the main question of the study through lived experiences and perspectives of the student and instructor.
  - Providing an equal voice for the student and instructor so that they are able to work together as co-investigators.
- (Snelson, Wertz, Onstott, & Bader, 2017)

Although these notions appear to be idealistic, the authors attempt to acknowledge some of the shortcomings, especially in relation to ethical issues and trust. One can easily notice that there is an hierarchy at play, the instructor is capable of making decisions that affects the student, such as with grades (Snelson, Wertz, Onstott, & Bader, 2017). Therefore, this study attempts to strategically mitigate these issues by mechanisms such as offering voluntary participation and the elimination of grades. These types of ethical issues require strong consideration within SPICE as well, whenever such workshops or duoethnographic research is conducted.

A very interesting aspect of this study was the interweaving of the qualitative methodology with the contents of the gameplay. In some cases, this type of fusion was possible while in others, the gameplay served as a parallel backdrop to the subject of discussion. An example of a fusion was when ethnographic design was explored as a methodology; here the participants were tasked to “discuss ethnographic design, and examine aspects of culture, norms, and learning in the game” through the creation of a character in it known as the “faction character (Night Elf, Alliance faction)”. In this manner, the topic of discussion related to the characters, narrative, gameplay and other aspects of the game. In contrast, an example of a parallel backdrop is when the participants had to navigate the game environment such as “a basic dungeon walkthrough together” and discuss the applications of activity theory, learning theory and other theories related to their research. However, in this case, it is most likely that the dungeon environment itself holds no relation to the theories being researched. Therefore, the environment in which duoethnography is conducted or the lack thereof plays a critical role in affecting it.

Another key point to note is the existence of biases or subjective lived experiences that affected the study. In their duoethnography (2017), the instructor was already familiar with the World of Warcraft environments, characters and gameplay, having played it for more than 4 years. The student on the other hand was exploring the potential of games for education and social learning. It could be assumed that this study would be more challenging if the participants were not familiar with World of Warcraft and online gaming.

Eventually, the authors highlight the merits and challenges of the study. The co-investigators emphasised that online interaction was beneficial. This was mentioned by the student as “a really neat way to interact with people. Even though it’s in a game it’s still very much interacting with other people”. These benefits highlight the strengths of online interaction rather than specifically duoethnography as a methodology, although it could be argued that duoethnography was a major component of the online interactions. Some of the challenges from this study that are of interest to us in SPICE include open ended structures for dialogic inquiry, a degree of unfamiliarity with the game, and how much attention was paid to the topic of the study rather than gameplay. The authors (Snelson, Wertz, Onstott, & Bader, 2017) acknowledge that further research is required in these areas. Moreover, the open-ended nature of duoethnography could be challenging in any context or topic being studied. Since the methodology involves participants expressing through the lens of their lived experiences and reflections, it is without a doubt challenging for facilitator(s) to structure the process and provide an appropriate context.

#### 4.2.3 Recommendations for SPICE

SPICE aims to tackle social cohesion by accommodating a diverse range of views for citizen curation (see: D2.1 – Citizen Curation). This is noticeable, for example, in the recommender system that attempts to provide alternative perspectives to a visitor or in case studies that are seeking to foster constructive dialogue tackling issues centred on the current societal situation. In these cases, duoethnography could be used by researchers working on certain SPICE systems in order to reflect on the creation and design of the systems as well as dialogically critique and question the meanings.

The stronger potential for duoethnography, however, is in the workshops and activities conducted by the Case Studies in their workshops and other activities with end-user communities, communities of interest, and communities of practice. For example, participants can be paired up, thereby allowing the researchers and/or mediators to interrogate the contexts of their autobiographical experiences in order to gain insight into the participants' current perspectives. However, ethical issues such as trust between duoethnographic participants and privacy concerns need to be addressed clearly before and during the workshops. As examined in the examples, there are structural challenges to this method of inquiry, such as open-ended dialogic process, trustworthiness, philosophical orientation of the participants, and context/environment wherein the process is conducted. Conductors of duoethnography should map out all the possible anticipated outcomes and be prepared for the process prior to its implementation

#### 4.3 Cultural Semiotics

Semiotics can be broadly referred to as, “the scientific study of sign systems” (Fatemi, 2014). More specifically, a number of fields in the domain of culture, sociology, arts, marketing and communication among others, have employed tools and methods from semiotics to study the phenomenon of meaning-making, as well as its extending impact on identity (Berger, 2011) and value formation (Oswald, 2015). However, regardless of the wide adoption of semiotic approaches and the emergence of semiotic subfields, such as social, cultural and cognitive semiotics, it is still considered an evolving discipline regarding its practical applications.

The theoretical underpinnings of all modern semiotics are largely based on the seminal work of two leading figures in semiotics, Ferdinand de Saussure (1857-1913) and Charles Sanders Peirce (1839-1914). While Saussure's dyadic model of the sign consists of the signifier and the signified, Peirce alternatively proposed a triadic model, consisting of an interpretant, representamen and an object (Yakin & Totu, 2014), differentiating between three sign subcategories, icons, indexes, or symbols, and having a more explicit focus on interpretation processes. These two models have served as the foundation for later semiotic approaches, and are often, either directly or indirectly, applied in the domains of museology, cultural heritage and tourism, for studying cultural heritage objects (Schrøder, 2006), exhibition design (Davallon, 2011), and visitor behaviour (Petr, 2002).

Whereas the study of general semiotics involves “the exchange of messages and the system of signs that lie beneath them,” (Allen, 2017) allowing us to understand and express signs' meanings, the field of cultural semiotics draws out the coextensive nature of culture and semiotics (Allen, 2017; Tamm, 2019). Thus, the aim of cultural semiotics is to expand the field of semiotics from a purely syntactic, or code-bound discipline, to a more dynamic approach for understanding the processes and practices of meaning-making in socio-cultural systems.

In SPICE, cultural semiotics is being considered as a method to enable reflection, and as an analytical framework providing innovative ways to analyse the processes and inner dynamics of citizen activities and contributions. As cultural semiotics introduces a dynamic perspective to meaning-making, it can subsequently also help to define a dynamic system for interpreting visitors' values and reflections in the context of SPICE. Such a dynamic model can eventually generate both ideas for activities for the users/participants, as well as analytic tools to inform the architecture and the semantic intelligence of the SPICE platform.

#### 4.3.1 The Semiosphere Model for Cultural Semiotics

A cultural semiotic model that we are considering as a potential conceptual tool in the frameworks of SPICE, originates from the work of the semiotician Juri Lotman (1990). On the premise that different semiotic systems (such as culture or natural language) rather than functioning in isolation, interact with each other, Lotman suggests that they actually form an interlinked system, or what he conceptualized as a *semiosphere* – *the semiotic space of culture and meaning-making*. Lotman's model of the semiosphere is based on a spatial metaphor, and was derived from Vladimir Vernadsky's (1926) concept of the 'biosphere' (Bankov, 2020). Thus, similarly to the biosphere in which life develops, and life processes transform, the semiosphere can be defined as "the semiotic space necessary for the existence and functioning of languages" (Lotman, 1990, p. 123; Nöth, 2015). In semiotics, language refers to a any kind of sign-system, thus outside of natural language we can for instance also talk about cultural languages or artistic languages, such as film, theatre, or visual language. Thus, an artwork would be the text of a particular artistic language. However, the semiosphere is not to be considered the mere total sum of all the languages and texts that populate it. Following Lotman, we can say that the semiosphere is "the result and the condition for the development of culture" (Lotman, 1990).

"Imagine a museum hall where exhibits from different periods are on displays, along with inscriptions in known and unknown languages, and instructions for decoding them; there are also the explanations composed by the museum staff, plans for tours and rules for the behaviour of the visitors. Imagine also tour-leaders and visitors in this hall, and imagine all this as a single mechanism (which in a certain sense it is). This is an image of the semiosphere" (Lotman, 1990)

Lotman's description of the semiosphere using a museum metaphor, allows us to visualize the semiosphere as a dynamic spatial model consisting of various semiotic systems, or *sub-semiospheres*, where the smallest functioning mechanism of semiosis is not any separate language, text, or cultural artefact put in a sort of sender-receiver relation, but the entire whole semiotic space of the culture in question, i.e., the semiosphere.

The concept can naturally be extended to a myriad of contexts, from museums, nationalities and language-bound social groups to online and 'offline' social networks.

#### 4.3.2 Diachronic and Synchronic Communication

This example proposes viewing the museum and the whole field of action of cultural heritage as a dynamic semiotic cultural system. Thus, in spite the fact that the semiosphere uses a spatial metaphor, it should also be considered as a temporal model, and therefore simultaneously a 'multichronic', and a 'multidimensional' space. This suggests that any 'subject' in a semiosphere is simultaneously involved in synchronic communication (the horizontal dimension of our interpersonal cultural communication, here and now), and in diachronic communication (the vertical dimension of our continuous contact to the past, mediated by culture) that together make up a network of complex relationships (Lotman, 1990; Lorusso, 2019). Lotman's diachronic semiotic system sees cultural history as a network of complex subjective relations between individuals and societies through the times. Seen from this perspective, cultural heritage is a continuous act of communication with peoples from *other* times and *other* cultures, and the assets of that heritage, are the vehicles for interpretations and re-interpretations (i.e., translations) of the meanings of those "*other* people". Through the use of languages (including artistic languages), media and material culture, we are in touch with the 'virtual facts' (since they don't exist anymore) and narratives from the past, and from many different cultural currents that have taken life throughout human history. It also simultaneously puts us in a synchronic dimension, implied by the active cultural process of the present where so many languages, cultural artefacts and currents mingle continuously in many dynamic layers of



the whole semiosphere. It is this continuous diachronic-synchronic interplay that determines the extension or the reach of a particular culture in a particular period (Bruni, 2011).

#### 4.3.3 The Semiosphere Boundary and Sub-Semiospheres

One of the most important functional, and structural aspects of the semiosphere is the notion of *boundary*. According to Lotman (1990; 2005), the boundary serves as the principal mechanism of semiotic individuation, separating the *internal* space from the *external* semiotic space.

In the context of culture, we can observe this boundary when viewing culture's dividing of the world as *us* ("one's own internal space") and *them* ("the external space"), but also through distinctions such as *living/dead*, *settled people/nomads*, *female/male*, and other cultural dichotomies of inclusion and exclusion.

As the boundary is the interface responsible for facilitating contact and communication with other semiotic spaces, we can consider it as a 'bilingual mechanism'. It is also there where through various translation processes and filtering, the *external* is transformed into *internal*, and whilst maintaining their individual characteristics, foreign texts become part of the semiosphere's internal semiotics. Thus, although the boundary inherently carries a separating function at the same time it also has a uniting function.

The entire space of the semiosphere is transacted by boundaries of different levels, for instance, boundaries of different languages, different traditions, different "mind-sets" and even boundaries of different texts. Furthermore, the internal space of each sub-semiosphere has its own semiotic identity, marked by its own boundary, and is realized in terms of its own language, text or group of texts in relation to a meta-structural space that provides its internal coherence. These sectional boundaries that run through the semiosphere create a multi-level dynamic system of overlapping sub-semiospheres (e.g., semiotic spaces that share values, beliefs, mind-set, origin, etc). The interactions between such sub-semiospheres can be seen as responsible for new layers of meanings, transformations of knowledge, translations and interpretations. Thus, semiosphere and sub-semiospheres boundaries are the most unpredictable and creative spots in the semiotic system (Lotman, 1990; Lotman, 2005; Bruni, 2015).

#### 4.3.4 Asymmetry and Heterogeneity

Lastly, as additionally illustrated by Lotman's museum example, the semiosphere is marked by its heterogeneity, its diversity of different elements and their functions.

The immense variety of languages (in its broader sense) that populate the semiotic space are in relation to each other in a continuum that goes from complete mutual translatability to total untranslatability. At any cultural moment there is contact with "texts", or artefacts, coming from cultures that were previously out of the *boundaries* of a given semiosphere. These "invasions" or imports from other times and/or cultures – sometimes by separate texts and sometimes by entire cultural layers – differentially affect the internal structure of the "world picture" of the culture, or the new context, in which the artefact is being received and interpreted. Therefore, according to Lotman (1990), in any transversal synchronic cut of the semiosphere, different (cultural) languages at different stages of development can be found in relation or in conflict. Some texts or artefacts can be immersed in languages that are not their own, while the codes to decipher them may be partially or totally absent.

From this, Lotman derives another structural characteristic of the semiosphere: its asymmetry. The semiosphere's asymmetry is determined by the many currents of internal translations with which the entire density of the semiosphere is permeated. According to him, *translation* is the principal mechanism of consciousness. To express something in a different language, or to remediate it, is a way of understanding it. Given that in the great majority of the cases the different languages (in the broader sense) in the semiosphere do not have perfect semantic correspondence (i.e., they are semiotically asymmetric), one can consider the cultural process in the semiosphere as a generator of new information. For example, the different degrees of iconism in artworks produce heterogeneous interpretations without mutual complete semantic translatability, accessible only through conventional correspondence.

In the context of SPICE, such semiotic asymmetry with differential degrees of translatability, correspond to the different perspectives elicited in citizens from their interpretations of cultural artefacts in relation to particular issues, in specific contexts, delineated by the case studies.

This heterogeneity in the context of culture dynamics can be viewed as the mingling of the multifarious cultural aspects of religion, ethnicity, language, and so on. However, an important aspect in Lotman's theory, separating it from other communication models, is culture's natural ability for self-description, a process of autocommunication (Torop, 2008). Just like an author, or an artist through his or her creation is essentially communicating with himself whilst communicating with the public, this type of process also occurs when viewing culture as a "collective creator" (Torop, 2008). This can also be seen as a form of 'metacommunication' or cultural reflection with the primary function of 'reducing' heterogeneity when excess of diversity may be a threat, as finding this balance could also be considered an advance stage of a semiotic's system's structural organization.

#### 4.3.5 The Digital Semiosphere

The expansion of the technosphere that has given rise to digital culture, now marks a new kind of cultural complexity determined by digital platforms and communication technologies. While having offered new ways for experiencing, participating and engaging in cultural processes, the resulting changes and its various impacts, continue to offer unforeseeable challenges and shifts in global cultural dynamics.

Digital culture represents a type of a semiosphere that involves the process of digitalization. This process is also what determines its inherent structural boundaries, thus, what is not included *inside* the semiotic system will ultimately remain *outside*, i.e. outside the cultural boundaries. Thus, although the digital semiosphere should not be considered *separate* from 'the' semiosphere (all human culture), we can still say it introduces new kinds of complexities (Bruni, 2015; Hartley, Ibrus, & Ojamaa, 2021). According to Jandric and Peters (2018), the digital semiosphere is characterized by its numerous boundaries, it is "textual and non-textual, visual and non-visual, clear and unclear, familiar and uncanny; human-made and machine-made; natural and cultural". Viewing the digital semiosphere, and the complexity of its sub-semiosphere's dynamic processes – i.e., inherent transformations, translations and interpretations – we can further explore its different stages of development and changing dynamics.

This cognitive expansion inherent to the digital semiosphere and enabled by the technosphere, is characterized by the multichronicity of the process. This means that a subject participating in such cultural space can now reach much larger extensions of the semiosphere, both synchronically and diachronically as, "the hyper-availability of texts and cultural representations of all kinds in real time expands the geography of human knowledge and cultural production as never before – not only because of ease of access but also because of accumulated quantity" (Bruni, 2015). This expansion, however, also introduces new challenges and issues, which without careful consideration can in fact result in undermining diversity and inclusion. For example, one of the possible consequences of these accelerated semiotic processes, is the 'digital divide' where entire cultural layers may be excluded from the semiotic space due to inaccessibility (Bruni, 2015).

#### 4.3.6 The Digital Semiosphere in SPICE

In the context of this project, it is useful to be able to model the cultural process that is enabled by the SPICE digital platform (its technosphere) in terms of the challenges that such "virtual" semiotic and cultural space bring into play. These potential challenges include addressing two primary considerations in SPICE: (1) the digital divide (a matter of inclusion/exclusion) and (2) the asymmetric and unequally distributed power dynamics involving the algorithms and platforms that condition and constrain digital culture in particular directions:

(1) When addressing the first aspect of the digital divide, we highlight that only the cultural artifacts that are digitized become part of the digital semiosphere, and the ones not digitized, will ultimately be left out

of the system. In the context of SPICE, this digitization process primarily involves two ways in which cultural artifacts ‘enter’ the semiosphere. There are the ‘officially’ digitized artifacts by the institutions, e.g., selection of digitized paintings) and the ‘non-officially’ digitized artifacts, where the digitization process is carried out by the visitors or users (e.g., visitors taking and sharing photos of the object, i.e., citizen digitization, or including it in descriptions and stories after the in-situ visit, etc.) However, as a vast majority of cultural heritage artifacts are neither digitized nor physically exhibited, the concern is less about the artifacts ‘in’, but rather about the artifacts ‘out’ of the digital semiosphere. Consequently, instead of serving as objects for interpretation and used for sharing of different perspectives, these histories and stories of non-digitized artifacts instead become a privilege for a handful of experts. This fact subsequently highlights the importance for museums and heritage institutions making the rich heritage inventories under their custody known and accessible, so they become a part of the digital semiosphere, even when such cultural resources are not part of permanent exhibitions.

Secondly, it is important to consider that while some users of the platform will be ‘digital natives’, then it should be equally inviting, user-friendly and inclusive for users less well-versed in digital media and technology. Digital literacy should not serve as a prerequisite for using the SPICE platform. Moreover, another potential threat regarding the digital divide is accessibility. As not all users will have the same type of access to technology and internet connection, or might come from different economic conditions, this has to be taken into account when designing the different features of the interfaces for the platform (see: D5.1).

(2) As a large part of the development of the SPICE platform consists of enabling different algorithms to take part in the analysis of the data and recommendations for the users, it is important to address the ‘normative’ aspects of these algorithms in the system. Moreover, as it is highlighted in the original SPICE proposal, the issues relating to various algorithms pursued by current social media conglomerates not only have the ability to reinforce poor decision-making and cultural narrowing, but actually they may “reinforce social fragmentation, stereotyping and exclusion, and [may be] implicated in the rise of societal problems such as nationalism and polarisation.” Therefore, it is in the interest of SPICE to consider new approaches regarding the analysis and criteria of visitor interpretations and mined values by implementing novel ways of clustering and delimiting the emerging sub-semiospheres in such semiotic cultural space. If we can define “non-categorical” criteria for the clustering of the multifarious cultural contributions, we can eventually propel a system that gives space to overlapping values and belief-systems that take the emphasis away from dichotomic inclusion/exclusion dynamics making the semiosphere’s borders more permeable, dynamic and creative (see: Table 2).

Social media’s uses of recommendation	Proposed uses of recommendation in SPICE
<i>Hidden models</i> to drive content consumption	<i>Scrutable models</i> to promote reflection about content
Calculate <i>differences between groups</i> of people to differentially target content	Show <i>differences within groups</i> to tackle preconceptions of homogeneity
Calculate <i>similarity between content items</i> to provide more of the same to consumers	Show <i>similarity between groups</i> to tackle preconceptions of heterogeneity
Calculate <i>content popularity</i> to give people what they want	Promote <i>variety and serendipity</i> to challenge preferences

Table 2: Different uses of recommendations.  
Social media platforms vs. Proposed uses envisioned in SPICE (Table originates from GA).

#### 4.3.6. Heterarchical value systems

Central to the determination of first-person reflective identities, such as *cultural narrative identity* (see: 4.1.2 above), are its cultural “markers” - including values. As values can in many ways be considered a



central defining element of identity, they are also often used to “measure” culture, or suggest various value-based categorizations and classification systems (Straub, Loch, Evaristo, Karahanna, & Srite, 2002; Hampden-Turner & Trompenaars, 1994; Schwartz, 2011; Schwartz, An Overview of the Schwartz Theory of Basic Values, 2012; Hofstede & Hofstede, 1984).

While a number of these systems can be considered as useful and functional methodologies for various purposes, they also often function on an “either/or” categorical basis, which may produce a rigid or static consideration of value sets and systems, approaching the individual as a coherent whole subject, belonging to a fix collection of such various cultural identifiers (Bruni, in press). The majority of these rigid (and often static) categorizations allow for values to be ranked in hierarchical orders. In other words, prioritizing values entails a process of hierarchization. For example, a collectivity participating in themes such as “political correctness”, “sustainability”, “free market”, “economic growth” “full employment” and “climate change” will have to relate to concrete examples of events from current social and cultural processes and arrange them in some order, and normatively evaluate these arrangements (Somers, 1994).

When there are subjectively competing or contradicting themes in the “plot”, values may not conform to the transitivity property (see below) and therefore may lead to paradoxical or unintelligible relations (Bruni, in press). As stated above on social cohesion (see: 2.0 above), the role of shared values may become ambiguous if “homogeneity” becomes a fixed goal. Instead of rigid value “containers”, one could promote the healthy co-existence and interrelation of “overlapping value systems”. When applying values as instruments for “deciphering” and categorizing individuals, or groups of individuals, as “coherent wholes”, the emerging paradoxes, contradictions and conflicting aspects may become evident. We can observe this in various scenarios and contexts in contemporary society. For example, this is particularly apparent in emerging transnational politics in the west, where the more traditional binary oppositions (e.g., liberal-socialist, left-right) are now becoming “blurred by a plethora of overlapping values,” and through this process are providing ample ground for new identities and alliances. These new identities and “hybrid alliances”, in turn, may also introduce new conflicts and paradoxes (Bruni, in press).

Therefore, instead of rigid hierarchical principles for ranking values and establishing categories, we suggest to consider the continuous negotiation between overlapping values and beliefs, implying a heterarchical organization. The notion of heterarchy was first introduced in science by Warren McCulloch (1945). However, rather than being in opposition to a hierarchical organizational system, a heterarchy should instead be viewed in complementarity with the former. In fact, in a heterarchy there can be relations of complementarity and subordination between categories of different logical levels, giving place to a more network-like nature of organization than a strict relation of vertical subordination, where horizontal relations between different levels of organization and categories are as important (Bruni & Giorgi, 2015). While hierarchies are found in both physical and living systems, according to Bruni and Giorgi (2015), heterarchies exist exclusively in the living world, where different degrees of subjectivity are manifested (contrary to the physical world of pure forces and impacts). In other words, physical processes do not deal with options or choices. Only subjective systems (i.e., living organisms) that perceive differences can act upon response-repertoires that involve two or more potential options. Having choices introduces value-subjectivity. Whenever there is a subjective entity (individual or collective) with capacity for choices (agency), there is the possibility of a value anomaly between the options of the repertoire. This results from the fact that if the options are not ranked hierarchically, the transitivity law is invalid. For example, in a hierarchical system or scale the transitivity law would take the form of: “if A is preferred to B and B to C that means that A is preferred to C” (as for example in a physical value scale: “A is taller than B, and B is taller than C, A will *always* result to be taller than C,”). If this transitivity logic is applied to a system expressing subjective values, this type of ranking can become problematic (Bruni & Giorgi, 2015; Bruni, in press). In the context of human subjective values (a heterarchical system), we should therefore consider the emergence of paradoxes and ‘value anomalies’ that can emerge between the options afforded by the system. According to McCulloch (1945), a “value anomaly” (or “diallel”) refers to different types of contradictions, and can be viewed in parallel with notions such as paradox, double bind, cognitive dissonance, and semantic incongruence (Bruni & Giorgi, 2015; Bruni, in press). Thus, in the context of

cultural values we can consider heterarchies as “complex adaptive systems that interweave a multiplicity of organizing principles, becoming “the sites” of competing and coexisting value systems, which allow multiple regimes of worth (Stark, 2001)” (Bruni, in press).

A relational database, where existing relationships do not only involve one-to-one or one-to-many, but may also feature more complex many-to-many relationships, would require a network-like model equipped with the ability to exclude certain types of transitive dependencies, as it would otherwise simply run into paradoxical loops or value anomalies, which threaten the “referential integrity” of the system. In the context of cultural narrative identity, this referential integrity can be viewed as a “coherent and meaningful narrative.” A paradox of conflicting values may involve problems with self-referentiality, and therefore with identity, which can only be dealt by identifying a meta-narrative that allows inclusion into a larger or overlapping gestalt (outside of the paradoxical situation) in which the subject can alternate between seemingly different standpoints (Bruni, in press). Mapping cultural narrative identity (see: 4.1.2 above) in the semiosphere system, and adopting a dynamic processual heterarchical perspective, we can model it as spanning through, “a web of emerging intertwined spheres and domains, encompassing inseparably the individual, the social and the cultural; in domains that go from private to public, from family to work, from local to national to regional to global, touching the many nuances of interest groups and stakeholders co-existing heterarchically in a globalized civil society” (Bruni, in press).

In SPICE, this becomes one of the objectives for the integration of WP2, WP3 and WP6, where the dynamic aspects of the SPICE ontologies, recommender systems, content analysis, ontological reasoning, exploration and sense-making, are being defined and implemented. If we rigidly place individuals or communities in fixed categories based on common interests or values, our analysis may become blurred. It is therefore important to consider the processual relationships and life-episodes implied in the narrative identity approach (see: 4.1 above). Different values from apparently mutually exclusive loci at different hierarchical levels can be grouped or can overlap under one narrative identity in a particular time-space and context – facilitating the kind of safe cultural space for meaning-making that SPICE aspires (i.e., a safe semiosphere for exploring one's own paradoxes and contradictions).

Thus, an analytical approach adopting a heterarchical organization can promote a multi-layered processual and relational dynamics where the emerging cultural narrative identities can overlap to give place to complex *heterarchical systems of belonging* that may relate to the different domains that define “social cohesion”. In this direction, we would like to encourage individual users and cultural collectives to identify themselves and adhere to emerging narratives that may inform their actions while they attempt to conciliate, understand and process cultural contradictions and dissonances.

#### 4.3.7 Practical examples

The following section holds examples of cultural semiotics applied in the domain of cultural heritage and interactive media experiences.

##### *Education on Screen*

One of the more recent projects involving cultural semiotics in the domain of digital heritage culture, is an innovative digital learning project called ‘Education on Screen’ (Transmedia Research Group (TRG), 2017). The project focuses on supporting literary education through integrating metatexts in various media and encouraging students to delve into cultural heritage whilst providing a more extensive understanding of semiotic processes in culture (Milyakina, 2020). As the cultural semiotic framework applied in the project already suggests, the platform naturally adopts a more spatial rather than linear logic. ‘Education on Screen’ was developed by the Transmedia research group at the Department of Semiotics at the University of Tartu, in which the broader aim is to provide a better understanding of the complex mediation processes of contemporary culture in different media and discourses (Transmedia Research Group (TRG), 2017).

The project consists of different thematically categorized digital learning platforms (e.g., History, Nature,

Identity) that are primarily content- rather than interaction-based, and have been tested on over 400 students, participants and teachers in Estonia. Each platform allows the user to explore different theme-related texts, juxtapose interrelated texts and analyse them in different discourses and media with the aim of helping students better understand the intertextuality of cultural heritage (Milyakina, 2020). By synthesizing ‘old’ (e.g books) and ‘new’ media (e.g Youtube materials, SoMe posts), the platform also aims to support students’ understanding of cultural autocommunication processes. Additionally, the platform aims to provide “a shared space for facilitating a dialogue between different cultures ... a foreign culture becomes more understandable when juxtaposed with similar phenomena in one’s own culture” (Milyakina, 2020).

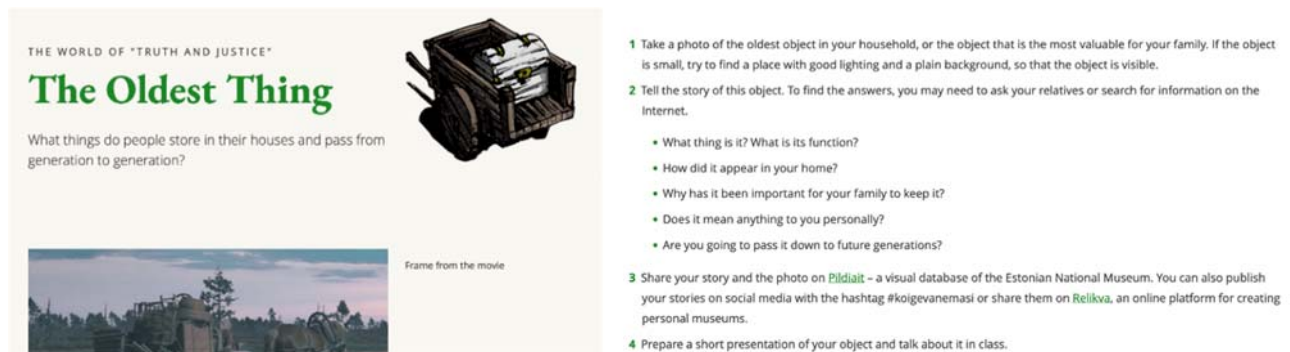


Fig. 4: Two screenshots from the learning platform of ‘Education on Screen’.  
Introducing one of the platform themes (L). A transmedia task based on the previous theme (R)

“Education on Screen” can offer inspiration to the SPICE platform in terms of involving various metatexts and different media in introducing and presenting cultural artifacts, as well as support in developing ideas for employing transmedia storytelling techniques in SPICE. Moreover, it can also help illuminate important considerations for the younger audiences and users. Similar to how it was approached in “Education on Screen,” it is essential to consider the *digital habits* and learning styles of younger audiences, for instance, not all younger users will want to participate in activities involving reading or writing longer texts. Following the ideas presented in the aforementioned project, this could potentially be tackled by involving different modalities in storytelling activities, helping to balance the cognitive load.

### *A Cultural Semiotic Aesthetic Approach for a Virtual Heritage Project*

The Virtual Heritage project by Voutounos and Lanitis (2016; 2018) involves the design and evaluation of a virtual museum of Byzantine art applying a cultural semiotic approach. The authors of the project describe their main objective as to enhance the meaning of virtual artifacts and to “adopt a semiotics-based approach for the design of a virtual museum of Byzantine art suitable to convey the meaning and value of its artifacts to the future user within the scopes of the field of virtual heritage (VH).” (Voutounos & Lanitis, 2016).

Based on Peirce's, Morris’ and Lotman’s semiotic theories, the virtual museum project developed a semiotic model ‘*Case Study Semiosphere*’, which attempts to contribute to the design and evaluation research in the field of Virtual Heritage (VH). Their case study semiosphere model, also taking inspiration from Peirce’s sign theory and his categorical approach (Firstness, Secondness, and Thirdness), establishes three sign systems of interest, consisting of various semiotic entities:

- 1) artifacts (cultural objects, artistic texts)
- 2) technologies (virtual technologies)
- 3) minds of participants (interpreters, evaluators).

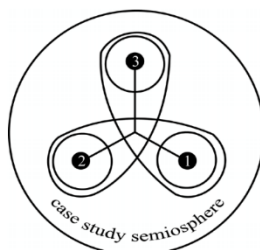


Figure 1. The Case study semiosphere

Table 1. Case study semiosphere—typology of signs and terminologies.

	Categories	Types of values	Sign in relation to itself / Dimension of Value	Sign in relation to Object / Dimension of Signifying	Sign in relation to Interpretant / Dimension of Action
Case study semiosphere	Firstness 1	Conceived values	Qualisign / Detachment (1)	Icon / Designative (4)	Rheme / Perceptual (7)
	Secondness 2	Object values	Sinsign / Dominance (2)	Index / Prescriptive (5)	Dicisign / Manipulatory (8)
	Thirdness 3	Operative values	Legisign / Dependence (3)	Symbol / Appraisive (6)	Argument / Consummatory (9)

Fig. 5: The 'Case Study' Semiosphere from the Virtual Heritage Project  
(Voutounos & Lanitis, 2018)

In the context of their project, these semiotic systems were viewed together as forming a communicative environment, a semiosphere, which allowed for analyzing the dynamic processes of the semiosphere as a systematic whole (see: 4.3.1 above). Based on this theoretical framework, the authors designed an experiment examining how visitors would react and experience Byzantine art in the virtual museum. The results from the experimental exploratory evaluation surveys were then semiotically analyzed to establish guidelines for “enhancing user experience relating to the meanings and values of the artifacts displayed” (Voutounos & Lanitis, 2018).

#### 4.3.8 Recommendations for SPICE

As mentioned above, in the context of SPICE, cultural semiotics and Lotman’s model of the semiosphere serve as a tool for modelling the dynamic processes of citizen curation that that we envision in SPICE’s interpretation-reflection loop. In particular, it may aid our modelling, clustering and visualizing of citizens interpretations, stories, values, sentiments, perspectives and reflections in the context of SPICE. The use of cultural semiotics in the IRL model not only should generate ideas for activities for the users/participants, and analytic tools to inform the architecture and the semantic intelligence of the SPICE platform, but also should help to connect these elements in a meaningful whole.

In this direction the following are some examples of the applications we are envisioning at different stages of the IRL (see: 3.0 above).

#### Analysis of user contributions

Firstly, we can apply Lotman’s ideas on translation and metacommunication in the analysis and evaluation of visitor interpretations (contributions). Considering the interpretation of a cultural artifact(s) as a type of a translation process, we can suggest that visitors, or users interpreting some cultural artifact or a collection involves ‘filtering’ of what comes from ‘outside’, and internalizing it by translating it into one’s own ‘language’. Considering the original artworks made available in the SPICE system as source texts (proto texts), and the visitor contributions based on these specific artworks as secondary (meta) texts, we can subsequently establish these two (or more) elements as making up a textual system and forming a type of a communicative environment. This systematic approach allows us to then, for instance, establish how ‘active’ the *dialogue* is between the source text and meta texts in its surrounding culture, as well as analyse the emerging dialogue in terms of its ability to generate new meanings through the translation process.

### *Intertextuality of cultural heritage*

As the central object in cultural semiotics is the correlation of different sign systems in culture, it is particularly pertinent when attempting to provide the visitors and users a better understanding on how cultural heritage is maintained and continuously transformed (also through new interpretations and contexts). It can also help visitors view themselves as cultural agents taking part in this process, and thus provide tools for revealing and better understanding the inherent intertextuality of cultural heritage. This can, for instance, involve demonstrating in a more engaging manner how a specific cultural artifact's meaning has changed throughout time, how it relates to the current culture and so on, by integrating metatexts in various media (e.g., a YouTube link to a movie/clip in which a specific artifact was featured), or relating citizens interpretations from different cultural layers, origins and interests into a system of cross-referentiality.

## 5.0 Workshops

(Disclaimer: This section also appears in D2.1)

As the restrictions and uncertainties presented by the COVID-19 pandemic have limited us from the possibilities of organizing workshops directly with the stakeholders, we have instead been organizing workshop-pilots internally within SPICE. We will continue with this strategy until the situation allows for *in situ* workshops. However, as a contingent solution, we are designing the next workshop for real stakeholders in an online modality with the five case-studies.

### *Ethical considerations*

The normal procedure for workshops or experiments conducted by AAU is to inform the participants through a "Participant Information Sheet" that AAU will not collect any data that can potentially reveal the identity of the participants, such as name, address, ID, e-mail or telephone number (see: D9.6). Such procedure will be standard for workshops or experimentation conducted by WP2 on stakeholders and citizens.

However, in the internal workshops conducted by WP2 during this first year of SPICE, this procedure was not formally followed, as these workshops were conducted internally within the SPICE consortium, with the partners directly affiliated with the development of the project. The participants were therefore well acquainted with the kind of anonymity policies followed by SPICE, and their input was voluntary under these assumptions. As such, the data collected in these two internal workshops are regarded as classified within the SPICE consortium and is not intended for external use or publication outside of SPICE. Measures were taken though in the formulation of questions and the structure of questionnaires and activities, to avoid any direct references to each participant.

### 5.1 Workshop #1 (at mini-conference #1)

An internal mini-conference was held on the 29th of October 2020 (see: D7.3). During this mini-conference WP2 conducted a workshop in which a permutation of interpretation and reflection methods was tested.

Combining *artifact analysis*, *narrative inquiry* and *narrative identity*, it was an exemplary combination of methods that could be implemented in the interpretation-reflection loop (see: 3.0 above). This approach was tested with all the five case studies in SPICE in an attempt to identify both cultural and individual markers for narrative identity analysis from the participants' stories.

By examining the participants' perception of themselves and how they 'came to be the person they are' (see: 4.1 above), it was expected that the differences (as well as similarities) between the participants could be illuminated. The desired output was to obtain a better understanding of the participants' narrative identity, which in turn could be used to inform the categorization and recommendations of the SPICE users and the content. Thus, we were interested in exploring a format through which the participants would be motivated to share individual (and potentially personal) stories.



### *Structure of workshop*

The structure of the workshop was as follows (see: appendix A below):

- Part 0: Intro and Demographics questionnaire (Simple)
- Part 1: Artifact analysis
- Part 2: Storytelling
  - a. Storifying childhood
  - b. Storifying adolescence
- A. Part 3: Narrative inquiry
  - c. Story-circle

### *Workshop tasks*

Firstly, all participants were provided with an identical questionnaire (albeit the artifacts presented varied), with questions specifically derived from artifact analysis (e.g. materials, age / time-period, condition, functionality, emotions elicited). The idea was to allow the citizens full freedom in the interpretation of the artifact, whilst aiding their cognitive process by asking questions that could promote the interpretive activity specific to their artifact. The questions were based on our previous description of artifact analysis from the viewpoint of Hanington & Martin (2012).

“Communication research has long recognized storytelling as important in the construction of identities, relationships and communities (Polkinghorne, 1988, McEwan & Egan, 1995, Hull, 2006)” (Jamissen & Skou, 2010)

After this task, the participants engaged in a storytelling task. The participants were asked to make up a short story about their experience with their presented artifact. However, in that story, they were to assume the role of themselves as a child (the specific age was left open for the participants to freely choose). They were then asked to prepare telling that story to a close loved one (e.g., grandmother). It was highlighted to the participants that their story should reflect an account that they believed would have been elicited by the artifact at that specific time of their life (childhood). It was also clarified that it could be both, a fantasy, or a description based on real events.

During the second iteration of the activity, the participants were provided with more information on the artifact. This information included textual descriptions of the artifact, which was provided by the museum curators. After having received this additional information, the participants were asked to create yet another story. Again, taking on the role of themselves, but this time as being in their late adolescence, i.e., the last part of their teenage years. This time, the participants were asked to create this short story (as being a teenager) to flirt, impress or make friendly conversation with someone they really like. The idea with iterating these two different life points (childhood and adolescence) was to obtain information that could somehow represent a developmental trajectory in the narrative identity of the storyteller, at two different moments of hindsight.

After creating these two stories, the participants were gathered in a “story-circle” (see: D2.1 – Interactive Storytelling and Narrative Methods) and asked to select and share one of their stories. It was thought that by doing this, we could potentially be able to say something about the person based on the chosen story, but also on the disregarded story.



*Fig. 6: Artifacts presented to participants in workshop testing of permutation 01. Each artifact was individually assigned for each group in the workshop. From the top left: Antti Nurmesniemi: Coffeepot Pehtoori, Carla Accardi: Arciere su bianco (Painting), Roman Legion (Sculpture), Les Levine: Deery Family of 13 (Catholic) (Photograph), Megatherium Americanum (Fossil).*

### 5.1.1 Results / Discussion

The reason for exploring a narrative from the focal point of the participant as a child and as an adolescence respectively was based on that “[s]hared family narratives take on an increasingly important meaning in adolescence, when a primary developmental concern becomes the exploration of identity (Erikson, 1968) through narrative meaning-making” (Fivush & Merrill, 2016).

By making the participants fashion a story with themselves as the main character – and specifically a past version of themselves – with the addressee being a person close to them, it was expected that the participants would engage in personal hindsight prior to, and possibly during, their creation of the story. As the activity was a creative one, as opposed to purely factual, the intention was to create an open and “safe” space in which the participants would feel free to tell the story of their choosing. We did not insist them to share in detail a specific and personal memory, but rather allowed the participants *full freedom* to decide if their fashioned story would reflect a personal recollection or if they wanted to share it in the form of a fantasy. Allowing for such freedom, was not expected to necessarily mitigate the relevance of the output in relation to narrative identity, since “[..] narrative identity is not memory; it is the story told about memory” (McAdams, 2018). Even if said memory is not described specifically in the story procured, we argue that since the participants were asked to create a story that they could have elicited at that time of their life, they would naturally implement their perception in the present of their memory of this past, i.e., their “reconstructed past” (McAdams & McLean, 2013). Departing from the concept of narrative identity, this approach was believed to reveal pertinent information about potential markers of the participants’ assumed identity. Additionally, it was noted from the collected stories that a number of the participants’ stories actually included details that suggested a more personal rather than fictional approach to the task.

Narrative identity is considered to be a complete story of a person. As McAdams (2018) has described, it is “[..] a special kind of story—a story about how I came to be the person I am becoming”. Similarly, “[t]hrough narrative identity, people convey to themselves and to others who they are now, how they came to be, and where they think their lives may be going in the future” (McAdams & McLean, 2013). Following this understanding of narrative identity, it has been argued, that narrative identity is empirically a difficult construct, and that “[..] a person’s narrative identity will never be exhaustively expressed by any

single story (Lucius-Hoene & Deppermann, 2000). The question thus arises, how might we expect to gain insight into the totality of a person's narrative identity based on a single, or even a few, stories, as is done in the current approach?

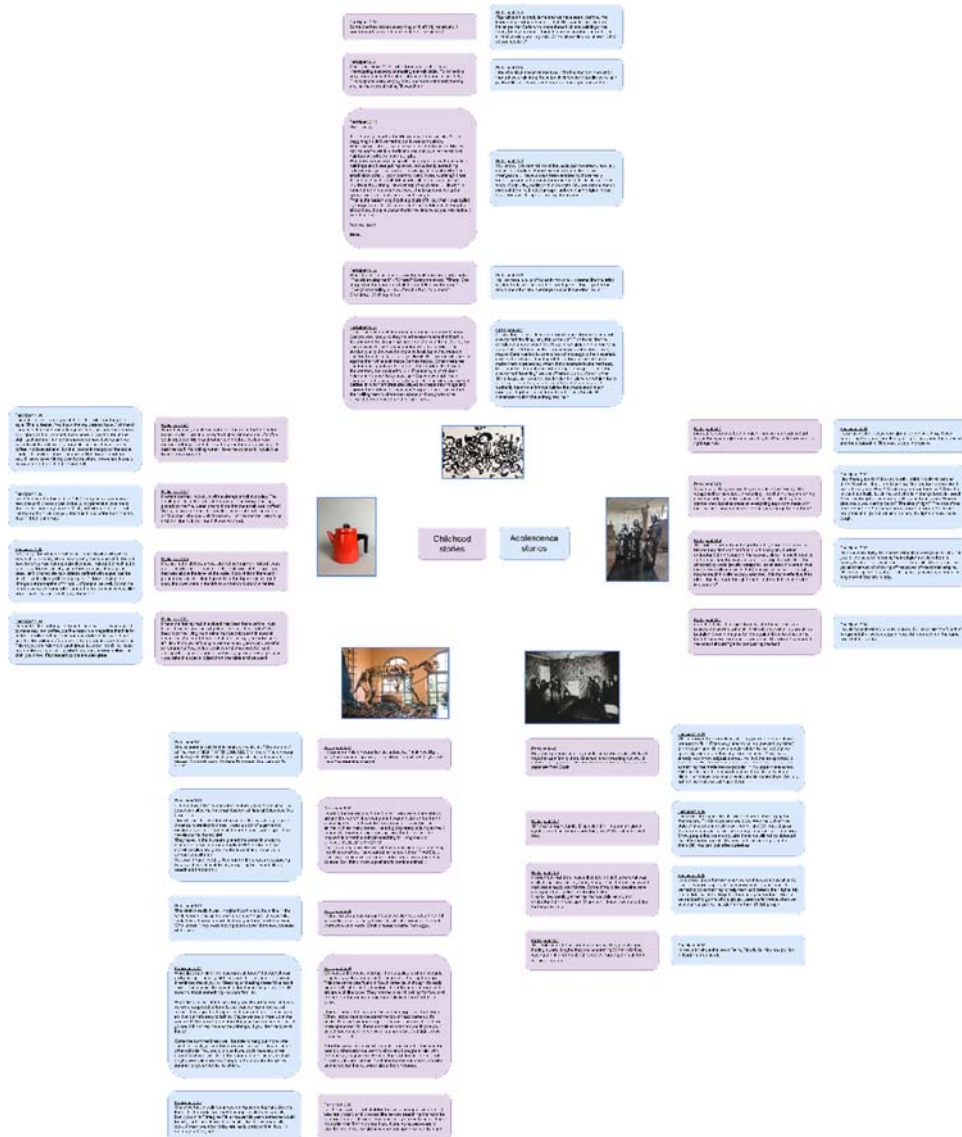


Fig. 7: Mindmap of the stories elicited at Workshop #1

Additionally, it has been argued that narrative identity might not be construed as a single entity within a person, “[s]ince every story is inevitably characterized by selectivity, situational pragmatic objectives of the teller, audience-design, etc. [...]” (Lucius-Hoene & Deppermann, 2000). This follows the description of McAdams (2011), who regards narrative identity as a “selective reconstruction of the autobiographical past”. Hence, it seems natural that this selection differs in time, as our recollection of the past is always influenced by our knowledge in the present (Kvernbekk, 2013; Landa, 2000), but it seems likewise plausible to conclude that this selection is socially and culturally informed, as people construct different stories about who they are, and how they came to be, dependent on the given time, situation, social context and audience (Lucius-Hoene & Deppermann, 2000).

If we consider narrative identity as an integrative concept however, like McAdams himself along with Ricoeur and others (McAdams, 2011; McAdams & McLean, 2013; Adler & Clark, 2019; Ezzy, 1998; Ricoeur, 1984), we argue that even a single snapshot reflection of a person's identity, as is the case in this approach,



is still a piece in the on-going process of constructing ones narrative identity as a whole, and consequently a partly reflection of the whole.

### 5.1.2 Further Analysis

The data from the workshop, in the form of the participants' stories, is currently being analysed by WP2 and WP3. In the ongoing analysis, WP2 is using a qualitative narrative identity analysis approach involving affective themes, as presented by Jonathan Adler & colleagues (2016; 2017) (see: 4.1.5 above). WP3 is using the data from the workshop as prototypic data for the semantic annotator service currently under development. For this, the data is used to test the ability of the service to semantically enrich user-generated textual contents through sentiment analysis and emotion detection (see: D3.2).

User_1.1_child.xls	rdfs:label	@id	@type
User_1.1_child.xls			
User_1.1_child.xls	love	ex:anno_4_emotion_282-286_love	emotion:Love
User_1.1_child.xls	like	ex:anno_5_emotion_309-313_like	emotion:Like
User_1.1_child.xls	red	ex:anno_6_emotion_331-334_anger	emotion:Anger
User_1.1_child.xls	told	ex:anno_7_emotion_156-160_trust	emotion:Trust
User_1.1_child.xls	smell	ex:anno_8_emotion_109-114_anger	emotion:Anger
User_1.1_child.xls	smell	ex:anno_9_emotion_109-114_disgust	emotion:Disgust
User_1.1_child.xls	afraid	ex:anno_10_emotion_28-34_fear	emotion:Fear
User_1.1_child.xls	like	marl:Positive	
User_1.1_child.xls	love	marl:Positive	
User_1.1_child.xls	red	marl:Negative	
User_1.1_child.xls	told	marl:Positive	
User_1.1_child.xls	smell	marl:Negative	
User_1.1_child.xls	smoothed	marl:Positive	
User_1.1_child.xls	very small	marl:Negative	
User_1.1_child.xls	afraid	marl:Negative	
User_1.1_child.xls	coffee maker	dbr:Coffeemaker	
User_1.1_child.xls	coffee	dbr:Coffee	
User_1.1_child.xls	coffee	dbr:Coffee	
User_1.1_child.xls	coffee pot	dbr:Coffeemaker	

*Fig. 8: Semantic Annotator Data Example.*

*Example of the data extracted from the stories by the semantic annotator*

In WP2, incorporating the aforementioned affective themes for narrative identity analysis, we have initially looked at the data using narrative measures of "Contamination/Redemption". This type of analysis helps us establish the emotional shift in the tone of the participants' narratives, moving either from positive to negative, or on the contrary, from negative to positive.

The initial narrative analysis of the data using affective themes has so far demonstrated that not all collected narratives contain, what could be classified as an emotional shift, or indicating to either contamination or redemption. However, it does occur frequently enough to suggest further exploration of this approach.

Moreover, using the semantic annotator system for affective story analysis would still require further investigation. This would entail looking further into whether the connotations suggested by the semantic annotator reflect the "mood" of the story. I.e., the accuracy of the prediction of the system.

		Is it a narrative?			Keywords		Story transition?	General mood
		More than one event	Are there changes	At least one character	Explicit	Implicit		
Participant X								
	When I was very small I was afraid of the noise that the coffee maker made. Then it all smoothed up when the smell of coffee got in my nose. My grandmother told me that this is a very modern coffee pot and she used to grind the coffee beans and cast the stuff into boiling water. I love the color and I would like to paint my room red.				small, grandmother, afraid, love, modern,	home, family	negative -> positive	positive
- Story 1		TRUE	TRUE	TRUE				
	This coffee maker is really cool. I love the color and the plain style. This is design. You know that my parents have 3 of them? They collect fancy Finnish design objects and they have others too - glass and all. As child, I was never allowed to touch the stuff. Last summer my father showed us how it works and we even drank the coffee. It is funny old fashioned way to make coffee. Not brewed at all but it all cooks in the pot on the stove. Think of how elementary it has been! But I love the pot and would like to have it in my own home when I move out. It would be awesome to have it in the bookshelf!				cool, love, Finnish design, design, plain-fancy, father, parents, funny, old fashioned, bookshelf, home	restrictions vs. allowance, family, living on your own,	no	positive
- Story 2		TRUE	TRUE	TRUE				

Fig. 9: Example of manual processing of narrative.  
Exploring the redemption/contamination measures of Adler & colleagues (2016)

The next step would be to also apply the motivational themes in the narrative analysis. Utilizing the motivational themes could potentially give insight into the values of the authors of the stories, based on the motivations depicted in the narratives. Thereafter, we could further continue with the analysis of these values by using tools from cultural semiotics (see: 4.3.6 above).

## 5.2 Workshop #2 (at Mini-conference #2)

As part of the internal Mini-Conference 2 that took place on the 23rd of March 2021, WP2 held a joint workshop together with WP5 and WP7. The aim of the second workshop was for each case study to share mock-ups of their desired interfaces to subsequently explore how their designed mock-up interfaces could be improved using the interpretation and reflection methods, and the Interpretation-Reflection Loop. The participants included at least one representative from each case study partner, SPICE consortium members, as well as members from all work packages.

Prior to the workshop, each case study was asked to submit their pre-workshop “homework” tasks. The homework tasks were put together by WP2 and WP5. The tasks involved the case studies having to use theoretical approaches to interpretation and reflection methods to design their own mock-up interfaces. We will thereby firstly introduce the pre-workshop materials, together with the homework task, and thereafter the workshop itself, the outcomes and the emerged discussions.

In order to help the participants better prepare for the workshop, WP2, WP5, WP7 put together a collection of pre-workshop materials (a digital workshop package) and designed a preparatory homework task.

The digital workshop package consisted of two parts; a methodological part (prepared by WP2), and an applied part (prepared by WP5). The methodological part provided an overview of the different methods for interpretation and reflection, and a short introduction and visualization of the Interpretation-Reflection Loop. The applied part consisted of mock-up examples of citizen curation activities, together with information on how to develop one's citizen curation activities. The preparatory homework task was to try to use the methodological part together with the applied part to develop theoretically grounded citizen curation activities relevant to their case-study.

The digital pre-workshop package was sent 2 weeks prior the workshop, and the participants were asked to submit their tasks latest one day before.

### Methodological part (WP2)

The methodological package included:

1. **Seven (7) Method Cards** The seven (7) SPICE method cards described in more detail the four (4) interpretation and three (3) reflection methods. Each method card included: an introduction of the method consisting of condensed key points derived from the theoretical framework, a section linking the method to the mock-ups, and finally, hyperlinks directing to examples of the method being used in the domain of cultural heritage, art or experiences (see: Fig. 10).
2. **One (1) empty "My card"** which were used to select which methods each case study found particular interesting for incorporating in their interface mock-ups (see: Fig. 10).
3. **A brief description and visualisation of the "Interpretation-Reflection Loop"** (see: Fig. 2).

### Applied part (WP5)

The applied package included:

- *A document describing the Citizen Curation mock-ups*, meant to be used as a starting point for making one's own mock-ups.
- *Instructions for making one's own mock-ups*. This includes how to download the Balsamiq software that was used to make the citizen curation mock-ups.
- *Two Balsamiq files containing interfaces from the mock-ups documents* that one can reuse in your mock-ups (see: Fig. 11).



Fig. 10: Seven method cards and "My Card"

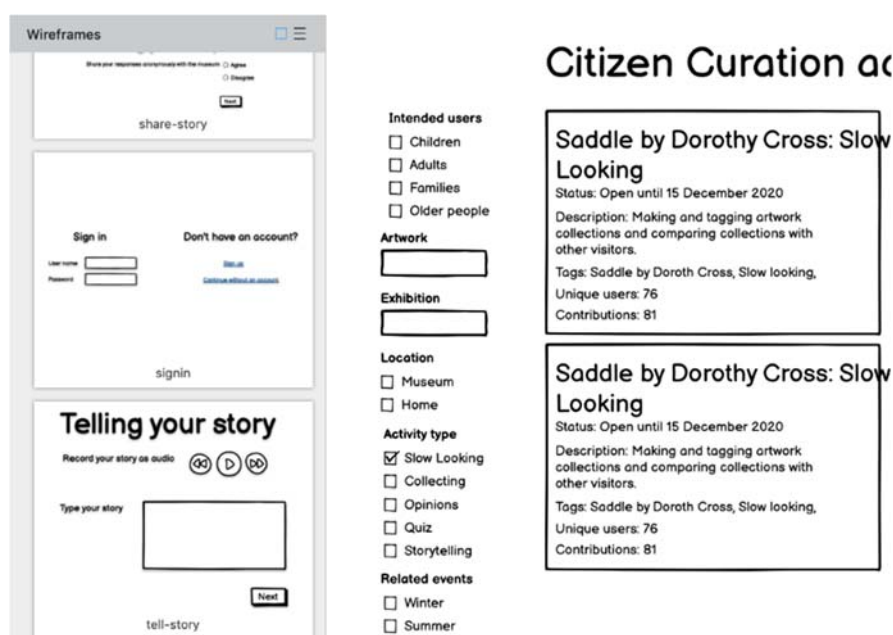


Fig. 11: Screenshot from the example interfaces in Balsamiq®

### Mini-Conference 2, 23.03

The mini-conference 2 took place on Tuesday the 23rd of March from 9.00-13.00 on Zoom. During the conference, each case study and work package was represented at least by one representative. Before the conference, all 5 case studies had submitted their 'My Card' and their interface mock-up designs. In order to give a better overview of the emerging themes and discussions, the conference will be described in two parts.

### Participants

The participants of the mini-conference included at least one representative of each case study partner, SPICE consortium members and members from all work packages. For an overview of the case studies institutions (and their acronyms) see Table 3. Additionally, Table 4 summarizes the main characteristics of each case.

Short name	Institution name	Country
DMH	DESIGNMUSEON SAATIO - STIFTELSEN FOR DESIGNMUSEET SR	Finland
GAM	GALLERIA D'ARTE MODERNA	Italy
HECHT	HECHT MUSEUM	Israel
IMMA	IRISH MUSEUM OF MODERN ART COMPANY	Ireland
MNCN	MUSEO NACIONAL DE CIENCIAS NATURALES	Spain

Table 3: Case studies  
(from D7.1 – Evaluation Protocols)

### 5.2.1 1st part - Case study presentations

At the start of the conference, each case study was asked to do a short 10-minute presentation of their mock-ups and present their selected methods using the 'My Card' method card. Each case study

presentation was followed by a 5-minute discussion.

It was gathered from the presentations and submissions that each case study approached the methods and the mock-up tasks differently depending on their primary target-group and underlying case study objectives. As many interesting approaches and considerations emerged from these presentations, some of these will be highlighted below (see: Table 4).

Case Study	Bonding capital	Bridging capital
DMH	Enable senior citizens and families living far from the museum to engage with culture and share among themselves or with their communities regarding how their personal artefacts and interpretations connect to Finnish culture and design heritage.	Make their artefacts and interpretations available in virtual and touring galleries to provoke understanding and contributions across generations and geographical communities.
GAM	Enable Deaf people and other visitors to actively participate in cultural interpretation and storytelling and connect and share their interpretations through social media functions.	Enable the contributions of Deaf people to be digitally accessible to others in the museum and online. Interconnect contributions using story features such as characters and emotions.
HECHT	Enable members of religious and secular communities, in particular minority populations, to express and share their viewpoints and appreciate the variety of opinions even within a community.	Provide support in the museum for accessing and exploring opinions across different communities in order to find similarities and also respect and understand differences.
IMMA	Support groups who are less able to visit the museum physically, such as asylum seekers and children with serious illnesses, to access collections and share their own perspectives.	Make their perspectives available online and in the museum. Encourage visitors to think about universal, personal themes such as family to make interconnections across groups.
MNCN	Actively engage children, including those from lower socio-economic groups who may not consider science interesting or a career option, through activities such as games and puzzles.	Make anonymised contributions available across groups to explore differences of opinion on biodiversity and what individuals can and should do to protect the environment.

*Table 4: Bonding and bridging capital of the case studies  
(from D7.3 - Case Studies Progress and Plan)*

### *Interpretation and reflection methods*

It was noted that while some case studies were more decided on which methods and activities, they were interested in incorporating, then others were still open for exploring different approaches. For instance, one of the case studies (MNCN) that had only marked one interpretation method (narrative methods), and no reflection methods, was interested in further enriching their methods based on the feedback to their mock-ups. It was suggested to the case study by other participants that by using their collected stories, they could incorporate methods for reflection from duoethnography, as this could help elicit conversations about important topics (e.g climate change) relating to their case study objectives. Furthermore, while one other case study (HECHT) had also not marked any reflection methods, they were nevertheless interested in incorporating visitors' values, pointing to potential methods from cultural semiotics.

In relation to combining and utilizing the various interpretation and reflection methods, one of the case studies (DMH) highlighted the eminent relationship between artifact analysis and narrative methods, as for them, the two were considered inseparable. Moreover, it was pointed out that visualization techniques



could additionally be used outside of just data visualization, also for promoting usability and accessibility for the users, or used as a foundation for storytelling activities and gamification.

### *Who is the “user”?*

All the case studies demonstrated different approaches when presenting who the ‘main’ users of the system were. While some case studies were more focused on the visitor perspective, then others presented their mock-ups more from the curator, or museum mediator perspective. During the conference, this allowed discussing and addressing the different considerations for the platform from various viewpoints. For example, when one of the case studies (IMMA) was in the first stages of development more interested in using the ‘outputs’ from the ‘groups analysis’ primarily for the museum curator, then another case study (HECHT) was leaning more towards the ‘outputs’ to be facilitated by the system and more directly with the individual visitors.

Moreover, an important consideration that was pointed out was concerning primary target groups and communities surrounding these target groups. During one of the case study presentations (GAM), it was pointed out that although it was important for them to keep their focus on their target group, they simultaneously wanted to focus on cultivating the broader community around their target group. They then demonstrated this by giving an example of a visitor ‘outside’ of their primary target group using the system. This highlighted an essential consideration for all the participating case studies.

### *New ideas*

Interesting ideas surfaced in relation to new activities. After one of the case study (IMMA) presentations, one of the ideas involved the visitors using existing artworks, paintings and objects in the system to create their own collages, promoting a more gamified approach. Moreover, it was also noted that the case studies were clearly inspired by each other’s presentations. This was particularly apparent during the 2<sup>nd</sup> half of the conference where all the 5 cases could discuss the possible changes to their mock-ups, and their chosen methods.

## 5.2.2 2nd part - Interpretation-Reflection Loop

During the second half of the conference, WP2 held a presentation elaborating on the interpretation-reflection loop with a focus on reflection processes -- how to stimulate the input from the participants towards social cohesion. Although all cases had prior to the workshop been sent a document describing the interpretation-reflection loop and the related processes, the presentations held by WP2 and WP6 aimed to further establish the connection between the methods and the foundational underpinnings of SPICE (social cohesion, inclusion, empathy, and others.).

### *Reflecting on the IRL*

At the end of the presentation WP2 suggested five guiding questions to help the case studies improve and enhance their reflection methods and activities, converging towards the interpretation-reflection loop. Thereafter, the participants were placed in breakout rooms to discuss the aforementioned questions relating to their case study. After 10 minutes, all participants returned to the main room to elaborate on their answers.

The 5 guiding questions:

- How do the activities in your mock-ups enable citizen curation in relation to your exhibition?
- What kind of reflections do you expect your mock-up activities to elicit on the participants?
- What type of reflection “outputs” could help you best elicit important conversations in your community?
- What do you think you could do to direct these mock-up activities, to make your audiences reflect in a direction that promotes social cohesion? (use your intuitive understanding of social cohesion)



- What changes to your original mock-up design would you consider based on this?

The post-task discussions were fruitful in terms of the case studies reflecting on their approach and possible changes to their mock-ups.

See Table 5 for the full list of answers by each case study.

Case study	1. How do the activities in your mock-ups enable citizen curation in relation to your exhibition?	2. What kind of reflections do you expect your mock-up activities to elicit on the participants?	3. What type of reflection "outputs" could help you best elicit important conversations in your community?	4. What do you think you could do to direct these mock-up activities, to make your audiences reflect in a direction that promotes social cohesion?	5. What changes to your original mock-up design would you consider based on this?
HECHT	Our scenario has less to do with citizen curation and focuses on social cohesion and inclusion.	We expect participants to have a stronger awareness of other people's opinions and motivations. We hope they reflect on the values that drive their opinions and can emphasize with others values.	Reflections that talk about values and are provocative enough to elicit responses (but they should not be too provocative to shut down the conversation)	We should break up the question to lead them to examine their opinions on a deeper level. We can also use indirect approaches that would help them express opinions. Finally, we can show them other people's opinions according to our understanding of their social/personal/community model. Possibly, it is better to first show one person's opinion, and only then, show the entire span of opinions.	Breaking up the questions to sub-questions. applying a conversation-style interface. We hope we can apply techniques of conversation elicitation.
MNCN	Our intention is to provide teachers with the possibility to create their own treasure hunts, choosing the objects from the museum's collection, the narrative and the questions that are most appropriate to the interests of their students. We also envision the possibility for teachers to share	Our aim is to get participants to reflect on the long-term implications that some of their actions in everyday life may have. We also want them to reflect on the implications that climate change can have on their lives and to be aware of the small but important role	We believe that individual stories about the personal understanding of climate change, its effects and how we act to prevent it, can be used to confront different views on this issue. The stories can be collected during the activity at the museum, or they can be taken to	Perhaps cohesion can be promoted if through the reflection activities a common awareness of the problem is built, through the stories of other children who may be more aware of the importance of taking action on climate change. It may be easier for a child to hear the	The mock-up design is still valid, but we need to think better about the activities that will take place after the museum visit. It is also necessary to think about the possible uses that the museum itself can make of the interpretations and reflections collected during the visits.

	their treasure hunts with other teachers, thus creating a community of teachers who can be both creators and consumers of content.	that we as individuals can play.	school where, with more time, the teacher can invite the children to reflect on the issues raised during the museum visit.	voice of another child than that of an adult.	
IMMA	The current mock up enables citizens to select and interpret artworks in different ways, and crucially to share those personal selections and interpretations with friends and family (via email), the general public (via social media) or the museum itself. We see the linking and sharing of these individual acts of selection and interpretation as central to the concept of citizen curation.	We expect responses to vary from the descriptive and factual, e.g. 'What is going on in this image?' or 'What is this sculpture made of?' to the personal and creative, elicited by more open-ended questions, e.g. 'If you were given the chance of making a sculpture by mixing two or more everyday objects, would you want to do so? Why/Why not?' etc.	Reflections that capture novel perspectives on artworks and objects, or which come from users from underrepresented or underserved communities. Personal reflections that elicit empathy from different user groups and that problematise perceptions of homogeneity within communities, with the ultimate aim of fostering social cohesion.	To start with, the deliberate and conscious selecting of artworks with which to elicit reflections will be important, i.e., encouraging visitors to think about universal, personal themes such as family to make interconnections across groups.	Based on our discussions of the above during mini-conference 2, the suggestion was made to build in modular reflection activities so the user can have a number of alternatives 'ways in' to thinking about and reflecting on an artwork or object. A modular rather than linear approach to reflection activities would also increase accessibility and inclusion.
DMH	The activities programmed such as sharing collections and design stories are geared to promote dialogue. Citizens would be involved and will be able to participate in design heritage (creation) through these activities.	Satisfaction, joy, through sharing experiences as well as inspiration and curiosity related to the ability of sharing the contents/learnings to friends and relatives.	There are several end-user communities in DMH. It would be important to understand who they are, where do they come from (social and cultural backgrounds), and the content of the museum. Personal outputs tied to their own narratives through auto and duoethnographic interactions are envisioned.	Due to a variety of end-user communities from diverse backgrounds sharing and exchanging narratives and knowledge promotes understanding amongst these diverse groups. It fosters curiosity/interest about each other has the ability to break biases/stereotypes and is likely to aid social cohesion. If we are aiming to measure social cohesion qualitatively, a basis/framework is very much needed throughout SPICE.	We would work on the Pop-Up Design Museum mock-up and outline a detailed set of activities in it. Mockups being used by curators, educators, and end-user communities will direct the iteration of existing mockups.

GAM	We ask visitors to directly interpreter their favorite artworks giving the museum their emotional response to what they see. Their contribution will be side by side with the “official” museum voice and available to reuse for other visitors as well. In this way knowledge about the collection will be grow including visitors’ voices.	We expect them to have a more natural approach to the collection and we wish they will feel free to express their reaction to the artworks. We hope that validating the audience response will be a way to involve them more and to create a feeling of ownership and pride regarding the collection.	Voices and interpretations that diverge from the curatorial one may help everyone step up and share their reaction toward a collection which is owned by the city. This will also help the museums to better understand what is relevant to a broader community.	For sure, in our scenario we will elicit all the audience to engage with interpretation activities and only then reveal that the scenario was tailored on a very specific audience, deaf teenagers. Enjoying a tool which would have normally been considered an aid, hopefully will contribute in helping generate a deeper awareness on inclusive design.	The mock-up scenario is still valid, but we feel we should give more freedom in digitally manipulating the artwork. So instead of giving only the possibility to comment the artworks in different way, we are evaluating the feasibility to let users also merge different artworks with a “collage” tool.
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Table 5: Case study responses to the five guiding questions at Workshop #2

### 5.2.3 Conclusions

The mini-conference 2, through its various stages and contributions, undoubtedly served as an important scaffold for the case studies to advance in developing their ideas, chosen methods and related activities. Moreover, the case studies presenting and reflecting on each other's ideas in an open discussion format, also illuminated important considerations for all the work packages.

It was observed during the first half of the conference that the reflection methods and related activities were approached with much more ambiguity than the interpretation methods. However, it was also clear that after WP2's presentation on the interpretation-reflection loop and WP6's presentation on visualization of citizen curation, the case studies began to better grasp the intrinsic connection between interpretation and reflection in SPICE. And finally, even more new ideas and approaches emerged from the 2nd half of the conference, such as: finding new different ways for eliciting visitors' interpretations and providing alternative modalities for different tasks (IMMA), as well as introducing new roles for users through that encouraging peer learning and dissemination of knowledge (MNCN).

Furthermore, this workshop provided WP2 with many fruitful ideas and directions to be considered in the second year for the development of the IRL model.

## 6.0 Conclusions and Future work

In this report we introduced our research and first iteration of ideas for methods for reflection to be used in different aspects of the SPICE platform. The methods presented included Narrative Identity, Duoethnography and Cultural Semiotics. For each method we presented key-concepts, followed by relevant examples that apply the method in different domains of cultural heritage and/or interactive media experiences. We also elaborated on the relevance of each method and specific recommendations for the SPICE framework. We presented our initial conceptualization of the Interpretation-Reflection Loop and elaborated on how the reflection methods can be integrated cohesively into that model, which aims to inform the technical implementations of different components of the SPICE platform. In particular we pointed out the aspects in which WP2, WP3, WP4, WP5 and WP6 are collaborating and where there are

opportunities for deeper integration. We also described and prospected the kind of normativity implied by the goal of enhancing social cohesion through the use of citizen curation methods in the context of cultural heritage institutions, so that such normative values can be used as an attractor in the IRL model.

The next steps for WP2 that spring from this report include:

1. Develop further the Interpretation-Reflection Loop model (IRL model) by integrating Lotman's Semiosphere framework with the notion of Cultural Narrative Identity with emphasis in a heterarchical perspective of overlapping systems of values and of belonging criteria.
2. In this direction, deepen the interactions with WP3, WP4, WP5 and WP6 in order to iterate the development of the IRL and investigate opportunities for implementations of ideas derived from the model into different SPICE components, such as: the different ontologies, recommender systems, content analysis, ontological reasoning, user-interfaces, visualization, exploration and sense-making systems, being defined and implemented in SPICE.
3. Research, derive and test concrete scriptable activities that enrich the opportunities for citizens to contribute content that is rich enough to be amenable to the kind of dynamic analysis aimed by the IRL in order to converge to the different dimensions of social cohesion.
4. In this direction, prospect and explore how to best combine interpretation and reflection methods, related activities, and mock-ups into "user-journey loops" that circles back and forth between citizens' produced interpretations of cultural objects and reflections on these contributions, as well as the contributions of others.
5. Test the analytical tools resulting from the IRL model in the upcoming workshops involving different stakeholders from the five case studies in collaboration with WP7.
6. Ideate possibilities for online workshops with real stakeholders in the five case studies, shall the COVID-19 situation persist, and if possible, progress with the original plan of organizing *in situ* workshops for these purposes.

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## 8.0 Annexes

### A. Permutation 01 – Workshop Flow Diagram

