Value of culture

Introduction and method

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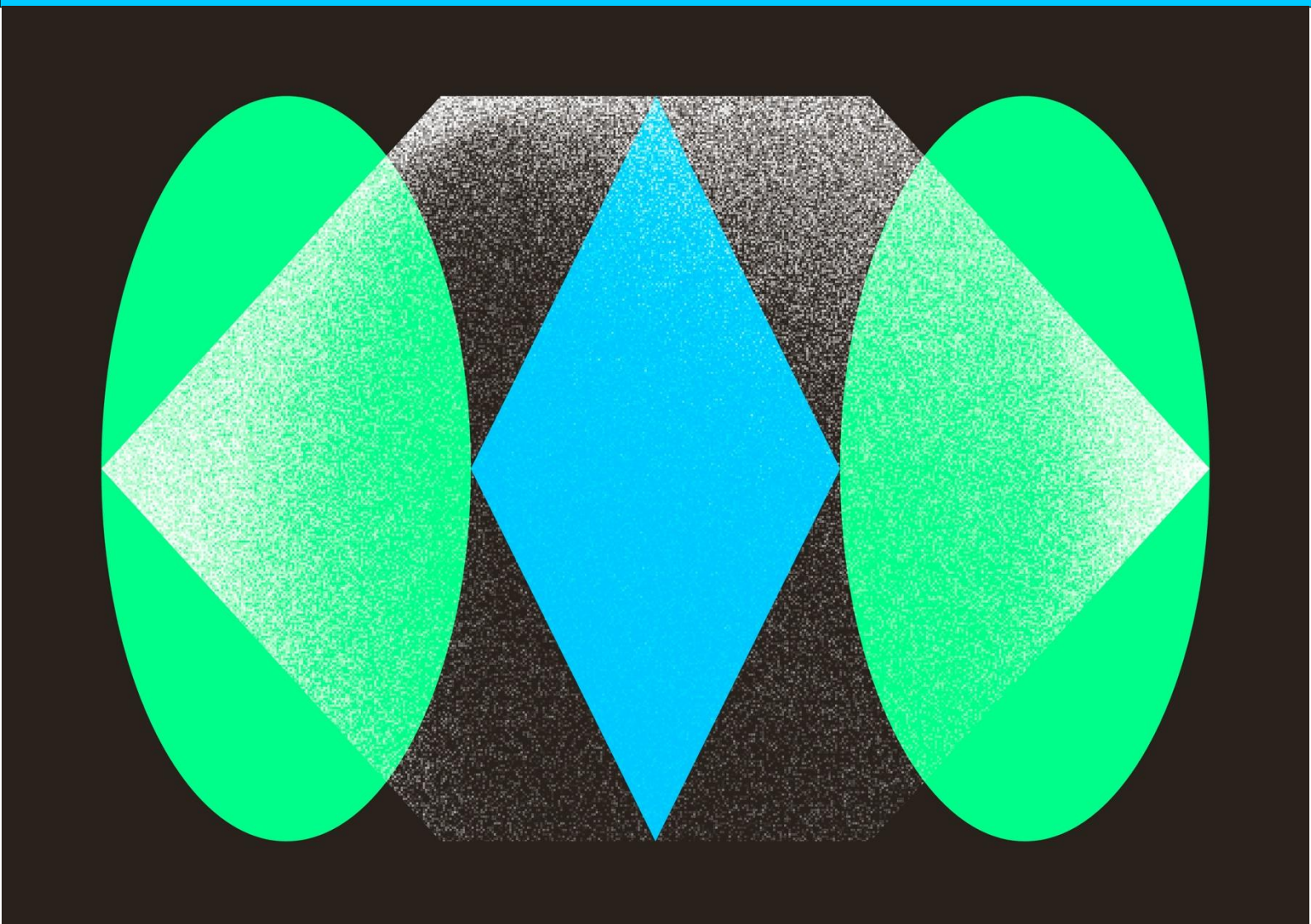

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1. Introduction

Debates about the value of culture often get lapped into fruitless exchanges. For some, asking the question is in itself a sign of the instrumentalisation of culture and therefore wrong. For others, research into the value of culture is a logical consequence of the observation that cultural participation has effects and that society should strive to better understand and perhaps even help to reinforce those effects. An integral part of such debates is the discussion about the range of the value of culture. Some emphasise the so-called 'intrinsic value' of culture, a position that is in line with the *l'art pour l'art* principle of postmodern art. In this view, culture is considered valuable because of its intrinsic qualities, such as beauty or aesthetic experience. The problem with this approach is that, with such a broad interpretation, the value of culture becomes an assumption rather than a phenomenon that can be empirically tested. The cultural sector is doing itself a disservice by adopting such an interpretation. Moreover, one could argue that if people really feel that something has an effect, regardless of quantitative parameters, this should automatically mean that there is an effect. In that case, one could also reverse the question and argue that if people think that something has no effect on them, that there indeed is no effect. The phenomenon of advertising or propaganda immediately illustrates why it is not a good idea to narrow down 'effects or value' to those influences that people are aware of. This does not detract from the importance of defining the scope of the value of culture, of course, and the idea that many 'effect approaches' tend to define value (too) narrowly and focus exclusively on the perhaps fleeting short-term effects of participation in a cultural activity.

The above illustrates the need for an approach to the value of culture that, on the one hand, does justice to the uniqueness of the cultural sector but, on the other hand, also dares to ask how cultural participation works exactly and through which mechanisms it has impact on participants and/or their environment.

Because of this, the Centre for Cultural Research set up a line of research about the Value of Culture, focusing on inventory, analysis and synthesis. The first step in this line of research consists of a large-scale, systematic, and synthesis-oriented literature study, of which the results will be spread over a series of sub-reports. This first sub-report serves as an introduction and focuses on (the justification of) the methodology used and the choices made.

While it will become clear what follows that we interpret 'value' broadly – and will refer to different values – we still needed to make a certain distinction. This first note discusses those

choices, explains our considerations and, above all, clarifies how we got started in concrete terms. The latter applies both to the substantive focus of the selected studies and to the search strategy used. It is important to clarify these matters. After all, we hope that these reports will not be an end point, but a starting point for further debate and exploration of the value(s) of culture. This requires a clear definition of exactly what we have investigated and how.

2. Which culture?

Over the years, the concept of 'culture' has transformed into a collective term that covers many meanings. Due to its unclear definition, it is treated casually in literature. The concept of 'culture' appears in the form of both dependent and independent variables. It is considered both measurable and immeasurable, tangible in the form of capital but at the same time indefinable because culture cannot be captured in terms that are not part of it. Roughly speaking, one could say that there are two dominant interpretations of the concept of culture: (1) the anthropological interpretation of culture and (2) a narrower interpretation based on measurable cultural expressions.

Culture as an anthropological concept is undoubtedly the most holistic approach, but also the least concrete. The interpretation is in line with what Alexander (2003) describes as the 'strong programme' of the approach to culture. In this interpretation, culture is not a thing '[...] but a dimension, not an object to be studied as a dependent variable but a thread that runs through, one that can be teased out of, every conceivable social form' (p.7). Within this approach, culture is not seen as a static phenomenon, but as a practice that exists because it is reproduced. It could be argued that such an anthropological interpretation of the concept of culture belongs to a more interpretative sociology, in which culture is not inherently valuable or meaningful, but in which meanings and values are constructed through cultural factors such as symbols and narratives. Based on the fact that humans are meaning-making beings, we need culture in order to interpret all the experiences we have. From this approach, culture is valuable because it enables us to understand each other. It allows us to share meanings and fall back on a common framework, a shared repertoire of signs or a cultural toolkit (Swidler, 1986). We share meanings of objects, actions and connections. We can discuss them with each other. These meanings are familiar, normal. In that sense, they have no past. We repeat them, adapt them, update them, raise them for discussion, criticise them, and so on. In short, we communicate about them and with them (Gielen, Elkhuizen, van der Hoogen, Lijster, & Otte, 2014) . Without that sharing, without that commonality, living

together becomes impossible. When we talk about culture as an anthropological concept, we are therefore talking about culture as a binding agent, culture as a whole way of life (Williams, 1983). It is culture that we see as having existence value, culture that serves as the fundamental breeding ground from which a society can grow. Viewed from the anthropological perspective on culture, the question of the value of culture is actually trivial. Humans distinguish themselves from animals through culture, so it goes without saying that culture has a profound effect on humans. When the ambition is to determine the value of culture through research, and therefore empirically, the premise that everything is culture is not workable.

For this reason, we are forced to narrow our interpretation of culture to its measurable effects. When we refer to culture in what follows, we are therefore talking about measurable cultural expressions. These are still activities that are spiritually enriching and meaningful, but which are also limited in time and space. We thus narrow the interpretation of culture to the capturable range of cultural expressions/artefacts/objects (including the arts, heritage and socio-cultural work) that create value in themselves (e.g. through the way in which society is represented in them or the way in which they respond to social events). The limited nature of this interpretation of culture – cf. the focus on cultural participation – allows us to distinguish between cultural and non-cultural activities, so that participants and nonparticipants can be compared with each other. In this study, we therefore focus on the empirical effects that culture has on participants.

We base our definition of cultural activity on the 'Measuring cultural participation' published by UNESCO (2009). Within this interpretation, culture is seen as a collection of cultural domains, including activities, goods and services that play a role in the various phases of the cultural cycle or value chain. These phases include: 'creation, production, dissemination, exhibition/reception/transmission, production/consumption' (p. 16). This interpretation covers both active and passive or receptive forms of cultural participation and both organised and non-organised, subsidised and non-subsidised, regular and event-based cultural activities. The focus is also on a very broad range of domains and disciplines: movable, immovable and intangible cultural heritage, performing arts (theatre, dance, circus, music, etc.), visual arts, literature and film. Domains such as design, games and general media are deliberately excluded in order to maintain the focus of the study and ensure the feasibility of the literature review. Because the aim of this study is to examine the causal effectiveness of specific cultural expressions, rather than to gain an in-depth understanding of how holistic

cultural processes function within specific communities or social groups, we have opted for a narrower, measurable approach to culture.

3. Value of culture

3.1. Value as an effect

In order to understand and measure the value of culture, it is essential to use methods that can determine the effects of cultural expressions. Therefore, within the framework of this research, the value of culture is interpreted as the demonstrable effects whereby we establish an empirical correlation between cultural expressions and outcome indicators. With regard to the data collection for the literature review, this means in concrete terms that we are primarily interested in **longitudinal and (quasi-)experimental research**. In longitudinal research, the same people are followed over time and measurements are taken at several points in time. This makes it possible, for example, to measure how a person's health status changes over time when they participate in a particular type of culture. Experimental research adds to this by making it possible to clearly distinguish the stimulus – participation in the performing arts, for example – by comparing an experimental group with a control group that was not exposed to this stimulus. In this way, it is possible to clearly assess the extent to which culture is responsible for a particular effect. However, the existing literature reporting on the effects of culture is mainly based on non-longitudinal research, or cross-sectional research. Since longitudinal research requires respondents to be followed over time, it takes a lot of time and resources, which are usually not available. Cross-sectional research requires only one contact, making it much more affordable and a faster process. The disadvantage of this type of research is that it focuses on correlations, connections in the variation between characteristics that are surveyed at the same time. Strictly speaking, this type of research design does not allow us to make statements about the direction of causality claims. Does participation in culture causes a shift in attitudes, or is it people with certain attitudes who are already inclined to participate in culture? Cross-sectional research can never answer that question with certainty. The attitude that should be adopted is necessarily pragmatic.

This does not mean that cross-sectional research cannot be valuable. Even when research does not allow for causal statements, insights into the links between cultural participation and attitudes can still be relevant. Moreover, it is questionable whether thinking in terms of

unidirectional causality is really that meaningful (Paluck & Green, 2009). Given the complex reality in which cultural expressions occur, it is ultimately a bold assumption to assume a clear one-way causal relationship (Byrne & Callaghan, 2022). The inability to organise social science research in a social vacuum without noise means that it is very difficult to identify the mediating element with any certainty. In that respect, both cross-sectional and longitudinal research say little about causality. Since we are not so much interested in the direction of the relationship, but want to make statements about the connection between cultural participation and associated effects, we do not need to limit ourselves to longitudinal and quasi-experimental studies.

In addition to longitudinal and (quasi)-experimental research, qualitative research is a valuable tool for further exploring the complexity of the value of culture. While longitudinal, (quasi)-experimental and cross-sectional research mainly focus on measuring quantifiable effects, qualitative research offers the opportunity to delve deeper into the experiences, perceptions and contexts that underlie the observed effects. Through techniques such as in-depth interviews, focus groups and observations, researchers can gain insight into the various mechanisms through which cultural expressions acquire meaning and influence individuals and communities. As Mercer (2002) has already pointed out, qualitative research allows us to look beyond the metric values that encompass participation in and consumption of culture; it offers insight into "how people use these cultural forms for different purposes, such as identity confirmation, personal development, social distinction and demarcation, etc., and how these different uses are linked to socio-economic and other demographic variables" (p. 80). In this study, we therefore include qualitative studies since they can provide more insight into *how* culture is valuable.

3.2. The areas in which culture can be of value

The empirical effects of culture have been repeatedly the subject of research, albeit often measured in different ways. In this part of the study, we focus primarily on the way in which different researchers categorise these empirical effects, with a view to developing a general model. We divide the effects that emerge from longitudinal, (quasi-)experimental and cross-sectional research (both qualitative and quantitative) into different domains in which they occur. In this way, we can provide an overview of the areas where culture creates value. In a first phase of data collection, the data was categorised within categories derived from previous literature reviews. More specifically, we rely on three important sources of inspiration. Since the most recent Dutch literature study on the value of culture dates from

2014 – see Gielen et al. (2014) – we consider this to be the pivotal point around which we have structured our literature review. In addition to 'The value of culture' by Gielen et al. (2014) , we synthesise the ideas of Matarasso's (1997) 'Use of ornament', which can be considered a kind of canon within impact research into the social value of culture. Finally, our approach is also strongly inspired by 'Understanding the value of arts and culture' by Crossick and Kasznska (2016). As will become apparent, the taxonomy was applied in the latter study from a policy perspective, which sheds new light on the matter. Furthermore, Bourdieu's theory of capital is cited in relation to the indirect effects of culture.

In his study 'Use or Ornament?' Matarasso (1997) investigated the social effects of cultural participation in England by interviewing participants and performers from 60 art projects. In collaboration with Comedia, he conducted a large-scale study between 1995 and 1997 about the non-economic impact of participation in art and culture. Despite possible criticism about the representativeness of his research, his collection of experiences offered an innovative perspective that served as a foundation for further research. Matarasso (1997) showed that participation in arts and culture has a positive influence on personal growth, self-confidence, skills development and educational progress on the individual level. He also emphasised the contribution to general social cohesion and the development of a deeper understanding. In addition, areas such as health and creativity were linked to participation in cultural activities. Matarasso identified six themes that summarise the social impact of participation in arts and culture. Although there is some overlap between these themes, they offer a comprehensive insight into the social effects of cultural expressions. A first theme is the positive influence of participation in arts and culture on **(i) personal development**. For example, a respondent who participated in a theatre group noted how this increased his self-confidence. This illustrates how cultural activities can contribute to individuals' self-image and their growth. In addition, Matarasso emphasised the importance of cultural participation for **(ii) social cohesion**, an insight that is also strongly supported by Putnam's (2000) classic study on 'social capital' as a characteristic of a community (rather than of an individual). Joint art projects, such as a community art project, brought diverse groups together and fostered mutual understanding and respect. An example of this is how such a project in a neighbourhood with diverse backgrounds resulted in an increased understanding and respect among participants. It is immediately apparent here that culture can not only be valuable at the individual level, but also at the collective level. Another theme where this is striking is **(iii) community empowerment and self-determination**. Local events, such as a music festival organised by the community, encouraged participants to make joint decisions and contributed to their organisational skills and a sense of pride and ownership. Matarasso also

mentioned the importance of cultural projects for **(iv) local image and identity**. For example, a photography project that highlighted the unique aspects of a neighbourhood helped to change negative perceptions and improve the local image. The works on display offered a new perspective on the beauty and resilience of the community. The impact of culture on **(v) imagination and vision** was also highlighted. Participants in innovative cultural projects discovered new expressive possibilities and changed their perceptions of individual and community capabilities. For example, participants in a dance project discovered new ways to express themselves and their creative potential. Finally, the positive influence of cultural activities on **(vi) health and well-being** was emphasised. Art therapy programmes were not only found to be an outlet for expression, but also led to improvements in" the emotional well-being of participants with mental health problems.

Although the economic impact of culture and art had already been extensively researched, thanks to its recognition of social impact, 'Use or Ornament?' is one of the first substantiated studies to provide a comprehensive overview of the effects of organised culture. This paved the way for a more holistic approach to impact research on the impact of culture.

The research by Gielen et al. (2014) built on this knowledge. Sixteen years after 'Use or Ornament?', Gielen and colleagues looked back on the research that had been conducted over the years with regard to the organised arts and culture, again with the aim of clarifying its empirically demonstrable effects. Whereas 'Use or Ornament?' focused exclusively on social effects, Gielen and colleagues attempted with **'The value of culture'** to create a more comprehensive classification. Based on a literature review of (largely) peer-reviewed articles, they identified five areas in which culture can be considered valuable. In addition to social effects, they distinguish cognitive effects, health, experiential values and economic effects. The **(i) social effects** described by Gielen and colleagues are largely comparable to Matarasso's interpretation, on the understanding that Gielen and colleagues' study is based on more empirical evidence and their classification is also aligned with this. The focus is again mainly on social cohesion, for example through participation in socio-cultural work (Cockx & Bastiaensen, 2010). Participants not only get to know each other, but also adopt a more active lifestyle: they want to make a difference for like-minded people, the neighbourhood or society (Sardu, Mereu, Sotgiu, & Contu, 2012). Amateur arts, for example, are also often performed in groups, enabling them to achieve social benefits (Kirschner & Tomasello, 2010). Furthermore, **(ii) cognitive effects** are distinguished. This refers to the impact of cultural experience on cognitive abilities such as meaning, perception, memory, spatial awareness, reasoning, emotions, etc. In short: knowledge of oneself and of the society

in which that 'self' functions. However, proving creativity, for example, does not lend itself easily to study. Empirical research into cognitive effects was still considered in its infancy by Gielen and colleagues in 2014. However, the literature did clearly establish empirical results regarding improvements in motor skills, auditory ability and vocabulary through practising and immersing oneself in music (Forgeard, Winner, Norton, & Schlaug, 2008; Preminger, 2012). Since 2014, interest in **(iii) health** in relation to culture has clearly increased. As a result, there has been considerably more empirical research than when Matarasso mentioned health as a possible domain in which culture can be of value (Verhoeven, Spruyt, & SIongers, 2024). Gielen and colleagues then focus primarily on how cultural engagement (receptive or active) influences subjective health: the degree of satisfaction with our health and 'life' (Cuypers et al., 2012; Grossi, Tavano Blessi, Sacco, & Buscema, 2012). Closely linked to the cognitive effects, the report also distinguishes the intrinsic values of culture, or rather: the **(iv) experiential values**. These are the values that could not be realised without culture, such as being challenged in your thinking and imagination, being emotionally moved, getting to know a new world, 'escaping', etc. Empirical research into, for example, the broadening of frameworks through dance and theatre supports this (Walmsley, 2011). But research into the experience and impact of reading for example also plays a role here (Colpaert, Glorieux, Lauwerysen, Moens, & Vandebroeck, 2007). Finally, unlike Matarasso, Gielen and colleagues also focus on the **economic effects** of culture. Once again, this highlights the collective value of culture. Based on the literature, four types of effects on the economy are distinguished. Firstly, participation in organised culture creates employment and economic activity. Think, for example, of the multiplier effect, whereby the input (e.g. subsidies) is smaller than the financial output it generates (Cebr, 2013). A less direct effect is observed in the added value that (public) art can offer in the revitalisation of cities or neighbourhoods (Andres & Grésillon, 2013). The Guggenheim Museum in Bilbao, which acts as a tourist attraction thanks to its iconic appearance, is an excellent example of this. But festivals, events, etc. can also have the same effect. Thirdly, it has been established that the presence of a rich cultural offering has a positive impact on the property market of a city or area, even among people who do not actually participate in culture themselves (Lazrak, Nijkamp, Rietveld, & Rouwendal, 2014). Finally, it has been established that there is a link between the creativity of a population group and its economic performance (Bille, 2012). However, the exact causality is difficult to determine in this context, with concepts such as 'creativity' being difficult to measure. In short, based on the literature, Gielen and colleagues establish that a high population density promotes creativity and that the cultural sector has a positive influence on the economy of its environment.

We also take into account the report by Crossick and Kasznska (2016) when setting up our own literature review. 'Understanding the value of arts & culture', published two years after the report by Gielen and colleagues, also compiles research into the different values of culture. As in the literature reviews discussed earlier, Crossick and Kasznska again use a subdivision. Unlike 'The value of culture', the approach of 'Understanding the value of arts & culture' is more policy-oriented. In general, however, there are many similarities with the report by Gielen and colleagues. The subdivision is therefore largely the same. Crossick , and Kasznska also distinguish five categories in which the impact of culture can be structured. **(i) Economy** and **(ii) health** are interpreted in the same way as Gielen et al. Compared to the report by Gielen and colleagues. The social domain is subdivided into **(iii) 'communities, regeneration and space'** and **(iv) 'the engaged citizen: civic agency & civic engagement'**. Finally, the effects that Gielen and colleagues divided into 'experiential values' and 'cognitive effects' are largely combined by Crossick and Kasznska under the term **(v) 'the reflective individual'**.

Finally, we also use a Bourdieusian approach to take into account the indirect effects of culture. Just as consumers claim not to be influenced by the hyperproductive advertising industry, cultural consumers may also be unaware of many of the effects that culture has on them. When attempting to define the value of culture, it is therefore not sufficient to only take into account the effects observed among users of culture. However, this approach, used among others by Gielen et al. (2014) and Crossick and Kasznska (2016), is nevertheless encouraged, as much of the research into the effects of culture is based on the direct experience of culture consumers. Although this approach is very valuable for highlighting the direct effects of culture, the values of culture would be narrowed if literature were researched exclusively from this perspective. The capitals with which Bourdieu works (economic, cultural, social, and later also psychological (Dóci, Spruyt, De Moortel, Vanroelen, & Hofmans, 2023)) are universal in nature, which means that they are not exclusively applicable to a single individual but are also easier to interpret for social groups. Moreover, the capitals are mutually transferable.

Viewed in this way, culture can not only have a direct effect on the user, but also an indirect one, by first being converted into another type of capital or domain before exerting its influence on the culture consumer. Imagine, for example, someone who regularly went to the theatre as a child with a parent. Through these repeated visits, the child develops a deep knowledge of plays, theatre jargon and the social habits that characterise the world of theatre. This familiarity with the culture and its associated 'shared symbols' later facilitates

the establishment of contacts within the theatre community, for example by engaging in informal conversations with directors, actors or programmers. Through this network, this person eventually succeeds in obtaining a position as a programmer within a theatre company. Here we see how cultural capital (knowledge of theatre and the built network) is converted into social capital (useful connections), which in turn results in financial capital (the acquired job). In addition, it can be argued that this allows this person to work in a sector that they find valuable, which contributes to a sense of satisfaction and mental well-being, or psychological capital.

If we interpret the convertibility of cultural capital in terms of the effects of culture, we again arrive at a number of categories into which these effects can be divided: **(i) economic** capital, **(ii) social** capital and **(iii) psychological** capital. More important than this subdivision is Bourdieu's crucial idea that effects are transferable – which is why he speaks of types of capital that are mutually convertible – and, moreover, not exhausted after a single transfer. An effect from the social domain on the economic domain can therefore also be the result of cultural consumption. Although we divide the value of culture into several domains, it is important to recognise that these domains are not separate from each other, but should rather be regarded as interconnected. In terms of research, such an impact path can only be determined in a space that is completely closed off from external social influences. However, given its complexity and ethical implications, this type of research is not available. We can, however, be extra alert to the long-term effects of culture, as there is a greater chance of spillover or trickle-down between the different domains. For this reason, we pay explicit attention to long-term effects in addition to short-term effects during data collection. We do this because short-term effects, such as inspiration derived from a piece of music or the social connections formed during an art class, are clearly the result of cultural participation. Long-term effects, such as the impact of cultural participation during youth or the transfer of culture from parents to children, are less easy to measure because they can have an impact in different domains simultaneously. That is why we are more flexible in the conditions for data collection for long-term effects than for short-term effects.

As shown in Table 1 , we synthesise four domains from the four core studies mentioned above, into which the short- and long-term effects of cultural participation can be divided. We start from Bourdieu's capitals and distinguish **(i) an economic domain** and **(ii) a social domain**. Finally, these domains are also mentioned in the literature reviews by Matarasso (1997), Gielen et al. (2014) and Crossick and Kasznska (2016), although Matarasso's solely focuses on social effects. We chose to use the interpretation of Gielen and colleagues, and not the one

of Matarasso, for the social effects. Elements such as 'personal development', 'imagination and vision' and 'health and well-being', which Matarasso places under social effects but Gielen and colleagues do not, are placed by us within the **(iii) health domain**, consisting of mental and physical health. We interpret effects within mental health as effects that have impact on issues such as resilience, optimism and hope. Note how the interpretation of 'cognitive effects' from the work of Gielen and colleagues partly corresponds with our interpretation of the health domain. We also distinguish a **(iv) cognitive domain**. Unlike Gielen and colleagues, we limit this domain to knowledge, skills, creativity and broadening of horizons. This is closely related to what Crossick and Kasznska understand by 'the reflective individual', with the difference that skills such as mathematical insight through the practice of music for example can also be included. In our analyses, we are looking for measurable cultural expressions, so the focus is mainly on extrinsic and semi-intrinsic values of culture Van Maanen (2009, p. 150). Apart from the fact that cognitive effects (such as broader knowledge and reflection) can contribute to different experiences and perceptions of art, the purely intrinsic or 'experiential values' distinguished by Gielen and colleagues are therefore less prominent in our analysis.

Table 1 provides an overview of the different types of outcomes we are studying in relation to the question of the value of culture. When discussing the different outcomes, we will have to take into account one additional distinction that cuts across all thematic focuses, namely the difference between voluntary and compulsory cultural participation. In school contexts, for example, pupils often participate compulsorily in all kinds of cultural initiatives, ranging from very formal to very informal forms of cultural education, and from ex-cathedra lessons to very active types of cultural participation. These different types are also found in leisure activities; however, what distinguishes compulsory participation from more voluntary cultural participation is the participant population and their initial attitude towards culture, which (certainly prior to participation) will often be more negative. We will have to take this into account when interpreting the results. When discussing the results, we will therefore always indicate whether the form of cultural participation was compulsory to a certain extent.

Table 1. Areas in which culture can be of value

Areas	Matarasso	Gielen et al.	Crossick & Kasznska	Bourdieu
Economic	/	Economic effects	Economy	Economic capital
Social	Social cohesion	Social effects	Communities, regeneration and space	Social capital
			Civic engagement and involvement	
	Self-determination	Experiential values		
	Local image and identity			
Health	Personal development	Cognitive effects	Health	Psychological capital
	Imagination and vision	(Mental) health effects	The reflective individual	
	(Mental) health and well-being	Experiential values		
		(Physical) health effects	Health	
Cognitive	/	Cognitive effects	The reflective individual	/
		Experiential values		

4. Method

The syntheses by Matarasso (1997), Gielen et al. (2014) and Crossick and Kaszynska (2016) provide valuable background information as a frame of reference for our research. However, the data from the most recent study are already more than 10 years old. Furthermore, the three studies are based more on a narrative review of existing research. In other words, they do not claim to be exhaustive, but focus on the most important findings of key publications. These key publications could, but do not have to been published in peer-reviewed scientific journals.

This study aims to conduct (1) a systematic literature review, based on (2) peer-reviewed articles that (3) were published between January 2010 and April 2024. Each of these characteristics is important and requires justification.

A systematic literature review aims to study all studies published in a particular domain or field. Review studies always face a problem of selection bias: studies on effects or impact are

more likely to be published if an effect is actually found. Although scientists have been increasingly encouraged in recent years to also report so-called zero effects – studies in which no effect is found – we know that in practice this often happens less frequently. If then, a review study does not take all relevant studies into account, the problem only becomes larger. For this reason, we want to focus on all relevant studies.

We also focus on peer-reviewed articles. This ensures that proper quality control has been carried out and that we are searching within a clearly defined universe. Studies that have not undergone peer review often only appear on local websites and are therefore difficult to find systematically. The choice of peer-reviewed articles is therefore not so much a choice against specific studies, but rather a logical consequence of the systematic design of our study.

Finally, our goal is to produce a state-of-the-art study. To this end, the observation period will run until the start of our research (2024). We will start the observation period in 2010. This will allow us to accurately assess whether our method is at least successful in finding the studies discussed in previous reviews. In that respect, the period 2010-2014/2015 serves as a kind of control period.

Based on the above considerations and objectives, a concrete search strategy was drawn up. It started from the interpretation of the concepts of 'culture' and 'value' as used in the studies from Table 1 . The combination of a time span period of 14 years and the many interpretations that the word 'culture' carries with it, results in an enormous number of potentially relevant studies. Strict conditions are necessary to avoid as much irrelevant research as possible from our data collection. Specifically, we extracted from the 'Web of Science' database all articles that, in their title (TI), mention (1) culture(types), (2) effects and (3) a relevant domain. Research in which (2) effects were mentioned in the abstract (AB) or keywords (AK) was also included. Taking into account the most common terms from the preliminary study, this resulted in the following searchstring:

```
*(1)* (
  TI = (
    "Cultur*" OR "Art" OR "Arts" OR "museum*" OR "Concert*" OR
    "Heritage" OR "performing arts" OR "Theatre*" OR "Painting" OR
    "Playing music" OR "Reading books"
  )
)
*(2)* AND
(
  AB = (
    "Effect*" OR "Impact*" OR "Improve*" OR "Promote*" OR "Decline*" OR
    "Influence*" OR "Enhance*" OR "Change*" OR "Worsen*" OR
    "Develop*" OR "correlat*" OR "associat*"
  )
  OR TI = (
    "Effect*" OR "Impact*" OR "Improve*" OR "Promote*" OR "Decline*" OR
    "Influence*" OR "Enhance*" OR "Change*" OR "Worsen*" OR
    "Develop*" OR "correlat*" OR "associat*"
  )
  OR AK = (
    "Effect*" OR "Impact*" OR "Improve*" OR "Promote*" OR "Decline*" OR
    "Influence*" OR "Enhance*" OR "Change*" OR "Worsen*" OR
    "Develop*" OR "correlat*" OR "associat*"
  )
)
*(3)* AND
(
  TI = (
    "Economic" OR "Financial" OR "employment" OR "Economy" OR
    "value" OR "capital" OR "Wealth" OR "Social*" OR "Identity" OR
    "Communit*" OR "Collectiv*" OR "Solidarity" OR "Psychological" OR
    "Health" OR "Wellbeing" OR "Reflecting" OR "Imagination" OR
    "Self-esteem" OR "Resilience" OR "E.Q." OR "Emotional intelligence" OR
    "Stress" OR "Agression" OR "Depressed" OR "Depression" OR
    "Cognitive" OR "Knowledge" OR "Intellectual" OR "Memory" OR
    "Creativity" OR "Physical*" OR "Sleep" OR "Fitness" OR "Energy"
  )
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Applied to Web of Science and filtered for English-language articles, this searchstring yielded 21,514 results in the first round. During the reviewing process, we then filtered out frequently recurring terms that fell outside our scope, the main ones being 'cell culture' and 'business culture'. This ultimately yielded a collection of 18,013 articles.

The results of the literature search were then integrated into an EndNote library. Duplicate entries were removed. The data was uploaded to ASReview LAB. ASReview LAB is a free open-source machine learning tool developed by Utrecht University (Van De Schoot et al., 2021). Despite the relatively young nature of the tool, it has been well received and studies – see van Dijk et al. (2023) and Wolcherink, Pouwels, van Dijk, Doggen, and Koffijberg (2023) – confirm its added value. The tool assists in screening and systematically labelling an extensive collection of textual data. Based on the abstracts, a manual decision is made as to which literature is relevant for inclusion in the further analysis. The algorithm, which is initially fed with at least five relevant and five irrelevant articles, learns from this process and then predicts which unlabelled article is most likely to be found relevant. It does this using the Naive Bayes classification technique. With this method, words in the abstract are scored based on how often they occur in relevant articles. Words that occur more frequently receive a higher score, while less frequent words receive a lower score. To predict the relevance of abstracts, the scores of all words are combined. The abstract with the highest total score is then considered the most relevant and displayed next. When using this tool, it is important to consider the final criteria that are applied. That is to say: the number of irrelevant articles in a row that are allowed before the assessment is stopped. Based on research by Wolcherink et al. (2023), we set a final criterion of 100 consecutive, irrelevant studies.

In the first round of testing, only studies from the period 2010-2014 (n= 3,672) were analysed using ASReview. This enabled us to check how many studies from the reference study "The value of culture" by Gielen et al. (2014) matched our search string, combined with the Naïve Bayes classification technique and a final criterion of 100 irrelevant studies. Because both studies pursue the same goal and have an overlapping period of four years (2010-2014), a comparison was possible. We set a minimum match of 50%, which was achieved, as 10 of the 18 peer-reviewed studies were included in our database[1]. To prevent the algorithm from getting stuck on one domain, four algorithms were created in the first round: one per domain.

[1] Only taking into account studies published on Web of Science.

Table 2. Results of the 2010-2014 analysis round

Domain	Assessed studies	Relevant studies
Economic	518	33
Social	600	51
Health	493	58
Cognitive	138	16

The results from Table 2 were then used as input for screenings of the entire dataset. The results of this are presented in a simplified version in Table 3. Because the screening of the data between 2010 and 2014 showed that narrower search criteria result in a more efficient operation of the algorithm, the domains were divided into subcategories in practice in order to enable more targeted searching. For clarity, we show the cumulative results here and will discuss the subdivisions in more detail later. The reason why the number of studies assessed decreases as the table progresses, has to do with the order in which the domains were reviewed. During the review process, studies relevant to other domains were also noted. Domains that were reviewed later could thus rely on an algorithm that was more strongly fed at the start of the review process.

Table 3. Results of the 2010-2024 analysis round

Domain	Assessed studies	Relevant studies
Economic	992	198
Social	939	120
Health	654	153
Cognitive	667	113

A total of 5,001 abstracts were assessed for relevance, of which 535 were ultimately deemed relevant. In a later phase, these 535 abstracts will undergo a final assessment based on the full text.

In addition to the check based on the work of Gielen et al. (2014), an additional check was carried out by having random datasets screened by a second assessor. After a short training session to align the inclusion criteria, both assessors screened the abstracts independently

of each other. The agreement was consistently above 80%. In addition, checks were made for possible selection bias that could arise when the reviewer sees the name of the author or the journal. To prevent this, ASReview hides this information.

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