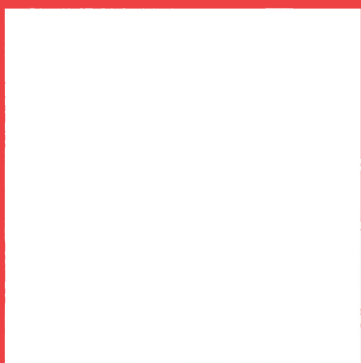




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European Colloquium on Culture, Creativity and Economy (CCE) Working Paper Compendium







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Photographs by Brian J. Hraes

The papers in this Compendium were first presented at the 5th CCE in Seville, Spain. The organizers of CCE would like to thank Tanja C. Maehlum for her outstanding work behind the scenes in arranging the conference venues, restaurants, and tours in beautiful Seville.

Context

In recent years, myriad links between culture, creativity and economic practice have become major topics of interdisciplinary debates. There is a growing consensus that the intersections between these spheres, and symbolic and culturally embedded values in particular, pervade the global economy. Culture is not confined to artistic practice or heritage, nor is creativity confined to networks of creative workers and entrepreneurs: culture and creativity are practiced by workers and individuals in a range of occupational, institutional and geographical settings. Indeed, far from being restricted to global cities and urban settings, a growing body of research highlights the presence and uniqueness of cultural and creative activities in suburban and rural settings and across the Global South. Moreover, digital technologies and processes of globalization continue to create, destroy and restructure the markets and conditions under which cultural production, intermediation and consumption are undertaken and experienced. These are in turn underpinned by a plurality of micro-spatialities and micro-processes through which the dynamics and spaces of culture and creativity emerge.

Together, this underlines the importance of paying critical academic attention to the particularities of the different social, political, technological and cultural models that enable, hinder or displace the creative and cultural economy. For research and policy, there is a strong need to generate nuanced and tempered accounts which understand both the potentialities and limitations involved in the intersections of culture, creativity and economy. There is a need to pursue new research avenues that not only encompass but go beyond critical engagement with policies. For example, a “critical agenda on critical approaches” might unveil significant aporias and pitfalls in the ways we study the webs that tie culture, creativity and economy together. More than ever perhaps there is a need for critical and radical academic debate that addresses questions about the value and values inherent in culture and creativity; questions surrounding the ownership and marketization of culture and creativity; and the dynamics of cultural and creative spaces, production and work.

CCE Five Years Later

Over five years, the network of researchers has expanded to over eighty members who come from over fifteen countries - within and beyond Europe - and from a range of disciplines including geography, sociology, urban studies, economics and business. CCE is about developing, expanding and nurturing existing and emerging networks, and it's about observing and participating in ongoing discussions about contemporary and emerging research topics, theories, concepts and empirical developments. Many researchers have met for the first time at a CCE event and these interactions have produced a range of collaborations, grant applications, research projects, related events such as conference sessions, workshops and guest lectures and publications like those in this Working Paper Series. For participants, the event is a yearly opportunity to not only frame and contextualize knowledge, but also to de-contextualize knowledge: to get away from their day-to-day operations and to be able to test their arguments among peers from distant but related departments and institutions.



Themes of research

After five years of CCE, a number of themes have emerged. Several of these themes are prominent in the working papers that make up this compilation.

The concept of valuation. Each year has brought new elements and evidence to this unfolding story from the growing demands on producers and consumers to engage in practices that co-create value and crowd-funding, to the emergence of new actors and roles for curators. The spatial mechanisms of value creation have also been explored, with a focus on how public space, public cultural assets and cultural heritage contribute to brand building in industries such as food and fashion, as well as urban tourism and place branding.

Labour dynamics in the creative economy. Researchers continue to engage with the broad theme of creative labour from a range of perspectives and scales. Engagement with themes such as the working conditions and subjectivities of entrepreneurs has been nuanced over time, new and interrelated issues such creative practice, aesthetic labour, co-working and co-working spaces, intersectionality, resilience, multiple identities and multiple motivations have

also been discussed. Taking a critical perspective, the risks associated with this type of work have also been explored.

Methodological approaches to studying creativity. Many researchers have taken the opportunity to turn inward to think about how we as researchers ‘approach creativity’ through data collection methods and analytical techniques. These have included innovative visual methods, as well as tackling the challenges of studying actors and processes, such as bloggers, operating in virtual spaces or on digital platforms.

Creative industry policy. We also have considered the role of the researcher beyond academia and in the ‘real world’ in terms of developing local, regional and/or national policy. The increasingly contentious imperative to create and demonstrate impact has also been discussed. Recently, this research has expanded to include discussion of the intersection between platforms, policies and institutions, such as issues relating to broader institutional frameworks which regulate the ‘evolution’ of cultural and creative economies within different regional, national, global contexts, concerning, for example, formal and informal knowledge in the cultural economy and the role of the educational systems.



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Art, politics and museum spaces:

Constructing a colonial and
postcolonial identity through
the planning of the M+
modern art museum in Hong
Kong

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Introduction

The fields of arts and social sciences have shown a great interest in museum spaces in relation to urban policies and creative industries (Raco and Gilliam 2012), power and cultural politics (Bennett 1995), social environments (Chang and Lee 2003), the regeneration of memory (Cooke and Jenkins 2000) and nationalism (Denton 2005; 2015). The interactions between these concepts help us to understand the rationale behind the yet to be constructed museum M+, the first contemporary art museum for the people of Hong Kong built in the West Kowloon Cultural District (WKCD). As part of the West Kowloon Reclamation (WKR) project, 340 hectares of land was designated between the early 1990s and 2003, but the initial idea came from a late 1970s government development blueprint that never materialised. From the town planning perspective, this project is regarded as one of the most significant culture-led urban development projects in the world (Raco and Gilliam 2012). However, due to financial and political reasons, the project has already been delayed on several occasions, questioning whether the museum will ever be built. More specifically, why should it be built? What justifies its place alongside other equally large museums in other parts of the world? This paper argues that Hong Kong presents a specific case because of its colonial identity, the political history of West Kowloon and the ongoing discord between local politicians and the museum management team.

This paper draws on pilot interviews with the executive members of the management team as well as ethnographic research carried out in Hong Kong and proposes a research agenda that makes connections amongst cultural institutions, politics and regional economic development in the eastern and western contexts.

The rest of the paper is structured as follows. The next section considers the basic understanding of how arts have been used traditionally to communicate national identities with reference to Hong Kong. It then discusses the history of the WKCD and the M+ to establish the political origin of the development. The paper then discusses the preliminary findings and presents three challenges for planning the M+, concluding by highlighting the importance of constructive dialogue between local politicians and the museum management team to ensure the realisation of this museum project.

Creating a Hong Kong identity through arts

Historically, the arts have been deployed to create national identities. For example, despite France having been through five republics in the last three centuries, paintings have been used for ‘nation-building’ (Bauman 2011, 98). Similarly, many state-owned museums in mainland China aim partially to legitimise the power of the Chinese Communist Party and



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show the country's rising status in the world (Denton 2015; Qin 2004). In the Hong Kong context, the dynamics of the creative arts tend to be reduced by western scholars who seem to evaluate the local art scene using western standards. For example, in *A New Art from Emerging Markets*, Robertson (2011), an expert on art business studies at Sotheby's, introduces the notion of 'periphery spaces' to the international art market using controversial postcolonial and Eurocentric approaches. Robertson defines Hong Kong as an influential art 'conduit' safe-guarded by the reclamation and entrepreneurial urban-led cultural development project underway in West Kowloon. However, Robertson rejects the postcolonial city-state (grouping together Singapore, Hong Kong and Dubai) and argues that it lacks the 'means to safeguard indigenous cultures or develop national art economies' (Robertson 2011:185). In other words, Robertson stereotypes the postcolonial city-state by treating it as a less dynamic space inflicted by its postcolonial imitative heritage. As a result, the local context of art is overshadowed by the profits art generates.

Nonetheless, the Hong Kong government has long desired to create a cultural and political identity presenting a local Hong Kong identity through art and visual culture. As a result, the government launched a proposal in 2003 to develop the WKCD into a 'world-class arts, cultural, entertainment and commercial district' (The Legislative Council Commission 2008, 1). The concept of the M+ as a cultural institution emerged subsequently in 2006. The two axiomatic ideas are to create a 'new perspective' that 'requires each idea or exhibit to be linked to the experiences of its current - and future audience', and the 'Hong Kong Perspective', which 'creates an audience experience that is unique from a Hong Kong social and cultural standpoint' (The Legislative Council Commission 2008, 5). Since the collection process began in 2012, the museum curators have acquired more than 5,000 objects, and this number continues to grow. Several that will be displayed in the M+ such as Hong Kong's iconic neon street signs, which date back to the 1970s, exemplify how the local culture will be preserved. The museum collections will create an opportunity for others to learn about Hong Kong, as well as how Hong Kong sees mainland China and the world at large.

The political history of the WKCD and the M+

During the 1970s and 1980s, British-ruled Hong Kong witnessed rapid economic growth. Infrastructure such as the Kwai Chung Container Port and Hong Kong Kai Tak International Airport approached operating capacity. That led to the Port and Airport Development Strategy (PADS), by which the Hong Kong government aimed to create expansions for the container port and build a new airport (Ng 1993). Due to high construction costs and Hong Kong's uncertain political future, the blueprint was shelved indefinitely.

1. New Airport, Airport Railway, Lantau Link, Western Harbour Crossing, North Lantau Expressway, Route 3 (part), West Kowloon Expressway, West Kowloon Reclamation, Central Reclamation (Phase 1), Tung Chung New Town (Phase 1), source from the Hong Kong government website www.info.gov.hk/archive/napco/index-e.html.

Further, after the 1989 Tiananmen Square protest in Beijing, Hong Kong citizens were concerned about the political uncertainties the mainland Chinese government might bring to Hong Kong after the 1997 handover. Political uncertainties coupled with economic downturn resulted in many wealthy families emigrating to countries such as the US, Canada, Australia and New Zealand. To restore political and economic confidence, the Hong Kong government introduced the Hong Kong Airport Core Programme (ACP) in October 1989 (Howlett 1998:247-253), a large scale infrastructure project that included ten construction projects¹. Since the infrastructure project illustrated a 'rosy' picture of Hong Kong's future, it was also branded as the 'Rose Garden Project' (Cheng 2013). The project made a significant boost to the local economy, and from 1990 to 1997, it led to one of the most prosperous periods ever in Hong Kong. However, because the project was created under the British government, it can also be argued that the colonial to postcolonial transfer of Hong Kong has made the WKCD and M+ inherently political.

As the 'one country two systems' framework will end in 2047, the M+ will be one of the last opportunities for Hong Kong to create a cultural icon for future generations. However, making this project a reality is not an easy task.

Challenges for the planning of the M+

Initial findings suggest that there are three key challenges in the planning process of the M+. First, since 2012, the Legislative Council of Hong Kong has demanded that the objects acquired for the museum to go through an approval process. This is due to the initial controversial acquisition of the M+ management team, namely the part-donation, part-purchase of Uli Sigg's collection of contemporary mainland Chinese art with sensitive political implications. Lars Nittve describes that '[i]t is a very sensitive thing for politicians to be involved in cultural content' (Tsui 2015). Arguably, local politicians show a lack of understanding concerning the representations of art and underestimate the importance of building a cultural icon for Hong Kong. Other similar, well-known projects include the Tate Modern in London (of which Nittve was the founding director), Centre Pompidou in Paris and the Museum of Modern Art in New York. As such, Hong Kong can perhaps be branded using the Bilbao effect, which means that a museum construction can be an essential driver of city prosperity (Ockman 2004). Due to the extended delayed process of the museum's construction, Nittve has since resigned and will only stay as an external adviser for the project from January 2016.

Second, it is also important to acknowledge the failure of the museum management team to build and present a clear case for the museum's significance regarding Hong Kong's past, present and future. Perhaps the management reveals a lack of understanding concerning the local bureaucracy, which is tied to Hong Kong's colonial and postcolonial roots. The

ongoing disagreement between local politicians and the museum management has side-tracked any possibility of implementation. During an interview in 2016 in Stockholm with the authors, Nittve acknowledged that Hong Kong is a special place because of its colonial and postcolonial heritage, introducing a complex space in which no less than three languages (Cantonese, English and Mandarin) intermingle and need to be taken into consideration. Nittve further pinpointed that the stereotypic western artist ego is impossible to translate into the Hong Kong and mainland China contexts where artists work in-between media, thus introducing art closer to the western definition of visual culture. Because of these issues, the Sigg Collection would need to be re-curated beyond the level displayed in the shows *Right is Wrong: Four Decades of Chinese Art from the M+ Sigg Collection*, *M+ Sigg Collection: Four Decades of Chinese Contemporary Art*, and *Chinese Whispers: Recent art from the Sigg & M+ Sigg Collections* in order to highlight the specificities of the art of the city of Hong Kong and China to the world.

Third, close attention must also be paid to the fundamental cultural differences in Hong Kong and the mainland regarding historical and political narratives. A closer examination at the original ideas for the M+ proves that the acquisition of the Sigg Collection's contemporary mainland Chinese art signals the departure of the M+ project from its initial purpose as a museum for Hong Kong and Hongkongers' distinct Cantonese and colonial heritage. Current members of the museum management team mostly come from the western or mainland Chinese art background that fails to acknowledge the subtle cultural references of Hong Kong art and visual culture. The politically sensitive M+ Sigg Collection could not be exhibited in mainland China due to its controversial contents. In this regard, during a conversation in 2014 Umeå with Pi Li, the senior curator of the Sigg Collection stressed the importance of Hong Kong being a space for freedom of expression where the M+ Sigg Collection should belong. While the authors acknowledge Hong Kong still maintains the notion of free speech under the 'one country two systems' framework, having the Sigg Collection in the foreground of the M+ which represents the mainland seems to overlook the Hong Kong art culture. Subsequently, the Hong Kong government's museum advisory board has been defending the initial presentation of the M+ museum with Hong Kong culture as its core narratives.

Conclusion

This paper has illustrated that the key concept of the M+ is to use its growing collection of contemporary and visual arts to create a Hong Kong identity through the local lens of Hong Kong. We argue that Hong Kong's transfer of sovereignty from Britain to mainland China has made the planning of the M+ culturally and historically challenging. While the British government played an important role in shaping some of Hong Kong's current identity, many have overlooked how the WKCD itself originated from an unimplemented infrastruc-

tural project dating back to the end of the 1970s. It has already been around a decade since the planning began, and whether the museum will be built remains uncertain. We also acknowledge that the current Sigg Collection portrays a contemporary art history per the mainland Chinese, rather than from a Hong Kong perspective.

Essentially, we encourage the politicians and curators to engage in a transparent and constructive dialogue to ensure this contemporary art museum will be built while yet possible. Not only would the collection become insignificant to the citizens of Hong Kong, but without a physical space and place in West Kowloon, the city would also miss a significant opportunity to contribute to the global art world.

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DE ABRIL DE 2014
L'AVANTAGE



Culture Intensive Business Services*

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Introduction

Over the last decade, the cultural industries have enjoyed increased attention from academics and policy makers. However, most research has tended to focus on the cultural industries as a separate group of industries, and less has been said about how the cultural industries influence or are entwined with the rest of the economy. Inspired by the term knowledge intensive business services (KIBS) this idea paper introduces the notion of culture intensive business services (CIBS) to conceptualise the professional and commercial services that the culture industries provide for the 'conventional' economy. In the same way as KIBS are seen as drivers in the formation and distribution of new knowledge in a post-Fordist knowledge economy, are CIBS doing the same? Are the business services that diverse cultural workers and firms provide as important and worthy of separate study as the KIBS literature suggests is true of services such engineering consultancy or management accountancy?

Cultural industries are concerned in one way or another with the creation of marketised products whose value rests primarily on intangible assets. Much can and has been said about the economic value these industries create and the geographies that support them. However, the cultural industries (and indeed creative industries) discourse has tended to largely ignore or undertheorise the ways in which the outputs, ideas, and workers associated with cultural activities and industry spillover to other areas of the economy. In order to better address this issue we are interested in looking more closely at those areas of the cultural industries and cultural work that explicitly market and sell business services that are based on cultural (and perhaps even creative) knowledge. In this project we want to take a closer look at how this unique expertise is transformed into commercial services, and how this might be affecting the 'traditional' economy.

Knowledge and cultural intensive business services

Knowledge intensive business services are provided by private sector firms providing expert knowledge to firms, and are thus seen as a vital source of information, advice and specialized knowledge for other industries (Toivonen, 2004). KIBS are seen as an indicator of the more general structural changes projected by the so called knowledge economy in that large, vertically integrated firms outsource activities formerly performed internally (to increase productivity, flexibility and growth), leading to a formation of small specialized service firms. However, the growth of KIBS cannot only be ascribed to outsourcing activities. KIBS are often seen as a driving force behind the spread of new knowledge in the

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innovation system, through information and communication technologies (ICT) and new ways of organizing industrial activity. A demand for new types of services and knowledge is probably one of the most important factors explaining the growth of the firms and employment in KIBS.

Culture intensive business services is a subgroup of the KIBS-segment, but CIBS are provided by firms and individuals firmly rooted in the cultural industries. However, KIBS and CIBS have the same defining features – they sell expert knowledge to other businesses. CIBS services are reliant on professional knowledge. There have always been firms selling cultural products and services to a professional/business market. This can be seen as a CIBS core and includes advertising, industrial design, architecture, film/photography, directors making commercials etc. However, as cultural inputs into other areas of the economy become ever more sought after and as cultural workers try and find ways to survive an increasingly precarious existence, we see a growing market for cultural service providers outside this core and increasing willingness for cultural workers to use their knowledge in other areas of the economy. Examples of this could be artists doing side-line jobs: e.g. musicians dj-ing in a shop or ‘curating’ playlists for websites; artists running creativity workshops; interior designers home styling for real estate agents; fashion designers working as stylists; (street) artists working with city planners etc. Increased demand from other sectors as well as cultural workers seeking to commercialise their skills elsewhere than the cultural economy can be seen to led to an economy saturated with cultural/creative professionals. We are interested thus in CIBS in 2 senses: (i) as a sector that sells B2B services with a high strategic and value creating aspect; (ii) as a set of activities that links cultural workers to other areas of the economy and whatever that might mean for their livelihoods and cultural work as well as what it might mean for the sectors they find their services being used in.

Why is interesting to talk about CIBS?

- We hypothesise that the services CIBS firms provide are central to the (co)creation of value (value not simply innovation) in sectors where the symbolic, aesthetic and cultural aspects of products and services are at the leading edge of value creation.
- We hypothesise that whilst these activities might be marginal in terms of numbers of workers or turnover they are very likely to the importance to the construction and spread of knowledge throughout the economy.
- We hypothesise that the services provided might be central to transition dynamics within the wider economy as it moves to ever more symbol and sign laden forms of competition.
- We hypothesise that whilst such services are traditionally viewed as a spillover from the cultural arena or as sideline extra income to cultural actors they should in fact be seen as important activities in their own right and treated as such: they are not just sideline odd jobs or marginal activities to the real work of creating cultural objects and forms but central to how the cultural industries and cultural fields work.

- Culturally intensive business services are poorly understood within the KIBS framework which tends to focus on technical or ‘professional’ (read accountancy and legal services) services;
- Culturally intensive business services are poorly understood within the cultural or creative industries framework which tends to content and product development within cultural markets and sectors: e.g. the development of music within the music industry etc.

How to look at CIBS?

KIBS are usually studied through the lens of the firm and the firm as a service provider is the usual unit of analysis. Given that CIBS are not always offered by firms but also by individuals moonlighting from the cultural industries or by cultural workers embedded in other types of firms or industries we suggest that we should move away from only looking at firms and instead complement this with an understanding of the individual workers involved in offering culturally intensive business services.

There are various types of cases we are thinking of looking further into:

- How could CIBS be measured in a way that policy might respond to? Firm counts? Dynamic mapping?
- Case studies of firms that offer a flexible range of culturally intensive business solutions: e.g. how the Norwegian architecture firm Snohetta offers brand development as well as architectural services and how the two foci have been seen by the firm to feed into each other.
- Case study of how CIBS work in the computer game industry. Here game’s aesthetics and logic can be utilised outside a gaming realm. Either through so called gamification, i.e. the application of game-design elements and game principles in non-game contexts, or serious-games, where games are designed for a primary purpose other than pure entertainment, such as education, planning, risk-management etc.
- More ethnographic approaches that study cultural workers experiences of working outside the cultural industry zone.

Digital fabrication in less developed regions*

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Digital fabrication and sharing economy

Cities face major difficulties in creating economic opportunities in a framework of high competition, shrinking markets and reduced resources. The work of experts from all over the world points to new forms of production in the post-industrial city, in particular a collaborative mode of production based on the sharing of knowledge and skills, which has begun to emerge in a number of different industries. In envisioning the possibilities of economic development, it is important to look at the potential of these new forms in the future of urban economies. Sharing economy, peer production, collaborative consumption, maker-spaces are all terms that pertain to a new collaborative economy that is emerging out of the crisis of corporate capitalism in its neoliberal version.

Overall, the sharing economy is a new mode of production defined by the use of common resources and the ethic of sharing as a source of value. The collaborative practices of the sharing economy have been either celebrated as signals of a new economic system to come with the potential to become dominant, or interpreted as a marginal phenomenon contributing to cultural and social change but whose consequences for the economic system are scarcely relevant.

This paper focuses on a particular segment of the sharing economy, the so-called making, or digital manufacturing. This term is usually applied to all productive practices bridging the DIY (Do It Yourself) culture with the sharing principles and ideology and mixing digital elements with material ones. The makers' culture is centred on open technology that should be accessible to anyone; it is focused on the development of community values and on the production of responses to people's needs, and aimed in the end at improving society as a whole. One of the most important characteristic of the digital fabrication is that it is based on technologies, both additive and subtractive, allowing a small-scale production based on rapid prototyping. For example, an additive technology is 3D printer, able to print a physical object starting from a three-dimensional image of such object. An example of a machine based on subtractive technology is laser cutting, which allows the operator to cut flat sheet materials such as wood, plastic, fabric or paper. These transformations have led some observers to envisage a new industrial revolution that will change the way people and firms design and produce objects and consumer goods and allow the shifting of production from enterprises to individuals (Micelli, 2011). Rifkin (2014) underlines that such technologies reduce dramatically the marginal costs of production and that they do not follow the economic rules of scale economies. On the contrary, digital fabrication machines enable the shift from an economy of scale towards an economy of scope, allowing single individuals to prototype and produce even a single object at a low cost.

Digital fabrication in the urban contexts

In recent times the urban landscape of major urban areas has been dotted by labs and collective spaces where a broad range of objects are produced thanks to fast prototyping technologies; these spaces are usually called fablabs or maker-spaces. In those spaces, the sharing of information, knowledge and mutual help is particularly encouraged. These spaces are therefore not only production places, but, more importantly, spaces where interaction takes place, where people exchange ideas and, also, where social cohesion is built.

Usually, maker-spaces are concentrated in large cities based on advanced, post-Fordist economy, where not only people concentrate, but also knowledge and creative economy, talents and social capital: in the Berlin region, to make reference to one of the most known example, 53 innovation labs have been counted (Brinks & Schmidt, 2015); in Milan, in the inner city, 8 maker-spaces have been founded in the last 3 years, while in Barcelona the project “FabCity” (<http://fab.city/> last visited on 18/11/2016) planned to open a fablab in each of the 10 urban districts. Finally, the global network of Fablabs connected to the first MIT one, is now made by more than a thousand spaces (<https://www.fablabs.io/labs> - last visited on 5/11/2016), most of them placed in large urban areas.

A recent stream of literature, acknowledging the spreading of these spaces in major cities, investigates the impact of the digital fabrication in contexts characterised by a mature post-Fordist economy (Manzo & Ramella, 2015; Micelli, 2011, 2016; Schmidt, 2015). A recent research on maker-spaces in Milan found out that makers are very well embedded in the local context: although with some criticalities yet unresolved, they have a good social capital allowing them to have many collaborations; they have been able to create various kinds of institutions (university labs; representative bodies; ...) in order to protect their interests and to spread their ideology; they have been acknowledged by the local government as actor of the local development (Colleoni, d’Ovidio, & Vicari Haddock, 2015). In Italy, maker-spaces are located not only in major urban poles, but also within industrial districts (which in Italy are often located in regions characterised by a particular network of middle-small towns): indeed, the particular combination of social capital, economic environment and availability of qualified labour (often left outside the labour market because of the crisis) are the main elements allowing the rising of such places (Manzo & Ramella, 2015).

The “other” maker-spaces

If one looks at the map of the Fablabs global network, it emerges that fablabs are spreading almost everywhere, not only in global, creative, advanced economies. If the impact of digital fabrication in mature and advanced contexts is already the topic of many analyses, the consequences of the advent of the digital fabrication in less advanced economies is not yet explored by the literature: in this paper we address the possible outcome, in terms of local development, of the presence of maker-spaces in those contexts where the transition towards the post-Fordist economy is not (yet) completed. Such contexts, specialised in traditional economic sectors, even based on heavy manufacturing, are facing many difficulties in the adaptation of new structural conditions. We claim that the digital manufacturing can be a powerful driver for the local economy in these cases. We know already that the digital fabrication represents an important tool for innovation (by process or by product) in the economic activities. However, we envisage that the presence of the digital fabrication in contexts whose economy is yet not advanced can represent a strong tool for social cohesion and enrichment of the social capital; moreover, it allows the valorisation of local know-how and local manual skills. Let me discuss each issues below.

Developing social networks

First of all, digital fabrication can be an important instrument for improving local social cohesion, because it is mainly performed in shared and inclusive environments (the maker-spaces), but in particular because it needs and encourages the development of social networks based on bridging ties. Examples of maker-spaces that have become places of inclusion for disadvantaged youth are more common in the grey literature rather than in the academic journals, but nevertheless, they report that such places represent a real chance for young people living in difficult social situations. More importantly, such places make it possible to create new social ties, often with places and communities located in different, distant contexts. On this concern, we refer to the seminal works by Granovetter (1985; 1973). His legacy is not expressed only in acknowledging the importance of social relations within the cultural economy (that is not to be questioned anymore and it is much accounted), but in the exploration of the kind and the strength of ties within actors in space¹. In particular, two concepts are worth to be mentioned here. First the idea of local bridging, such as those weak ties that allow the connection between two separated (either physically or socially) communities or networks. The bridge enlarges the horizons of the whole community and it represents a very rich resources especially in terms of information. The second concept is that of social embeddedness, which is particularly clear in the case of, for instance, Silicon Valley: Granovetter and his team showed how the institutional context in the area makes it possible the high mobility and flexibility of workers which the economic success of the area is grounded on.

1. The space in Granovetter's view, although not often mentioned, is always kept into the background and it is to be understood both as physical space and as social one (Andreotti 2011).



On the one side, traditional contexts are, indeed, characterized by the presence of very strong ties, but often as strong as bonding so that the social networks become too closed and impeding to develop entrepreneurial attitude and professional projects. On the other side, makers tend to have very long (although weak) ties, developed thanks to the Internet and on-line relations. We are very aware that this contraposition can have also negative effects (for instance, it could be a problem at the very early stage of the process), however, it might have very positive spill-over on the social capital of the local community².

Maker-spaces are thus observed as places where collaborations happen, based on knowledge sharing and aimed at diffusing a culture of collective knowledge and collective work. Following this line of thought, Manzo and Ramella (2015) claim that these places are able to connect local resources with global networks: their configuration is that of a local environment, where people concentrate and interact face-to-face; however, this places are also global hubs, connecting local users, to a wider international community made by labs and teams sharing ideas, values, practices and attitude. All of this can contaminate the whole local communities where the maker-space is located.

Importance of skill

Secondly, we envisage that the implementation of the digital manufacturing in those contexts where the economy is still based on manufacturing (being it heavy one, or craft-based one) can valorise the local knowledge in terms of skills and competences. Yet, increasingly, most of manual and craft skills lost their central place in the post-Fordist economy, which is mainly based on immaterial production, but they are still present (although maybe not always employed) in less developed regions, where the economy is grounded on manufacturing activities or craft ones³. In these regions, the digital manufacturing can valorise such manual skills, even transferring part of the knowledge in other contexts. Increasingly, the use of the term “digital artisan” seems to mean exactly the convergence of these two worlds.

The debate on labour and skills is far from being a new one and since its origins reflects upon the relation between human and machine labour. In its modern version the debate draws on Gorz’s and Braverman’s thoughts (Braverman, 1974; Gorz, 1988). The debate has been focusing on the question whether machines could be able to perform every kind of activity, and whether this could mean the end of work (in both positive and negative terms). This is not the appropriate place to report the whole debate, but the rising of the digital fabrication allows to reflect upon the idea of the machine substituting the craft work, something that before was hardly imaginable. Yet, borders between digital designing and physical production of goods are increasingly blurred. Two issues are here crucial, and they are connected (Hielscher & Smith, 2014). Firstly, we could ask whether manual skill is actually needed within the digital fabrication, secondly, and consequently, we can discuss the extent to which manual competencies are needed. The digital fabrication could, on the

2. In this sense, it will be particularly important how the space is managed and organised, in order to help local makers to connect globally with other ones.

3. We are well aware that particular craft tradition in the post-fordist economies are particularly valorised (e.g. tailors for design fashion), but the majority of manual jobs reduced dramatically.

one side, reduce the need of traditional manual competences (deskilling of labour), but on the other it could require new ones (reskilling).

Regarding the first argument (whether manual skill is still needed), the debate is stretched between two edges. The first one claiming that digital fabrication allows the complete and definitive substitution of the craft skill, yet keeping the characteristic of authenticity and customisation of the “old” craft production (Rifkin, 1995). At the opposite we can find the position of Richard Sennett claiming the crucial position the craftsman occupies, in the post-fordist economy, where their competence is not only impossible to be substituted, but also it gives an added value extremely important (Sennett, 2008). Within the digital fabrication, Ree’s works are particularly interesting, as they test the necessity (or, on the contrary, the redundancy) of artisan competencies in maker-spaces. He and his colleagues have performed a series of empirical research on skill and competence in maker-space during workshops, laboratories, and learning sessions (Ratto & Ree, 2012; Ree, 2011). Ree realises that, in particular in the educational sessions, there is a particular attention in the teaching and learning of manual competences, and that should be a signal that these elements are still very important. This depends largely by the persistency of improvisation and experimentation (that are typical of the craftsman work) both in the designing of the object and, in particular, in the post-production phase. For example, in order to design a project for a 3-d printed object we have to be extremely aware of the whole productive process, so to be able to choose dimensions, shape, material to be used (all competences that often are learned by touching and literally felt by hands the object); once printed, the object usually needs to be refined manually. Ree and colleagues conclude that, even in order to 3D-print an object, one needs a significant amount of “skilful human authorship”, since, “3D printers don’t make things; people do” (Ree, 2011, pag. 60). Following Sennett’s thought a whole set of competences is needed, that has to do with the “savoir faire”, as Bourdieu claimed (1980): creativity, sensibility, a particular world vision and so on, all these attitudes that are typical from the traditional contexts and that are now crucial also in the contemporary “economy of signs and spaces” (Lash & Urry, 1994).

The second line of the debate deals with the content of the skills required for the work. One position claims that digital manufacturing encourages the once-passive consumer to become active in the productive process and, with that aim, to learn new competences: following this line of thought, we can say that the digital manufacturing supports a reskilling of the society, transforming the consumers in active makers (with new competences). This is the position taken by Gauntlett, who, in his book *Making is connecting* (2011) acclaims the practice of creating things. The opposite position is taken by those who see in the digital fabrication a deskilling process, in particular within the artisanal words, that, yet are necessary, but tend to be increasingly poor and without specific knowledge. This is caused by the same process celebrated by Gauntlett: since everyone can be a producer (a maker), the needed competences must be simpler and simpler. Wood and his colleague (Wood & Rust, 2003; Wood, Rust, & Horne, 2009) developed a series of empirical analysis in order to test such hypotheses and found out that manual competences are necessary, but also that they need motivation and commitment to

be learnt, because sometimes they are complex and need a deep training. Therefore, they found out that the process involves more reskilling than deskilling, and, in particular, the manual skills of craftsmen tend to be renewed and transferred to new generations in new environments, thus making the digital manufacturing a tool to keep such knowledge alive.

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Geography of valuation:

A real world laboratory
approach

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Introduction

In recent years we could observe a revival of cities (Florida 2002, Glaeser et al. 2001). This revival is connected to a transformation of ‘the urban’ by an augmented concentration of creative activities in certain neighborhoods (e.g. Kreuzberg/Berlin, Williamsburg/New York). These neighborhoods in central urban districts, characterized as “hot spots”, are accompanied by an “an invasion of international creative pioneers” (Holm 2013, p.171) and increase in rental prices. Additionally, these neighborhoods spread. An de Meulen and Mitze (2014) for example showed that Berlin had five isolated hot spots in 2008, which were connected to one large hot spot in 2013.

Existing arguments explain this connection of urban growth by an in-migration of creative and highly qualified into cities, driven by consumption and propensities for amenities like fancy bars, art galleries, restaurants etc. (Clark et al. 2002). However, these arguments based upon changing consumption behavior and lifestyle choices are criticized for not being able to explain how these processes transform cities as sites of production (Storper and Scott 2009).

Additionally, a view into the micro-geographies of different industries in three Canadian cities presented by Spencer (2015) showed that only creative industries were spatially concentrated, while science-based industries are spatially disperse. This divergence indicates that it is not necessarily a quite broadly defined creative class, including lawyers, researchers, managers etc. responsible for these recent transformations of cities. Instead, it seems that especially creative industries require interactions in spatial proximity.

Furthermore, the economics of aestheticization (Reckwitz 2013) and authenticity (Gilmore and Pine 2007) associated with creative industries increasingly emanate to other fields like food or craft based production. To summarize, a broad range of industries that cannot be distinguished by human capital (Glaeser et al. 2001), industry class (2009) or occupation (Florida 2002), but by their production of aesthetic associations, play the crucial role in contemporary urban transformation. Therefore, the crucial process is what Reckwitz (2013) describes as “The associative giving of meanings, which are connected to material carrier (words, pictures, sounds buildings, behaviors) and to sensual perceptions and emotions” (Reckwitz 2013, 143, own translation).

To investigate the interplay between these processes of aestheticization and urban development, we built upon classical notions that novelty is created when different knowledge is combined and these combinations take place in diverse and densely inhabited cities (Jacobs 1969, Glaeser 1999, Storper and Venables 2004). Yet, we diverge from this classical canon by arguing that the crucial process for the processes at hand is not the creation of novelty per se. Instead, it is the valuation of knowledge. By negotiation about what novelties, objects, events are of value, value is given to these entities (Hutter and Stark 2015, Moeran and Pedersen 2011).

Valuations take place in all industries. Yet, valuations require extensive forms of interactions and negotiations when trajectories (Dosi 1982) or standards (Aspers 2009) are missing. These conditions exist also in new and emerging industries when different technological approaches and designs compete (Dosi 1982, Abernathy and Utterback 1978, Audretsch and Feldman 1996). However, in industries depending on the production of symbolic associations, this uncertainty is not limited to a particular phase. Instead, its evasion of clearly defined trajectories and the resulting uncertainty is the defining entity of these industries (Reckwitz 2013).

We argue that under these conditions processes of valuation require geographical proximity as well as diversity to dispute, “what is of value”. These qualities are given in dense urban quarters. In doing so, we explain contemporary urban transformations not as a result of consumption or lifestyle choices, but by economic necessities of particular sectors, like the so-called creative industries (Pratt 2009). By investigating valuation and not knowledge recombination, our paper focuses on the selection side of evolutionary dynamics (Metcalf 1994).

We exemplify our argument that valuation leads to concentration under conditions of uncertainty by using two art fairs as real world laboratories: the Art Basel and the SCOPE. These art fairs are global market places for art. As the value of an artwork cannot be derived from its attributes or assessed according to certain standards (Aspers 2009), negotiations between exhibitors and visitors about value are the crucial processes. This setting, where value is assessed and not novelty produced, allows to distinguish processes of valuation from that of knowledge recombination. Furthermore, these fairs take place in a spatially and temporarily restricted environment, providing comparatively controlled conditions like in a laboratory experiment. Using these examples, we show that it is not the knowledge production per se that requires geographical proximity. It is the valuation on what novelty has a value.

Explanations for Contemporary Urban Growth and Geographic Fragmentation

After a phase of urban decay due to suburbanization, a revival of cities is observable since the 1980. This revival is connected to in-migration, renewal of urban infrastructures and gentrification processes. These processes are highly selective. This selectivity takes place on several levels. The first level is the level of the city. Not all cities are affected. These processes started in large cities that were highly integrated into global networks (Sassen 2001). Later, this development affected generally large metropolitan areas. The second dimension refers to the inner-city structure.

Processes of urban renewal and transformation took place in particular urban neighborhoods. Third, this development is strongly connected to the emergence of a creative class (Florida 2002) and the growth of creative and cultural industries Graham (2002).

Additionally, these processes of urban growth and geographic fragmentation seem to accelerate and become more pervasive (Florida 2002). An de Meulen and Mitze (2014) showed that creative quarters from single locations became pervasive in urban development. Potts and Cunningham (2008) showed that the importance of creative and cultural industries for urban growth rose to an extent that they themselves became a location factor for other industries, thereby accelerating urban growth. To conclude, these recent urban developments correlate with an upcoming of creative industries that are concentrated in certain quarters.

Amenities as Driver of Urban Concentrations

There are several explanations that connect this recent growth of cities with the rise of creative industries and activities. Most approaches describe a transformation of cities from places of production to places of consumption (e.g. Florida 2002, Glaeser et al. 2001, Clark et al. 2002). While traditional accounts would argue that cities grow when industries create jobs and the environment they need, which again attract people (e.g. Storper 2009), the new approaches argue that jobs follow people and therefore cities grow when they attract highly qualified and creative people. These people would find jobs, as firms would follow them or create their own firms. Therefore, policies of cities would have to focus on providing an environment that these highly qualified and creative people like.

Different strands of literature align to this argument. Glaeser et al. (2001) argue that these highly qualified are attracted by rather traditional amenities like safe streets, good labor markets, suburban homes supply, and low tax rates. Clark et al. (2002) describe cities as “urban entertainment machines” that have to provide amenities like concert halls, museums, galleries, fancy shops to attract highly qualified people. The best known is perhaps by Florida (2002). He argues that cities especially grow when they attract certain kinds of people: the creative class. He further argues that in addition to amenities, the creative class searches for places with an open and tolerant climate (Haisch and Klöpper 2015).

This literature that argues that jobs follow people is strongly criticized by Storper and Scott (2009). They argue that these accounts cannot explain how production systems evolve and how cities produce growth. Additionally, they argue that the amenities that attract people have to be produced firstly, and it is the local industry that produces these amenities. While recent accounts like Florida (2002) react to these critic and argue that a tolerant environment makes resource allocation more efficient, they do not explain why this relation seems to be more important nowadays than for example during times of Fordism.

Jacobs' Externalities and the Learning Economy

The traditional production oriented argument for the growth of cities is offered by Jane Jacobs (1969). She argues that cities are places where people “add new work to old work”, i.e. knowledge is combined and recombined. These possibilities to produce new novelty via re-combinations led Glaeser (1999) to argue that a city's growth is fostered by its diversity. Upon this literature, Frenken and Boschma (2007) argued that it is not simply diversity that fosters growth, but this diversity has to be related. When the knowledge is too distant for actors to be able to comprehend each other, knowledge is not recombined and novelty not produced (Nooteboom 1999). Therefore, this variety must be related to produce novelty as basis for growth.

Geographical proximity is necessary when regular face-to-face interaction are required, i.e. when knowledge is tacit, complex, and difficult to combine (Maskell and Malmberg 1999, Sorenson et al. 2006, Storper and Venables 2004, Menzel 2015). With the move towards a learning and knowledge economy (Lundvall 1991), it can be expected that processes of re-combinations of knowledge to produce novelty would increase. As Jacobs (1969, 1961) based her argument on interactions taking place on the streets and within neighborhoods, also the importance of places, urban neighborhoods and city quarters in which these knowledge is re-combined would increase.

Most studies support this reasoning. However, they are often based on the regional level (Frenken and Boschma 2007, Glaeser 1999). A view on smaller geographical scales shows that these assumptions not necessarily hold. Spencer (2015) compares the micro-location of science based and creativity based industries. He shows that science based industries spatially disperse and locate in suburbs and low-density neighborhoods. Thus, especially those industries that usually are connected with the learning economy are not the main drivers for the contemporary urban developments.

The reason for their spatial dispersion might be the decreased importance of geographical proximity for knowledge processes due to codification of knowledge, as knowledge codification leads to permanent spatial disembedding of knowledge processes (Sturgeon 2003, Amin and Roberts 2008). Other accounts argue that knowledge not simply spills over, but follows relations (Breschi and Lissoni 2001). Therefore, relations are important for knowledge re-combinations and not geographical proximity per se (Kogut and Zander 1992). Furthermore, studies point out that the processes that require geographical proximity vane during industry evolution. Geographical proximity is only important during particular phases, for example during the emergence of regional industries and spatial concentrations during industry maturity result from inertia (Menzel and Fornahl 2010).

While Spencer (2015) showed that science based industries are geographically dispersed, he also showed that what is concentrated in dense and diverse urban neighborhoods are creative industries. Also other studies show that particular quarters are affected by “creative pioneers” (Holm 2013).

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As a result, distinct places with a high concentration of creative industries emerge. Spencer (2015) argues that differences in knowledge production are responsible for the different geographical patterns of science based and creative industries. Creative industries need to combine and assess more divergent knowledge than science based industries, which requires more interaction. However, this reasoning does not explain, that contemporary urban restructuring is quite broader than limited to creative industries (Florida 2002).

Valuation as Driver of Urban Concentration

Consumption based theories that argue that cities grow because highly educated people increasingly appreciate urban amenities (Glaeser et al. 2001), hereby spurring diversity and urban growth (Florida 2002). Other studies show that these processes are especially connected to creative industries, due to their specific knowledge creating processes (Spencer 2015, Pratt 2009). While, these approaches cannot explain the functioning of urban economic systems (Storper and Scott 2009), it cannot be denied that the phenomena described show contemporary forms of urban economic transformation (Clark et al. 2002).

We intend to present an additional argument to this discussion. We start with the phenomenon of restructuring of urban quarters and urban growth described by the consumption based approaches. However, we describe the reasons for these phenomena not from consumption-oriented preferences. Instead, we argue that economic reasons are responsible for these developments.

Our argument is knowledge based, as it emphasizes that economic processes based on knowledge opportunities are responsible for contemporary urban growth. However, it deviates from accounts based on Jacobs externalities as we do not focus on the production of novelty alone. Instead, we emphasize that valuation is the crucial process.

Valuation is a practice by which actors give value to something. Entities are qualified according to social norms, standards or personal values (Thévenot et al. 2000). In this perspective, objects do not intrinsically have a certain value produced via work or defined by its utility, which discloses by testing and evaluations. Instead, value is constructed via social and personal values and transformed into a market value (Aspers 2009). As Moeran and Pedersen (2011, p. 12) stated, “It is this qualitative symbolic value that is then exchanged for a quantitative economic value”.

An example for these processes of valuation is the German soft drink Bionade. A small rural brewery in Southern Germany that was close to bankruptcy produced this soft drink. Bionade, however, was not successful in the region of the brewery. Instead, it became only successful when people in clubs and bars of certain counter-cultural scenes in Hamburg

and Berlin started to drink Bionade. These people appreciated the story behind the drink of a small brewery creating a successful drink and refused to sell the small company to large companies like Coca-Cola. Bionade became a symbol of an alternative, sustainable and ethical life style. Although this drink was produced in rural areas, it was valued in the big cities. This valuation, i.e. the practice of giving value to something, we argue is the crucial process in contemporary urban economic development. Nowadays, Bionade belongs to the global food company Dr. Oetker. By losing its narrative, Bionade also lost its symbolic value and its economic turnover collapsed, although the drink itself did not change.

Valuation Perspectives

Valuation actually is an old concept. John Dewey formulated his “Theory on Valuation” already in 1939 (Dewey 1939). He uses the three notions of praise, prize, and price to describe the process of how social practices and norms result in an economic value. There are different contemporary approaches on valuation. Scholars like Boltanski and Thévenot (2006) see value creation in dependence of social norms, conventions etc. Others like Callon (1998) apply an actor network approach to investigate how actors calculate the value of an object. Yet, they share the perspective that valuation is a social practice of giving value that connects everyday with economic life (Hutter 2015).

Valuation has to be distinguished from other terms. While valuation describes the social practice by which value is given to something, notions of worth, or values (Stark 2009) describe non-monetary values, like social or ethical norms, upon which valuation bases. It also differs from Branding. Branding associates a certain meaning to an object (e.g. Pike 2009). Valuation is the process by which a value and significance is given to this association. Valuation also differs by the term “preferences”. Valuation describes how these preferences form, and how valuation depends on social norms (Boltanski and Thevenot 2006).

Valuation differs also from another important approach from economic sociology: the social network perspective. Social networks describe how actors organize their activities under according to their position in a social network as well as its structure (Granovetter 1985). This is a supply-oriented perspective, as markets, prices and demand are taken for granted. In contrast, a valuation perspective is demand oriented, i.e. it investigates how prices and the conditions for the exchange of goods are constructed (Beckert and Aspers 2011).

There are intersections between these two approaches in economic sociology. Burt (2004) for example described how network positions in structural holes enables managers in an US electronic corporation to produce more ideas. Furthermore, he emphasizes that the contribution of his study is that these ideas are also better valued. He argues that the reason for this better evaluation is that managers posited in structural holes know many different perspectives, which enable them to generate ideas that can be comprehended by other

managers with different backgrounds. While he emphasizes the importance of valuation, the ideas in his study have a fixed intrinsic value, and they only have to be communicated properly to disclose their value. A valuation perspective would investigate the norms and social processes that led to the selection of ideas, i.e. how these ideas were made valuable.

The quality of valuation becomes apparent in Aspers' (2009) distinction between standard and status markets. Standard markets comprise goods whose value can be defined by their attributes, like cars and their performance indicators. As such, they can easily be compared to other, similar products (other cars). Classification contribute to define and evaluate the value of a good, for example in the wine industry (Garcia-Parpet 2008). In contrast, the value of a good in status markets depends not on the relation of a good to a definable reference system. Instead, it is defined by who else owns, buys, or consumes this good. Value in this market thus depends on the identities of actors involved and upon which an actor defines the value of an object. Valuation is important in both markets. In standard markets, value is defined by quality standards and market differentiation results from the extent different goods meet these standards. In these markets, the standards, i.e. the scales under the quality of a good is assessed, is socially constructed. In status markets, actors value a good according to others, especially to those buyers with a high status, as they reflect what is valued in the market (Aspers 2009).

Aspers (2009) argued that the standard and the status market are often intertwined. A gold ring includes gold whose price can be assessed according to certain standards. However, the value of the artwork involved cannot be derived from the hours of working involved, but from how others appreciate the ring. Furthermore, many studies on valuation started with art markets. Actually, Dewey started his theory of valuation at the example of art criticism (Dewey 1939) and also many contemporary approaches focus on this sector (Velthuis 2003). However, a valuation perspective has been applied to a variety of sectors like scientific work (Karpik and Scott 2010) and food (Garcia-Parpet 2008). Therefore, although processes of valuation are most obvious in cultural markets like art, processes of valuation are also found to be important in other markets.

Valuation, Uncertainty and Geography

In the following, we base our framework on the work of Callon (1998). He adopts an actor network theory perspective and define the value of an object by its links, attachments and entanglements and how they find their way into a calculation, of both buyers and sellers (Callon and Muniesa 2005). To describe the information upon which buyers and sellers make their calculations, we use the links an object has to other entities (Thomas 1991; Callon 1998). Thomas (1991) describes this way how gifts and goods differ not by their physical qualities, but by their links: "Gifts are inalienable things which move between people who are mutually entangled in an array of rights and obligations" (Thomas 1991, p. 14). These links of the gift allow a calculation.

For example, who gave a gift, or in which context the gift given, serves as basis to calculate who owes and who shall receive a gift. Callon (1998) argues that also the economic value of goods depend on links, i.e., the manifold connections, references, links, and associations an object has. Consumers make their buying decision on the attachment a good has to other entities (Callon et al. 2002).

For links finding their way into a calculation, they have to be “visible,” and for a calculation to be feasible, the number of included links has to be limited. In short, a calculation requires “framing.” Framing is described by Callon (1998, p. 16) as follows: “a clear and precise boundary must be drawn between the relations which the agents will take into account and which will serve in their calculations and those which will be thrown out of the calculation as such.” Valuation therefore describes the processes that define which relations, links and entanglements of an object are included in a calculation.

Valuation of a good depends on the visibility of its links. While these are clear in standardized and established markets, they are unclear under conditions of uncertainty and when something new is integrated (Hutter and Stark 2015). In these cases, valuing a good depends on the decisions, assessments, and signals of others (Aspers 2009). Thus, there is much uncertainty involved. Aspers (2009, 125) describes this uncertainty as follows: “in markets that are not based on codified knowledge, actors have to find out what is going on, and what is good and bad, at the same time as they find out who the important actors are.”

Due to these uncertainties, and the dependence on the decisions and choices of others, studies showed that valuation processes are highly time and place dependent (Kjellberg et al. 2013), in arenas of debate and justification (Thévenot et al. 2000). These arenas are often concrete places. Hutter and Stark (2015) for example distinguish between sites of professional valuation e.g. in art ateliers, the court, dining rooms etc. and sites of consumer valuation like homes, concert halls and cinemas. Therefore, there are micro-geographic dynamics behind valuation processes. These micro-geographies not only enable interaction, they only allow people to observe the decisions, opinions and behaviors of others.

Coming back to the study of Spencer (2015), he found a different geographical pattern of knowledge neighborhoods or science based and creative industries. He argues that different forms of knowledge production are responsible for this different pattern, along defined trajectories and within firms in science based firms and combining divergent knowledge in creative industries. This surely is the case. However, we would argue that the reason for the high concentration of creative industries is not only its specific knowledge production process. Instead, we would argue that the crucial process in these industries is the valuation of knowledge, i.e. which novelty creates affection, is new, and has a certain meaning. In short, we argue that valuation leads to spatial concentration.

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REST IN PEACE

Laboratories of Valuation: Art Fairs in Basel

We will exemplify our argument that valuation, and specifically the uncertainty of value of objects, needs and therefore leads to spatial concentration with the example of two art fairs in Basel: the SCOPE and the Art Basel. Both fairs take place in Basel at the same time. However, they exhibit different segments of the art market. While the Art Basel belongs to the most important fairs for art (Thompson 2011), the SCOPE is a lower tier fair. We investigate the two art fairs as laboratories for urban concentration processes for five reasons: first, as no standards exist and the value of an artwork cannot be derived by its attributes, it is a suitable object to study valuation processes (e.g. Beckert and Rössel 2013, Velthuis 2003). Additionally, a setting where the objects are already produced allows separating valuation from generation of novelty. Third, art fairs are temporarily and spatially limited events (Rinallo and Golfetto 2011), which also internally are shaped by a particular geography of booths, exhibitions and rooms for events. The highly structured event of a fair resembles a laboratory situation, where valuation processes can be tested under nearly controlled conditions. Fourth, we deliberately chose contemporary art, as its value is less clearly defined than in more established fields of art. Fifth, the two fairs exhibit different degrees of uncertainties. As we will describe in the following, the value for pieces of art is quite clear at the Art Basel, while often opaque at the SCOPE. In sum, the fairs resemble urban structures with a certain density of actors, objects, spaces of valuation and different degrees of uncertainties of what is of value. Therefore, the two fairs provide examples of how actors deal with different degrees of uncertainty in a delimited geographical context in a limited time. Investigating these art fairs therefore resembles a laboratory approach with the exception that this laboratory is placed in the real world.

Method and Data

We did field studies at the fairs in June 2014 and 2015. Altogether we conducted 33 qualitative interviews with gallery owners and artists, 13 of them at Art Basel (13), and 20 at SCOPE (20). Five additional interviews with the organizers of the art fairs, art critics, curators, and gallery owners were conducted. Interviews at the fairs were especially focused on gallery owners. We investigated the processes of valuation by focusing on price construction and negotiations about the value of an artwork. Questions were for example: why did the gallery select this artwork?; what defines the value of the artwork?; is the artwork already sold? (and who bought it?); did the gallery sell other pieces of art?; why, when and how these pieces of art were sold?; and why did the gallery chose to exhibit at this particular fair?

Interviews conducted at the art fairs lasted between a few minutes to over an hour. There were only brief opportunities for interviews, as representatives were involved in their business. Potential customers or colleagues partly interrupted the interviews at the fairs.

Our experience reflected those of others conducting research at fairs. Andreae et al. (2013, p. 197) described it as follows: “For social scientists accustomed to deploying the usual repertoire of research methodologies, the trade show performance presents a fleeting target that does not always lend itself to lengthy interview, focus groups or even detailed qualitative surveys. In consequence, normal research methodologies may not be practical, depending on the nature of the show itself.”

Potential interviewees did not refuse to talk to us when we mentioned our intention. However, everything that would look like a standard interview situation (recording, making minutes, following a questionnaire) would result in the breakup of an interview. Therefore, the interviews usually took the form of a discussion about a particular work of art that was exhibited. From this discussion about the artwork, we could state our questions about the selection and valuation processes.

Both authors conducted most interviews at the fairs. Minutes were recorded during or directly after the interview. Interviews outside the fairs were recorded and transcribed. After a brief discussion and an exchange of understanding, the transcript of each interview was produced. Interviews outside the fairs were longer and more formalized. Additionally, we used information gathered during different discussion sessions, and participated in informal talks during the fair as well as at evening events. We added documents published by fair or industry organizations and own observations to this material.

Data from the interviews, informal talks and documents have been analyzed through an “abductive process” (Dubois and Gadde 2002) by constantly moving back and forth between theory and empirical results, in order to reach a deep understanding of the subject. Categories have first been defined according to the theoretical thoughts. The empirical data was then challenged by theoretical considerations and vice versa (Miles and Huberman 1994) over several rounds of categorical adaptation.

Before the Fair: Calculating Value

We base our analysis upon the links an artwork has and upon which the price of an artwork is calculated (Thomas 1991, Callon 1998). We distinguish between three forms of links: links to discourses (e.g. in media), documented places of physical presence of the artwork, as well as prices, both of previous sales and prices of connected artworks (e.g. from the same artist, the same epoch, the same art field). Exhibitors make their calculations upon these links and they do so before the actual fair starts. Therefore, prices reflect links that already existed before the actual exhibition. These three forms of links were different for pieces of art at Art Basel and SCOPE. Pieces of art were stronger involved in art related discourses and covered by media at Art Basel as compared to SCOPE. Due to the missing media coverage of artworks exhibited at SCOPE, awards were important for price calculations for exhibitors at this fair.

We found comparable differences between the two fairs regarding the previous physical locations of an artwork, such as museums, collections, or galleries. Artworks exhibited at Art Basel often have a considerable history of presence at different places, many of them quite renowned. We did not find respective links for artwork at SCOPE.

An important indicator for calculating the price for an artwork is its price announced or achieved at previous exhibitions. As prices tend to rise between exhibitions, even if the artwork was not sold, previous exhibitions and sales send a strong price signal for the next exhibition. Previous prices exist mainly at Art Basel, to a lesser extent at SCOPE. Another rationale for calculating the price refers to the positioning of an artwork in the field of art. Interviewees stated that they calculate prices according to the relation a work of art has with other works of art from the same artist. A work of art is valued and evaluated within the whole work of a particular artist and these price calculations also consider the price developments of other artwork from the same artist.

These forms of links were more complex at Art Basel and least extensive for the artwork exhibited at SCOPE. However, missing previous sales, media coverage, and place of previous exhibitions, all made links to other works of art as well as the artist an important element in the price calculations for the artwork exhibited at SCOPE. We found several examples where the price was set according to the normative impetus described by Velthuis (2003), as gallery owners sets the price to appreciate the artist. Furthermore, we found examples at SCOPE where these opaque links to other objects of art led to two particular reactions. First, the gallery owner mentioned taking the craftsmanship of an artist and materials into account when setting a price. This form of calculation that refers to the discrete artwork was not found at the Art Basel. Second, the artwork exhibited at SCOPE was often especially produced for this fair. Buyers usually do not know other works of the artist and therefore are not able to value a particular work of art within the complete works. Gallery owners did mention that artists take this missing knowledge of potential buyers into account when they produce an artwork for a fair. As a result, artists make a piece of art more accessible and comprehensible by cutting codes and connections to their other pieces of art, and in doing so make it easier to sell.

This overview shows that links of exhibited artworks differed between Art Basel and SCOPE. At Art Basel, works of art are complex entangled by a certain history of exhibitions at renowned places, discussions in art media, and previous prices. At SCOPE scarcity of the above described links made craftsmanship and comprehensibility of an artwork important parts of a calculation.

At the Fair: Disclosure of Links

When exhibited at a fair, works of art are integrated into a new environment. The physical arrangements of art, the talks at the booth, the workshops and documentations, and the

sheer amount of exhibited works of art create an environment where different calculations of buyers and sellers are tested against each other. While exhibitors made their price calculations before the fair, buyers use the information they get at the fair to make or refine their calculation (Rinallo and Golfetto 2011). For the calculations of sellers and buyers to match, they should be framed in the same way, i.e., based on the same links. The previous section described different links of artwork exhibited at the Art Basel and Scope. These differences are the reasons for the different prices for artwork at the Art Basel and the Scope. This section describes how the different environments and settings at the two fairs affect disclosures of links. Knowing the links of an artwork and knowing which of these links are included in a calculation reduces uncertainty about the value of an artwork.

We used our framework of links to discourses, places, and prices to describe different forms to disclose links at the art fairs. The discursive environment of an art fair consists of public talks, discussions, catalogs, and fair related publications. Art Basel provides a catalog with an overview of each participating gallery, and which includes artists and pictures of all exhibited artworks. Additionally, the fair hosts a talk series where artists, curators, critics, collectors, and art journalists give insights on recent debates about art and the functioning of the art market. Furthermore, the Baloise Art Prize, one of the highest remunerated art awards worldwide, is given at Art Basel. At SCOPE, we did not find this extensive coverage. No talks or panels were held, no awards are given, and the fair did not publish a catalog on the art presented at the fair. Therefore, the density of a discursive environment decreases from Art Basel, via LISTE to SCOPE.

Another indication about the value of exhibited artworks is given by the physical arrangement of booths and artworks, i.e., the position of galleries in the fair, the size of the booth, the relation to its immediate environment, and the arrangement of pieces of art within the booth. Especially at Art Basel, the size and location of the booth expresses the actual status of the gallery in terms of reputation and importance in the global art market. We found examples at Art Basel, where a change in reputation is reflected by a change in the physical position of a gallery in the fair space. One gallery owner told us the following: “At the beginning, we had a bigger booth, now we have a smaller one, but we actually would like to have a bigger one. In order to preserve continuity, we nevertheless took that booth, that we do not lose the booth the next year.”.

At the booth, exhibitors try to build environments that fit to the artwork and they arrange the artwork in relation to its built environment. The possibilities are framed by a modular exhibition space at Art Basel and SCOPE, where the booths can differ in size and form, but not in height, light and color. Within the booth, exhibitors use the space to disclose the connections between different pieces of art as well as to the artist. Exhibitors at SCOPE mentioned that they selected artwork for the fair that fitted together and arranged it accordingly. Exhibitors at SCOPE showed only few artists, sometimes only three or four, and in one case only one. This selection allows for exhibiting a larger number of pictures from each artist, which helps to decode connections between the different artworks. However, galleries at Art Basel usually exhibited up to ten artists and often showed only

one or two pictures of each artist. These results show that especially at SCOPE, where the environment provides little help in disclosing the links of artworks, exhibitors apply strategies at the booths to show the connections of an artwork.

Additionally, fairs are market places where supply meets demand and where buyers and sellers compare prices. The two Basel art fairs serve as global markets that gather galleries and collectors from different parts of the world. Interviewees emphasized that the size of the market created by the fairs enable galleries to get in touch with collectors that are interested in artwork that are difficult to find in smaller markets. Moreover, large fairs also enable galleries that represent artists at the fringe of the field to sell their art. The sheer size of the market allows for a variety and density.

However, the two fairs differed in the visibility of supply and demand. At Art Basel, exhibitors and buyers usually knew each other, and have been in touch before the fair. The gallery sends a catalog containing the artworks that will be exhibited at the fair to mainly long-known collectors, and gallery owners usually know which collectors will visit the fair. Moreover, collectors get catalogs from several galleries. They therefore have a good overview on the market before the fair actually starts. This market overview exists only to a smaller extent at SCOPE.

To conclude, fair organizers and exhibitors at the two fairs differ in their strategies to make links visible. At Art Basel, there is a rich discursive environment, arrangement of the booth, and a previously known supply and demand. At SCOPE, however, this environment is mostly missing. Exhibitors substitute this missing environment by booth bases strategies, e.g., via arrangements of art.

At the Fair: Negotiations about Value

Uncertainty about the value of an artwork is reduced when links upon which sellers made their calculation are visible also for buyers. The previous sections showed that the two art fairs differ in three aspects. First, they exhibit pieces of art that differ in their links. Second, the two fairs provide different environments to disclose links and reduce information asymmetries. Art Basel provided a complex environment where links are systematically disclosed during talks, within catalogs and via forms of physical representation. At SCOPE, however, these disclosures mainly take place at the booths.

These conditions affect the uncertainties about how to value an artwork. Due to missing environment like workshops, media coverage and art catalogues, links of artwork remain more opaque at the SCOPE than at the Art Basel. Although the artwork exhibited at the Art Basel has a considerably higher price than those exhibited at the SOPE, the uncertainty about the value of artwork at the SCOPE is higher than at the Art Basel.

This section describes how exhibitors and visitors deal with these different degrees of uncertainty at these two fairs. In doing so, we focus on the negotiations between sellers and buyers that take place at the booths. We found two differences between the two fairs in this respect. The first difference refers to time, i.e., the duration of negotiations and the day when the galleries made their most sales. At Art Basel, artwork was sold quickly. Galleries already expected many sales and most galleries we interviewed at Art Basel made large parts of their turnover during the first two days of the fair. At SCOPE, interactions between gallery owners and artists on one side and buyers and collectors on the other were more extensive and sales usually took place on the last day of the fair. Buyers visited the gallery several times to discuss an artwork, its background, the artist, the gallery, and which collectors already have collected the artist. Additionally buyers often brought friends and/or partners to discuss different perspectives. Exhibitors used these days to describe the artwork and its various, but often weak links. The fair enabled these lengthy forms of communications, during which links became visible for potential buyers.

Furthermore, only at SCOPE did we find galleries where an artist was present. When we talked to these artists about their intention to be at the fair, they explained that they were interested in seeing the reaction of visitors to their artwork and to talk to them about their art. Of course, there may be a bias. Many of the artists whose work is exhibited at Art Basel are already dead, which reduces their probability of physical presence. However, the presence of artists fits into an overall picture where galleries rely on the setting at the booth to disclose the links of a work of art when these links are opaque or an environment to disclose links is missing.

The second difference between the three fairs was the volatility of turnovers. Galleries at Art Basel uniformly sold most of their works. At Art Basel, when a work of art was sold, it was replaced by a new work of art from stock. Galleries exhibiting at SCOPE showed more variety in sales. We found both galleries that sold most of their works and replaced sold artworks from stock, and those that sold nearly nothing. Actually, the latter were in the majority at SCOPE.

Conclusion: The Geography of Valuation

Interactions, negotiations, and market dynamics differed strongly between the Art Basel and the SCOPE. The environment at the Art Basel made links visible. This visibility decreases uncertainty about the value of an artwork. At the SCOPE, in contrast, this environment misses. Lengthy interactions were necessary to disclose links and to negotiate the value of an artwork. And even with these lengthy interactions, uncertainty was still high and resulted in highly volatile markets.

The example of the SCOPE describes valuation processes under conditions of uncertainty about both the links of an object and the value of its links. Thus, the processes we observed at SCOPE describe those prevalent in industries in which actors permanently redefine what is of value. This condition refers especially to creative and cultural industries. Forms of standard setting exist also in these industries. Yet, most creative industries evade these forms of standardization (Pratt 2011).

Most scholars consider the necessity to interact face-to-face as crucial driver for being geographically close and concentrated (Maskell and Malmberg 1999, Storper and Venables 2004; Menzel 2015). Our study supports this reasoning. However, it deviates from the perspective that it is especially knowledge production that requires these face-to-face interactions. Our case shows that no knowledge production was involved. Instead, visitors and exhibitors negotiated about the value of artworks. In doing so, our findings show that geographical face-to-face interaction is also important when it is uncertain what kind of knowledge is relevant, important, or of value. This valuation process inherently is one of selection. We therefore point out, that also selection has a distinct geography.

Following this argumentation, a reason for the increased concentration of creative activities in dense urban quarters is that these permanent interactions are not only necessary to produce novelty, but also to value and evaluate novelty. This condition would explain why in the example of Spencer (2015) especially creative industries and not science industries concentrate. Lack of standards and definable trajectories require permanent interactions to evaluate and reassure what novelty is important, of value, and creative.

Yet, we would assume that the geographies of novelty production and valuation are different. Studies show that novelty production requires interactions (Menzel 2015). Studies like Breschi and Lissoni (2003) and Giuliani (2007) point out that due to these processes knowledge not simply spills over, but follows relations in which these lengthy interactions take place. In contrast, studies on valuation emphasize the importance of certain situations taking place at particular sites like places of work or places of consumption (Hutter and Stark 2015). Valuation under conditions of uncertainty about what has a value requires diversity of places, people and situation, to permanently integrate and reflect on other perspectives. These conditions are given in urban quarters. Therefore, especially those industries in which what is of value permanently has to be negotiated require such places. With the rise of these industries, with increasing uncertainties about what is of value, like in times of crises since 2008, the propensity to spatially concentrate increases.

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The production of links

Value creation in
contemporary capitalism and
its geography

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Introduction

In 2008, the housing bubble in the USA burst and led to a global economic crisis, which transformed to a debt and Euro crisis. Large structural crises of this kind disclose that well established tools, theories and policies that served to alleviate previous crises do not seem to work anymore. This evasion from solutions that were helpful in previous crises actually constructs these large structural crises (Boyer 2012). The current economic crisis resembles the structural changes of the 1930s or the late 1960s and early 1970s (French et al. 2009). During these crises, the dominant forms of value creation have changed: from the mechanization and Taylorism of production (Boyer 1997) via post-Fordist flexibilization (Amin 1994) to the financialization of production and consumption (Corpataux et al. 2009); each of these phased with its own geography. Comparing the contemporary crisis with these changes of past crises raises the question of what forms of value generation will shape a future economy.

These major economic crises were also incubators for new theoretical approaches, which reacted to the transformation of capitalism. Keynes developed his theory as reaction to the crisis of 1929 (Skidelsky 2010). Regulation theory developed as reaction to the crisis of Fordism (Boyer And Durand 1997). The crises we face today resulted in debates about the appropriateness of existent theories both in mainstream (Krugman 2009) and heterodox (Dosi et al. 2016) economics. Also economic geography addressed the crisis. Two developments stand out in this respect. The first, and most prominent strand of literature in this respect, is the literature on financialization that described the volatility of an economy driven by increasing extension of financial markets (Martin 2011, French et al. 2011, Peet 2011). The other strand focuses on the resilience of regions to shocks such as the current economic crisis (Martin 2012, Hassink 2010, Boschma 2015). This research intends to investigate the reasons for the crisis and implications of the crisis for the regional economy. Yet, the experience of previous major economic crises and debates in neighboring disciplines show that the economy might fundamentally change and that established perspectives might be insufficient to deal with these changes.

While only future research might comprehensively explain contemporary socio-economic distortions, what can be done now and what is at the center of economic geography as an applied science is to observe. The crisis of Fordism gave good examples how economic geography dealt with an economic crisis. Starting from first accounts by Italian economists that certain regions perform better than expected and these regions exhibit some particular qualities (Becattini 2002), economic geographers started to investigate these regions, leading to rich cases studies on places like the Third Italy (Scott 1988a, Amin 1994), Silicon Valley (Saxenian 1994) or Baden-Württemberg (Herrigel 1996), which became paradigms for the spatial organization of a new, flexible production system (Scott 1988a).

Today, we do not have a Third Italy that might serve as a paradigm for a future economy. Yet, particular developments already gained considerable attention. None of the following

is new, but all got momentum after the crisis. First, we observe a transformation of cities. Global cities and large metropolitan areas grow above average (Sassen 2001, An De Meulen and Mitze 2014), which in addition were less affected by the economic downturn than smaller cities (Stolarick and Currid-Halkett 2013). Furthermore, processes of urban transformation took place in particular urban neighborhoods that are connected to the emergence of a creative class (Florida 2002) and the growth of creative and cultural industries (Pratt 2008). Second, some economic development that already are discussed in economic geography and which are driven by changing consumption norms stand out after 2008. One is the development of an economy based on experiences (Pine And Gilmore 1998), creativity (Florida 2002) and aestheticization (Reckwitz 2013), connected with creative and cultural industries (Pratt 2008, Scott 2010). The other development leads towards a sustainable economy based on renewable energy, fair trade and ecologically manufactured goods (Smith et al. 2010, Coenen et al. 2012). Like metropolitan areas, creative industries (Gabe et al. 2013) as well as investments in sustainable transitions (Geels 2013) were comparatively slightly affected by the crisis. Third, these changes in consumption norms are accompanied by changes in production. New developments like modular production, 3D-printing, the internet of things, or Industrie 4.0 change the way a product is produced.

The argument put forward in this paper is that these developments are connected by a latent dynamic that enforces these changes, alters the way of how products are produced (and consumed) and results in a new geography of production. This latent dynamic is the production of links. The production of links moves the production of added value away from the physical attributes of a good or its direct utility to the context in which a product is produced (e.g. ethical or sustainable production) and which gives the product aesthetic or symbolic meaning. Thus, value is produced by linking the product to something else that gives value to the product. Other concepts already describe similar connections like the economy of qualities (Callon et al. 2002) or branding (Pike 2009). These approaches describe how a product can always be de- and re-attached (e.g. Coca Cola to Christmas or Olympia). The link as described in this paper, however, is part of the production process. For example, green electricity is produced from renewable energies or a design chair based on the idea of a particular designer.

The next section describes how recent trends of creativity and sustainability are connected via changing consumption norms. The third section describes the concept of valuation and how these changing norms lead to a valuation and production of links. The fourth section describes new forms of production that drive these changes. The fifth section connects new economic forms like co-production, crowd funding, or social entrepreneurship to the production of links. The seventh section argues that these developments results in a new geography. The eighth section integrates the economies of links in their historical context, and the ninth section concludes.

Changing Consumption Norms of Sustainability and Creativity

When investigating changes contemporary changes in production and consumption, two economic developments that stands out since the economic crises since 2008: the development of an economy based on experiences (Pine and Gilmore 1998, Lorentzen 2009) and aestheticization (Reckwitz 2013) as well as the development towards a sustainable economy based on renewable energy, fair trade and ecologically manufactured goods (Smith et al. 2010).

There are considerable differences between these two areas of research. The most important one refers to the quality of transformation. Authors such as Pratt (2008) see creative industries as indicator for a current economic transformation. In contrast to Florida (2002), he argues that this transformation is less driven by a rise of certain forms of employment and consumption norms of a creative class. Instead, he argues for a shift in production towards symbolically and culturally affected products. He therefore sees cultural industries such as music and art in the center of this transformation, as “a practical example of the hybrid and complex relationships between production and consumption, the symbolic and material” (Pratt 2008, 107). This transformation describes a change in the added value of a product from its materiality to immaterial forms, and thus the “associative giving of meanings, which are connected to material carrier (words, pictures, sounds buildings, behaviors) and to sensual perceptions and emotions” (Reckwitz 2013, 143, own translation).

Like creativity, sustainability is considered by scholars as a socio-economic transformative process (Markard And Truffer 2008, Mathews 2013), yet its quality is fundamentally different. The field of sustainability transition investigates and tries to promote the transformation of the economy towards sustainability (Geels 2013, Coenen et al. 2012). Research focusses mainly on the transformation of resource intensive production and services towards sustainable and ecological friendly forms of production. Accordingly, research focusses on energy intensive sectors like transport (Coenen et al. 2012), energy (Dewald and Truffer 2012), or food (Lang and Barling 2012). This transformation is driven by technological solutions as well as institutional changes and changes in societal conventions and norms. Accordingly, sustainability transitions take place on a variety of levels (Geels 2004).

These developments differ also in other aspects. The first refers to knowledge processes. Scholars of the creative economy emphasize the importance of diversity (Florida 2003), creation of affections and experiences (Pine and Gilmore 1998) and the transfer of logics from the field of art into the wider economy (Reckwitz 2013) as drivers of novelty. Scholar on sustainability transition in contrast refer to the development of technologies (Smith et al. 2010), the diffusion of environmental friendly technologies and their adaptation to different contexts (Martin and Coenen 2014). Both fields also differ in geographical scale.

While the creative economy is often investigated on the level of the dense and diverse urban quarter (Cohendet et al. 2010), geographers investigating sustainability transitions mostly focus on the level of the region (Coenen et al. 2012). Finally, both strands of literature differ in the perception of the role of the state. While the public support under the heading of a creative economy is criticized for following a neoliberal agenda (Peck 2005), scholars on sustainability transition emphasize the need of public support to perform these transitions (e.g. Dewald and Truffer 2012).

Despite these differences, transformations towards a creative or sustainable economies exhibit also some similarities. First, both transformations are driven by changing norms and conventions (Boltanski and Thévenot 2006). Reckwitz (2013) described how the creativity dispositive from the field of arts moved via creative industries into wide areas of the society and in doing so transforms production, consumptions and work. Thévenot et al. (2000) showed how conventions of sustainability became a distinct order of worth. In this respect, the rise of creative industries is an indicator of the growing economic importance of symbolic values; and the demand for ethical and sustainable produced products a change of norms in this respect (Boltanski and Thévenot 2006).

Second, these developments do not describe new products, but changes in the way in which existing products are produced. Thus, the driver is not a new technology that allowed new solutions to defined problems (as it is for example the case with biotech). Instead, problems were redefined and established technologies used to solve these problems. For example, the production of authenticity often coincides with craft based forms of production (which has been replaced by industrial production); and the production of electricity via wind was known since 1888 (Manwell et al. 2010), but only became an industry after changes in demand after the oil crises in the 1970s (Garud And Karnøe 2003).

Third, both development dissolve the consumers-producers divide. This divide is observable even in such diverse cases like production of music or electricity. Lange and Bürkner (2013) describe how music DJs are also visitors of shows and visitors often produce their own music. Dewald And Truffer (2011) showed how users of electricity become producers themselves. Due to their expertise, consumers became an important source of new firms in both fields.

Fourth, in both fields, not the inherent quality of a product determines its price, but its context, i.e. either its symbolic associations or the condition of its production. The creative and cultural industry creates value by attaching an object to something with meaning (Reckwitz 2013), symbolic values (Martin And Moodysson 2011) and experiences (Pine and Gilmore 1998). In the same way, sustainable goods are valued according to their social and environmental impacts (Smith et al. 2010), whereas the production conditions along the global value chain are taken into account in the consumption decisions. Gourevitch (2011) for example shows that consumers are willing to pay more if the product is produced in an ethical way. Thus, both developments describe how the locus of value creation moves from the production of the product to the production of its context.

Fifth, there is a temporal correlation between these two developments, which is most obvious during the development of the crisis of 2008/2009. Gabe et al. (2013) found out, people in the creative class in the crisis are less work and faster after the crisis in 2008 a new employment find as people in the working-class and service class. They conclude that there is a „an economic transformation that favors knowledge-based creative activities“ (GABE et al. 2013: 51). Stolarick and Currid-Halkett (2013) investigate the influence of employees in various professional fields to regional economic growth or resilience during the crisis to 2008. Just as Gabe et al. (2013), they found a positive influence of the creative class on regional growth and resilience during the crisis. A similar resilience to the crisis is found by Geels (2013) regarding the clean tech sector. He showed that financing of sustainability transitions continued and overall investments in sustainability transition is higher after than before 2008.

Valuation and the Production of Links

The paper argues that the move towards a sustainable and creative economy can be described by a moving locus of value creation from the product to the links of the product. This section presents theoretical approaches on value creation and describes the particularities of the valuation of links. There are different theories that describe how an economic value is created. Marxist approaches would argue that the value is created in work (Vatin 2013). Neoclassical approaches would argue that the value of a good depends on its utility, preferences or is revealed via supply and demand (Beckert 2011). Contemporary approaches from economic sociology argue that value is constructed by social practices (Callon 1998, Boltanski and Thévenot 2006). As our focus will be how socio-economic changes over time affect “orders of worth” (Boltanski and Thévenot 2006), as well as practices of giving worth (Hutter and Stark 2015), we apply the latter perspective, which can be subsumed under the term of “valuation” (Kjellberg et al. 2013).

Valuation actually is an old concept. John Dewey formulated his “Theory on Valuation” already in 1939 (Dewey 1939). He uses the three notions of praise, prize, and price to describe the process of how social practices and norms result in an economic value. Contemporary scholars like Boltanski and Thévenot (2006) see value creation in dependence of social norms or conventions. Callon (1998) applies an actor network approach to investigate how actors calculate the value of an object. Others like Hutter And Stark (2015) focus on identities and situations where actors value an object or differentiate between different markets that differ in the valuation of goods like Aspers (2009). Yet, they share the perspective that goods do not intrinsically have a certain value for example defined by its utility, as the standards upon the functionality of a good is evaluated and tested themselves are constructed.

Other terms are connected to “valuation”. The terms worth and values (Stark 2009) describe non-monetary values, like social or ethical norms, upon which valuation bases. Evaluation describes how the value of something is assessed in comparison to other objects, values, situations or preferences (Lamont 2012). In addition, Vatin (2013) disentangles the two different sides of valuation. Evaluation on the one side and the production of that what is evaluated, what he calls “valorization”, on the other side. He argues that not only the product itself undergoes valuation once it enters a market. Instead, also production, management, R&D, labor relations etc. i.e. the tasks that are coordinated to create an economic value is object of valuation. Producers follow norms, have tools and devices (which themselves incorporate values) that guide their decisions. Thus, the social norms that evaluate the product also affects how to produce the product, i.e. that what is valued has to be produced to be valorized. The perspective on valorization therefore widens the focus from consumption to the production process.

In the argument of this paper, what is valorized is the link. Scholars already emphasized that evaluations and calculations take place upon the connections a product has and which are deliberately produced (Callon et al. 2002). The term “branding” for example describes how certain meanings are attached to a product (Pike 2009), which change the product and how it is evaluated. However, these attachments can easily detached and the product easily attached to something else. In contrast, what is called as “link” in this paper is intertwined and entangled into the product. Thomas (1991) applied the notion of “entanglement” to describe that gifts and goods differ not by their physical qualities, but by their entanglements: “Gifts are inalienable things which move between people who are mutually entangled in an array of rights and obligations” (Thomas 1991, 14). However, these entanglements of the gift allow a calculation. Who gave a gift or in which context the gift given serves as basis to calculate who owes and who shall receive a gift. Similar to these entanglements, the links are part of the object and define its value. For example, it is possible to greenwash a producer of fossil energy by attaching it for example to environmental friendly projects, yet this does not dissolve the link between the electricity and its form of production. In turn, branding may contribute to make links visible. Jeannerat and Crevoisier (2011) for example describe how the Swiss watch industry valorizes on its craft based tradition. This tradition was always there, even during the temporal demise of the Swiss watch industry caused by the quartz watch (Glasmeier 1991). Yet, watch manufacturers started to make this link visible link via different forms marketing only since the 2000s (Jeannerat And Crevoisier 2011). To conclude, to valorize the link it has to be produced and made visible.

Many of the goods used to describe the economy of links can be described as Veblen goods, where “consumers exhibit a willingness to pay a higher price for a functionally equivalent good” (Bagwell and Bernheim 1996, 349) to exhibit their status. For Veblen goods, displaying status is the main function and this function is achieved by the ability of the buyer to pay a higher price. The economy of links can coincide with higher prices, but in principle is contingent to prices.

Goods sold at a flea market sometimes receive their value from their previous life (Appadurai 1988), but usually are cheaper than new ones. Making fashion or furniture from used materials creates some authenticity without higher costs. Social entrepreneurship projects like Fairphone (www.fairphone.com) or Viva con Aqua (www.vivaconagua.org) sell smartphones or bottled water at average prices. These examples show that links create an additional value, which not necessarily coincides with higher prices. Additionally, the described transformations towards sustainability and creativity are so pervasive that these goods do not qualify for Veblen goods per se. The potential social distinction by using renewable energy is quite low due to its dissemination. Displaying status requires investments like buying a Tesla.

New Forms of Production

The previous section described how changing consumption norms values the links of a product. In addition to changing consumption norms, also new forms of production are introduced and transform ways of production. These new forms are described by terms like “Industrie 4.0” or “internet of things”. Studies on the economic and geographical outcomes of these developments are still scarce (e.g. Rifkin 2014). Yet, a precondition for these new forms is the modularization of production, which we can consider as blueprint and extrapolate from it.

Modularity describes a particular of mass production (Baldwin and Clark 1997). Campagnolo and Camuffo (2012) distinguish between modularization on the product level, i.e. a modular product design, and modularization on the manufacturing level, i.e. in-house or outsourced manufacturing. A modular product consists of components that are interchangeable without adjustments in other components (Baldwin and Clark 1997). This condition enables the production of a variety of products. Modular production is connected to high degrees of standardization that “simplify interactions by reducing component variation and by unifying component, product, and process specifications” (Gereffi et al. 2005, 86).

In addition to the product, modularization extends also to the organizational level. The structure of a product corresponds with the structure of organizations (MacCormack et al. 2012). A modular product architecture is therefore often accompanied by a modular supply chain organization. As components are interchangeable, so are supplier relations (Baldwin and Clark 1997). Codification facilitates outsourcing as it enables the exchange of complex information “with little explicit coordination” (Gereffi et al. 2005, 86). Thus, codification lowers costs of switching suppliers and makes suppliers and also lead firms mutually substitutable (Sturgeon 2002). Furthermore, standardization disconnects the production of a product from the capabilities and assets necessary to produce it.



Modularization is often accompanied by a shift of production competencies to suppliers, which again results in increased R&D efforts on the supplier level. This transfer of production competencies from producers to suppliers lowers entry barriers for others, as new producers do not need to have own production competencies to enter a market (Sturgeon 2002). Instead, they only need to combine and rearrange available components. This quality facilitates entry for firms that valorize on the links a product has and not on its production. A respective example is the inventor of the smart watch, Pebble Technology, which formed in 2012. The founder neither has a production background and nor does the firm produce anything. Instead, the company bases upon existing supplier base with respective production capabilities.

Modular forms of production combine high degrees of standardization with flexible production. This flexibility of production is even enhanced by new development like the “internet of things” or 3D-printing. As a result, marginal costs for each new product variation decrease. In the end, it does not matter if a firm produces 1000 times the same product or 1000 different variations. However, the interchangeability of components, suppliers and producers approaches a perfect market (Sturgeon 2002), which reduces profit margins. In doing so, modularization pushes the locus of value creation away from the sheer production and towards parts of the value chain that are difficult to modularize and still allow for monopolistic rents.

New Forms of Economic Organization

The previous section described how contemporary dynamics on the consumption and the production side move the locus of value creation towards the link. The link can be produced from three sides, i.e. either from the side of the manufacturing the product, the entity that is connected to the product, or those that know the value of the link. This quality contributes to explain other contemporary economic developments.

The first is the growing importance of consumer-producer co-production which dissolves the distinction (Grabher et al. 2008). This contemporary form of co-production is an extension of learning via interacting within user-producer relationships already described by Lundvall (1988). These interactions that took place between manufacturers and suppliers served to improve a product and its utility. In contrast, user-consumer-co-production serves to directly generate a value for the consumers involved and dissolves the boundary between the user and the producer (Humphreys and Grayson 2008).

A second phenomenon that coincides with the production of links is the emergence of new forms of financing. Dosi (1990) describes the general relation between the economic system and its financial institutions.

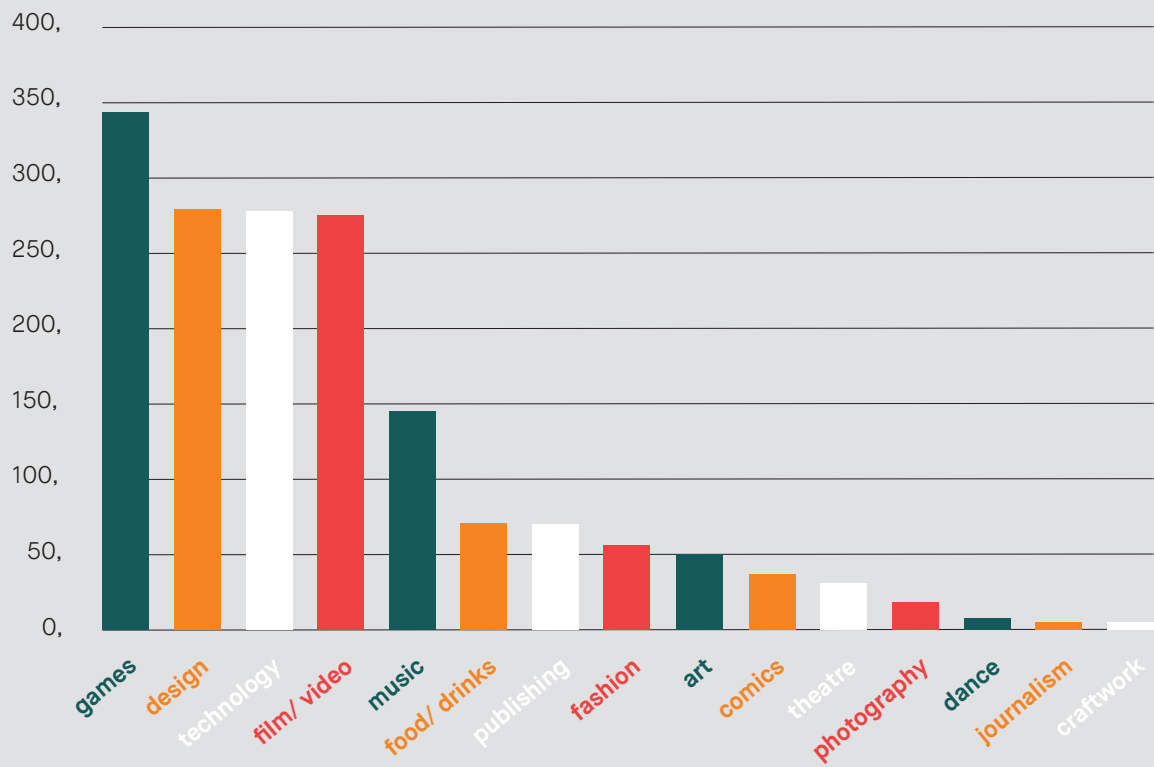


Figure 1 Collected Money for Kickstarter Projects until April 2015 in Mio. \$ (www.statista.de)

Perez (2009) shows that with the emergence of new sectors also new financial institutions emerge. In Post-Fordism, venture capital emerged as new financial institution (Florida and Kenney 1988). This form finances technology driven firms that had the potential to develop and successfully commercialize a new technology, yet at a high risk of failure. Knowledge about the technology is important in this respect. In contrast, an economy where links are valued financing of novelty depends on knowledge about links. The fact that links are often particular for each product and difficult to define aggravates a standardized assessment, which requires new forms of financing. Crowd Funding became a viable form to finance projects with the formation of crowdfunding platforms Indiegogo and Kickstarter in 2008 and 2009, respectively. Figure 1 gives the projects funded by crowd funding platform Kickstarter. It shows that especially projects like games, design, film and video are funded, i.e. those with where meaning and experiences are important. Technology as second largest category mostly involves projects with a focus on sustainability. Thus, crowd funding allows to evaluate links by connecting the project to people that have knowledge about the value of its links. In addition to evaluating links, everyone can become the financier of a new venture via crowd funding. While this role was previously limited to professionals working in respective firms and persons with a particular wealth, crowd funding is another example for the dissolution between customers and buyers, professionals and amateurs, and financiers and receiver of money.

A third phenomenon is the increasing prevalence of social entrepreneurship projects (Porter and Kramer 2011). While studies on past industries show that successful entry depends on production experiences (Klepper 1997, Klepper 2002), social entrepreneurship projects the product is just the vehicle to produce a societal impact, i.e. to produce a particular link. This form of entrepreneurship is facilitated by a reconfiguration of the production system that allows entry without production experience.

Geography of the Production of Links

The production of links also seems to have a distinct geography. What we can observe is a continuing growth of cities and large metropolitan areas. However, this growth is highly selective. This selectivity takes place on several levels. The first level is the level of the city. Not all cities are affected. These processes started in large cities that were highly integrated into global networks (Sassen 2001). Later, this development affected generally large metropolitan areas. The second level is the inner-city structure. Processes of urban renewal and transformation took place in particular urban neighborhoods. Third, this development is strongly connected to the emergence of a creative class (Florida 2002) and the growth of creative and cultural industries (Pratt 2008). Recently, these processes of urban growth and geographic fragmentation seem to accelerate and become more pervasive (Florida 2002). An De Meulen and Mitze (2014) showed that creative quarters started as isolated

locations became pervasive during time. Potts and Cunningham (2008) showed that the importance of creative and cultural industries for urban growth rose to an extent that they themselves became a location factor for other industries, thereby accelerating urban growth. Additionally, urban concentrations performed comparatively well during the crisis. While Stolarick and Currid-Halkett (2013) found that creative industries had a positive impact on economic resilience during the crisis of 2008/2009, they found this effect particularly in metropolitan areas. This changing geography correlates with previous observations of changing consumption, changing production and new economic forms like co-production, crowd funding and social entrepreneurship. These developments indicate that the production of links has a particular geography.

Before a link can be produced, it has to be defined and recognized as being of value. Thus, evaluation of a good depends on the visibility of its links. While this visibility is clear in standardized and established markets, they are unclear under conditions of uncertainty and when something new is integrated (Hutter and Stark 2015). In fast evolving fields like the shift towards sustainable and creative economies, what is sustainable, what is new and what is creative is object of negotiation. Thus, there is a lot of uncertainty involved and defining what is important or of value depends on the decisions, assessments, and signals of others (Aspers 2009). Due to these uncertainties, and the dependence on the decisions and choices of others, studies showed that valuation processes are highly time and place dependent (Kjellberg et al. 2013) and take place in arenas of debate and justification (Thévenot et al. 2000). Hutter and Stark (2015) for example distinguish between sites of professional valuation e.g. in art ateliers, the court, dining rooms etc. and sites of consumer valuation like homes, concert halls and cinemas. Menzel and Haisch (2016) show that densities of interactions in geographical proximity alleviate these uncertainties, yet only to a limited extent. Therefore, physical proximity is important for valuation, as it not only enables interactions, it also allow people to observe the decisions, opinions and behaviors of others. Additionally, these others should be diverse and different. As valuation depends on identities (Aspers 2009), different identities involved in valuation processes contribute different perspectives. A diversity of perspectives contributes to define which links are important. Thus, valuation under conditions of uncertainty about what has a value requires also involvement of a diversity of identities and perspectives to permanently integrate and reflect on other perspectives (Hutter and Stark 2015).

These conditions are given in urban quarters. Especially those fields in which what is of value permanently has to be negotiated require such places (Menzel and Haisch 2016). This condition would explain why especially creative industries form dense concentrations in inner-city quarters, while science based industries are spatially disperse and located in suburbs and low density neighborhoods (Spencer 2015). Lack of standards and definable trajectories require permanent interactions to evaluate and reassure which novelty is of relevance, of value, and creative. With the increasing uncertainties about what is of value, like in times of crises since 2008, the propensity to spatially concentrate would increase.

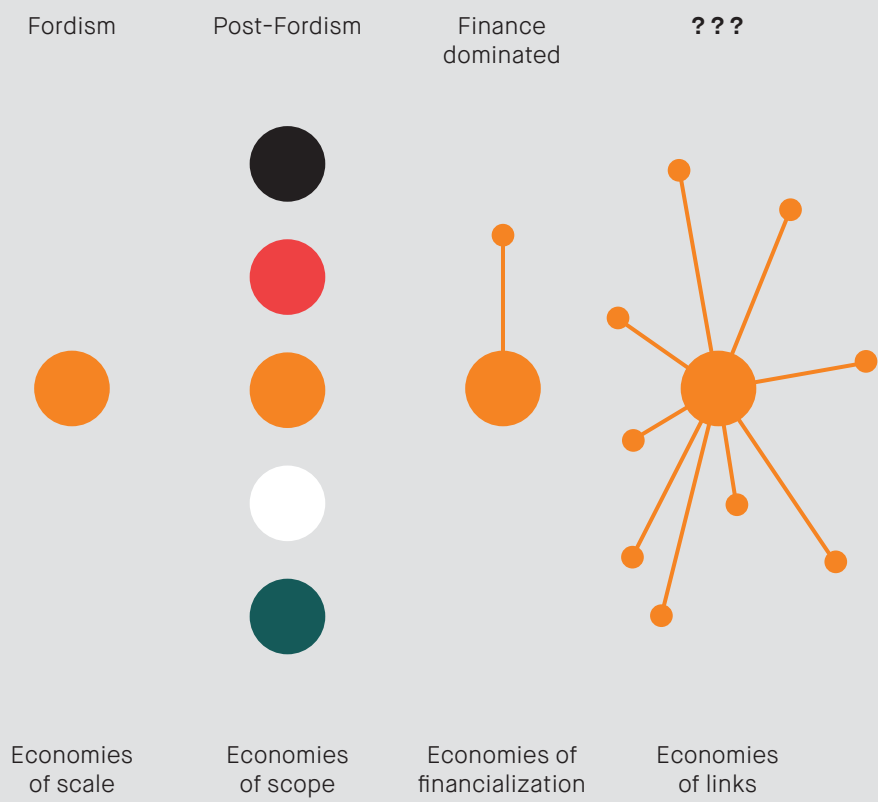


Figure 2 Phases of Capitalism

Phases of Value Creation

The distinction between evaluation and valorization allows investigating changes in demand and production over time. This section will investigate how consumption and production is connected, how evaluation criteria for goods changed over time and how firms reacted to these changes. Via consumption, valuation is inherently connected to production. Langlois (2003) described this connection as follows: “the technology of production and the organizational structure that directs production [...] jointly must solve the problem of value: how to deliver the most utility to ultimate consumers at the lowest cost” (Langlois 2003: 353f, emphasis in original). Callon et al. (2002) describe how the decision of consumer for a particular product depends on the way the consumer will be affected by it. Accordingly, a change in consumption practices affects the product and how it is produced; and changing orders of worth (Boltanski and Thévenot 2006) co-evolve with changing forms of production.

Regulation school connected patterns of demand with patterns of production. This theory distinguishes phases where this connection created a stable structure (Boyer 1997, Lipietz and Slater 1992). During mass production of Fordism, consumers demanded standardized household goods (Boyer 1997). Due to these standardized goods, evaluations took place via price. Accordingly, firm strategies were directed to produce cheaper goods. Several developments facilitated these increases in efficiency. First, the size of markets increased, also geographically, which allowed productivity gains by economies of scale and increasing division of labor. The larger markets allow “higher-fixed-cost methods” (Langlois 2003) and decreased unit costs. Second, progress in production techniques and production organization like scientific management additionally increased productivity. These increases both high and able to transfer within and between sectors, i.e. firms could imply production methods also from other sectors. To internalize these productivity gains, firms integrated upstream activities, which resulted in the highly vertically integrated Fordist company (Robertson and Langlois 1995). This high-throughput production system required low variations and a stable flow of materials (Langlois 2003).

This connection between consumption and production changed with the crisis of Fordism (Boyer and Durand 1997). Life styles fragmented and with it demand. Evaluations took place via diversity. Demand became less predictable and more volatile. In contrast to creating value via price competition, firms benefited from economies of scope. A network based production system of vertically specialized firms that was able to quickly adjust to changing demand conditions evolved (Piore and Sabel 1984). Firms created value that were able to quickly adjust to these changes. Spatial proximity reduced transactions costs to deal with this volatility, which resulted in the emergence of regional production systems (Becattini 2002) and newly industrialized spaces (Scott 1988b).

The Fordist compromise that connected productivity growth with growth of wages weakened in Post-Fordism. The declining growth of wages resulted in consumption

decisions that also included the financing of the good. As a result, evaluations took forms of financing consumption into account. Firms reacted to it by financing consumption themselves, i.e. they created own banks and offered consumer credits. This dynamic emanates to large parts of the economy (Boyer 2000). For example, the financial sector in the UK exhibited a strong increase of financial sector output and GDP share between 1998 and 2008 (Burgess 2011, S. 234). This change towards finance industries marked an important deviation from the previous two. During Fordism and Post-Fordism, value was created via the production process, i.e. the product was either produced cheaper or more flexible. In what regulation theorist call a “finance dominated accumulation regime” (Boyer 2000), firms generated value by financing purchases or their products.

The argument of this paper is that this locus might change again and move even farther away from the product itself towards the production of links. Like the previous phases, an economy of links would be shaped by changes in consumption and production. On the consumption side, normative changes towards creativity and sustainability move the valuation of the product towards its links that are created by ethical or ecological forms of production and by connecting the product to entities that provide the product with a certain meaning. On the production side, developments like Industrie 4.0 or the internet of things lower entry barriers and push the locus of value creation away from pure production. Figure 2 attaches the economies of links at a sequence of stable regimes of production and consumption from Fordism, Post-Fordism and a finance dominated regime. It shows the change over time from economies of scale via economies of scope and economies of financialization to the proposed economies of links.

Conclusion

This paper started with the insight that different seemingly unconnected contemporary developments exhibit a similar pattern: we could observe a growth of creative and cultural industries, acceleration of sustainability transitions, new forms of production, and growth of cities and especially particular quarters in these cities. This paper argued that these patterns are connected by an underlying dynamic, namely the change of the locus of value creation from the product to its links. The hypotheses put forward is that the production of links might shape a future economy as well as its geography, which is of course debatable. There are other far reaching concepts like post growth (Jackson 2009), sharing economy (Schor 2014), or “zero marginal cost society” (Rifkin 2014). Yet, the approach presents here integrates both changes in consumption and production and does not decide for a particular normative direction. Instead, it intends to focus on the fundamental shift that underlies all these (possible) developments. Additionally, the paper described developments only in Western economies. Yet, lessons from the Fordist crisis provide a blueprint how the economies of links affect countries of the Global South. After the Fordist crisis,

forms of mass production did not cease to exist, but moved to economic peripheries. This move of mass production led to “new international division of labor” (Castells 1993). Nowadays, we find forms of flexible production and financialization becoming more prevalent in the global south. China forms “specialized towns” to flexibly produce one particular good (Bellandi and Di Tommaso 2005). These localized complexes allow flexible production. Ouma (2014) shows how western forms of marketization affects agricultural production in Africa. Thus, the production of links changes not only core-periphery patterns in the Global North, but also north-south relations.

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On creativity:

From conceptual ideas towards a systemic understanding

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Introduction

Creativity has replaced raw materials or natural harbors as the decisive fountainhead of economic growth. In this emerging creative age, successful regions must develop, attract and preserve high-skilled and creative people who generate innovations and stimulate economic growth by means of entrepreneurship (Gertler et al., 2002: ii). In other words, Creativity is en vogue. In particular, in the last two decades or so, the concept of creativity has experienced a tremendous interest, a widespread popularity and became a highly influential topic in science, business and politics.

With regard to science, the opening address of the then President of the American Association of Psychologists J.P. Guilford at the 1950 annual conference can be considered as the birth hour of modern creativity research (Guilford, 1950). This ‘creativity wave’ primarily swashed into different sub-disciplines of psychology during the 1960s and 1970s; later into geography in general and economic geography in particular. The process was accompanied by a remarkable increase in the number of scientific papers dealing with this phenomenon in its title (Urban, 2004: 5). Although introduced by G. Törnqvist as early as 1983 (Törnqvist, 1983), the notion of ‘creativity’ became popular in economic geography not until the last 15 years by means of the seminal contributions by Allen Scott ‘The Cultural Economy of Cities’ (Scott, 2000), Charles Landry ‘The Creative City’ (Landry, 2000) and last but not least Richard Florida ‘The Rise of the Creative Class’ (Florida, 2002).

In business, “creativity... is now (considered) the decisive source of competitive advantage” (Florida, 2002:5) and the main driver for economic growth in advanced and knowledge-based economies (e.g. Santagata 2004: 77, Potts 2007:8). Some researchers even claim that the society is experiencing a substantial paradigm shift as a whole resulting from the rise of the so-called creative class. This shift is comparable to a formation crisis analogous to what happened during the transformation towards the agro-culturalization, industrialization or a service society (Florida, 2002: 56). Not surprisingly, this upheaval is characterized as ‘the creative age’ (Florida, 2002), a ‘cultural-cognitive capitalism’ (Scott, 2010) or ‘expressive revolution’ (O’Connor et al. 2010).

By now, this trend also found its way into politics. The latter is evidenced in the wake of a broad awareness towards creativity recognizable at different jurisdictions and spatial scales of administrative authorities. Within the European Union for example, a transition can be monitored starting in the 1960s from merely intra-sectoral science-, technology-, and innovation-based policies towards trans-sectoral creativity policies (Borrás 2003, Suwala 2010) underlined by a recent ‘European Year of Creativity and Innovation’ in 2009 or institutionalized thereafter through different events like ‘The European Day for Artistic Creativity’ since 2013.

This adjustment underlines the fact that creativity possesses manifold facets and fields of application within the arts /culture, science, technology and the economy. Moreover,

creativity can be apprehended as the forge, which provides the gateway for a successful implementation of ideas in all above-mentioned fields.

But which circumstances make ‘creativity’ so exciting for geographers? And which research gaps can be identified? First of all, it should be examined if creativity is always something positive and desirable as suggested by various influential books (e.g. Landry 2000, Florida 2002) and research reports (e.g. UN 2008). In 1986, the Nigerian novelist and Nobel laureate Wole Soyinka alluded the equivocal nature of ‘creativity’ in his honorary speech. Building upon Central African mythology, he introduced the Yoruban God Ogun as the main keeper of creativity. This principal figure symbolizes both The ‘Creator God’ and the ‘Destroyer God’ at the same time (Soyinka 1987). Austrian Economist Joseph Schumpeter heralded an equivalent principle almost half a century earlier with regard to the logic of capitalist production. His seminal contribution emphasizes ‘creative destruction’ as a process which ‘incessantly revolutionizes the internal economic structure, incessantly destroys the old structure and incessantly creates a novel one’ (Schumpeter, 1950:137). Therefore, creativity always engenders winners and losers (Cropley et al. 2010). Studies in economic geography about cultural and creative industries provide a good example for this observation. Creativity can encourage both a desirable transformation of and economic redevelopment in old-industrial cities (e.g. Scott 2000, Florida 2002) as well as gentrification, segregation resulting in a new economic polarization among the population (e.g. Peck 2005, Krätke 2011). In summary, it can be stated that creativity encompasses – like other related phenomena (e.g. innovation) – an ambivalent character (Howkins 2001, DeFillippi et al. 2007).

The ‘creativity hype’ has nurtured both manifold insights by dint of academic studies, research reports and policy papers as well as an array of serious shortcomings concerning the academic understanding of ‘creativity’. With particular regard to human and economic geography, an inflationary and unwitting utilization of the term ‘creativity’ has prevented an extensive debate and revealed four main deficiencies about: (1) the nature of creativity, (2) the process of creativity, (3) allocation of meaning (to) creativity as well as (4) the general relationship between creativity and space. This paper primarily deals mainly with the first deficiency; namely the nature of creativity with a distinct focus on creativity in the arts and sciences which constitute the fundament of new phenomena like the so-called cultural and creative industries and academic entrepreneurship. In what follows, these types of creativity will be denoted as artistic creativity (creation) or scientific creativity (discovery). Hereby, a lack of both a substantial definition of creativity (external borderline) as well as a differentiation of particular types of creativity (internal borderlines) can be identified (Suwala, 2014). Only in very few cases in economically oriented spatial sciences, a systemic analysis of the nature of creativity (e.g. Meusburger 2009) or an explicit awareness of different types of creativity was acknowledged (Florida 2002, Krätke 2011). Influx of knowledge from interdisciplinary studies – usually a strength of economic geography – is surprisingly scarce here. Only few interconnections between economic geographers and psychologist are visible in this domain (Törnqvist 1983, 2004, 2011; Florida 2002, Scott, 2010); vice versa (between psychologist

and economic geography) citations or even mutual anthologies are very rare (Runco 2007 S.172, Meusburger et al. 2009). At the same time, specific types of creativity (innovation, entrepreneurship) are studied at length. Is it little affinity of psychology – the mother of modern creativity research – and especially economic geography that makes overlapping literature so marginal? Or are psychological approaches not yet representable in economic geography, like were sociological ones three decades ago? Is the primary focus on the inner life of individuals not compatible to the current paradigm of a highly networked and collective world? In this realm, these and many other questions stayed largely unexplored in economic geography and regional science.

Therefore, the paper elaborates on the ‘myth’ of creativity first, before dealing with origins and properties of the term. The third section sheds some light on definitions of creativity in general, here the framework of a multidimensional understanding and a holistic view of creativity will be developed, allowing to distinguish between the peculiarities of creativity types where in particular creativity in the arts and sciences will be contrasted against well-known properties of technological (innovation) and economic creativity (entrepreneurship). Hereby, a systemic definition of creativity is proposed and discussed in the concluding section. In detail, the paper attempts to tackle the following questions: What is creativity? How can creativity be defined? Which components shall be integrated? Who or what is creative? Who or what is non-/not-creative? Is it a nerd, an inventor, a scientist, an entrepreneur or an artist? Or even everyone? A particular work- or problem-solving process? The problem itself? Its environment (e.g. atmosphere, particular settings or places)? Or rather the product as a result of the problem-solving process? Do various types of creativity exist? How does ‘creativity’ relate to discoveries, inventions, or innovations?

These questions and the resulting fuzziness is a logical consequence taking into account that “creativity is an extraordinary difficult word that means many different things to different people” (Scott, 2010: 119). This inconsiderate fascination towards ‘creativity’ conveys a superficial, tentative and arbitrary interpretation of the term mostly carrying the semblance of singularity (Sonnenburg, 2007). In economic geography – just like in everyday language often the concept of ‘creativity’ remains unquestioned resulting in false connotations, persistent stereotypes and perpetual myths. Hereby, ‘creativity’ is frequently used as a hollow headline, catchphrase, slogan or buzzword (e.g. Markusen, 2006: 1938). For example, Krätke accentuates that “uncritical and superficial notions (...) currently dominate the creative cities debate” (Krätke, 2011: 2). The following conceptual ambiguity of the term escalates either in a confusing variety or in earmarking instrumentalization by individuals, communities, enterprises, city and/or regions. Therefore, many urban promotion agencies advertise having a creative class and a creative environment or creative industries within a creative city. Everyone defines creativity in its own way. What is left are nothing but word capsules, where ‘creativity’ is described and defined by creativity (Suwala, 2014). Overall, creativity remains a black box, where studies are consecrated on causes and conditions, respectively effects and consequences of the phenomenon rather than its very nature (Kirchberg, 2010: 24).

The myth of ‘creativity’ – the onerous way from the genius to a mundane capability

The term ‘creativity’ has its etymological origin in the Latin word of ‘creare’ signifying the act to originate, to initiate, to father, to beget, to bear, to accomplish or to fabricate. This very act has been liaised to creative wisdom, abilities or faculty as well as creative thinking and the creative mind (Stockhammer 1983). This embodiment was initially drawn from theology as Lawson puts it in his *Theo-politica* “In Creation, we have God and his Creativity (as Occam and Bacon expresse it) and the thing created” (Lawson 1659, viii, 39) and refers to the ‘Creator God’ being able to create something out of nothing, out of thin air or from scratch. Not surprising, ‘creativity’ or creative faculty was deprived to humankind for a long time (Tatarkiewicz, 1980:254). From the 17th century on, creativity was for the first time also assigned to outstanding personalities (geniuses) with extraordinary capacities as Ward reflects it in his *History of English dramatic literature* “the spontaneous flow of his (sc. Shakespeare’s) poetic creativity” (Ward, 1875:506). Thereafter, almost two centuries went by until the concept of creativity was detached from related terms like imagination, originality, genius, talent, freedom and individuality (Albert / Runco 1999, 17). Beginning in the period of Enlightenment, a solid foundation for this altered appreciation of creativity was laid through the emancipation from rigid religious beliefs, the rise of bourgeoisie, the institutionalization of science, and debates around Smithian *The Wealth of Nations*, 1776, Malthusian *Essays on Populations*, 1798 or Darwian *The Origins of Species*, 1859. These upheavals gradually fortified the prevailing opinion of creativity not being a mystic gift. Nevertheless, science primarily focused on studies investigating the genetics of geniuses (f.e. Michaelangelo, Da Vinci) during this time (Galton, 1869; Freund 1958). Even Schumpeter was heavily influenced by this genius theory – assuming two types of species: the ordinary person and the (economically) creative genius (entrepreneur) while bringing forth his idea of Creative Destruction (Schumpeter, 1911). These studies affirmed the assumption, that creativity formed an essential component of intelligence (Terman, 1925; Cox, 1926).

Not until the second half of the 20th century creativity research disentangled from intelligence research. A milestone advocating this distinction marks the speech of the back-then president of the American Psychological Association, J. P. Guilford at the eponymous annual meeting in 1950 (Guilford, 1950); hereafter, a holistic exploration of human creativity followed driven by democratization of society and the broadening of the term towards all humans (Brodbeck, 2006: 247). Voices within this zeitgeist heralded the expiration of the ‘genius epoch’ both in science and in the arts (Matussek 1979, 7). A contemporary understanding of creativity “recognizes the potential for creative achievement in all fields of human activity; and the capacity in the many and not the few” (NACCCE, 1999: 30) and emphasizes “creativity as an essential feature of our life” (Florida, 2002: 30). Creativity is – albeit with different characteristics and types – inherent in all humans (Brodbeck, 1996). Based on this broad understanding a multidimensional conception of

creativity has been established not only taking the creative person, but also the creative problem, the creative process, the creative persuasion, the creative product and last but not least the creative place – also known as the six P's (perspectives) – into account (Runco, 2007).

Contrary to the latter, the term creativity is frequently penetrated with inaccurate associations, persistent stereotypes and daring myths in the current language. Three common clichés will be elaborated in the following. First of all, it will be often claimed that creativity is a gift of the few and cannot be learnt or acquired (cf. the epitomes of Einstein, da Vinci or Goethe as universal geniuses) (Lange-Eichbaum, 1928). In science (esp. engineering), creativity was long considered as a “black art, possessed by some, and not by others” or the “result of individual champions rather than systematic” (Crompton and Crompton, 2000: 1). A second assertion resulted from the fact, that creativity is imagined to be solely required in certain domains, notably in sciences and the arts. Thus, it is hardly surprising that the general category of the ‘creative industries’ encompasses sectors primarily containing artistic or cultural activities. ‘Creatives’ or creative persons are consistently associated with designated professions (e.g. writers, painters, movie makers). In this context, Runco notices an ‘art bias’ in the current language and comprehension (Runco, 2007: 384). Thirdly, it is alleged that creativity is connected to certain personalities and/or spaces. The tenor of contemporary literature argues that specific individual traits (e.g. curiosity, ingenuity, risk taking, autonomy, impartiality, nonconformity etc.) (cf. Landry, 2000: 13; Florida, 2002: 31; Preiser, 2006: 61) or idiosyncratic spatial configurations (e.g. centers, agglomerations, global cities, cluster of creative networks) (cf. Törnqvist, 1990: 109; Scott, 1997: 324) promote creativity. Studies accentuate curious scientists, eccentric artists or even tolerant cities (Florida, 2002: 252, Sonnenburg, 2007: 1). Those claims are not fundamentally wrong – as studies also emphasize smaller towns or disperse networks in peripheral areas as cradles of creativity (van Heur, 2009: 1548; Gibson, 2010: 1; Bell, 2015: 222) – however they illustrate only a restricted view of the term. These generalizations carry the risk of creativity being considered separately from specific contexts and perspectives (e.g. cultural, social or economic). Thereby, a balanced and multi-facted, conception of creativity will be done wrong.

Origins and properties of creativity

Multiple perspectives of the term ‘creativity’ led to a number of manifold personal (e.g. mystic, pragmatic, psychoanalytic, psychometric, cognitive, character-based) and inter-personal (e.g. sociologic among others) approaches (Urban, 2004: 28; Sonnenburg, 2007: 68). Mystic explanatory schemes are primordially personal approaches and underline – as the history of ‘creativity’ suggested – the muse as the fountainhead of inspiration (Tatarkiewicz, 1980; Brodbeck 1996). This view of the Greek philosopher Plato is best exemplified

by the following metaphor: “The creative person was seen as an empty vessel that a divine being would fill with inspiration. The individual would then pour out inspired ideas, forming an otherworldly product” (Sternberg and Lubart, 1999: 5). Pragmatic approaches are practice-oriented and aim to describe creative techniques during thought processes. In particular, the method of ‘lateral thinking’ (De Bono, 1970) had great commercial success. Hereby, different types of reasoning (fact-based, intuitive, critical, generative) were applied in order to penetrate issues from different angles and stimulate creativity. Within psychodynamic approaches creativity sparks from the bipolarity of deliberately experienced reality and unconscious motivation. In this realm, Freud propagated that scientists and artists accomplish creative products (e.g. books, paintings) to reveal unconscious desires (Freud, 1958). Psychometric approaches stress thinking and trouble shooting capacities as the main sources of creativity. Experiments evaluating various skills of testees (e.g. fluency, adaptability, originality, and particularity of responses) have been developed. The idea of divergent thinking – a type of productive thinking where problems are tackled in an open, dispersed, compartmentalized and ludic manner without critical objections to loosen mental barriers – played a significant role (Guilford, 1950; Torrance, 1974). Cognitive approaches deal with intellectual procedures as forges of creativity. Creativity is considered as an exceptional result of an usual intellectual combination (Weisberg, 1993). Character-based approaches highlight personality variables and motivation as repositories of creativity (Amabile, 1983; Simonton, 1984).

Interpersonal approaches elucidate creativity not as an individually induced phenomenon, but as a team-based circumstance from a sociologic perspective. Despite manifold notions like ‘team creativity’, ‘group creativity’ or ‘swarm creativity’, hardly a profound discernment between individual creativity in social context and group creativity has been ascertained (Sonnenburg, 2007: 51). These interpersonal approaches flourished in conjunction with overcoming individualism as a general perspective, the democratization of creativity as a term and the global division of labor from the 1990s onwards. They involve innumerable group configurations, attributes and dynamics while exploring origins of creativity. Hereby, heterogeneous groups lead to a considerably greater creative potential as a general rule, since combination possibilities are heightened. Biographies of group members, however, should not be too diverse. Otherwise, a lack of a common language or significant age differences appear obstructive (Nijstad and Paulus 2003: 328). Socio-economic approaches introduce further variables like collective preferences, cost-benefit considerations, time constraints or various group sizes in order to detect optimal equilibria for collective creativity (Rubenson and Runco, 1995: 233). All interpersonal approaches indicate that the necessary knowledge required to create complex novelties can no longer solely be achieved by individuals and that creativity has its origin on a cooperative level (Sonnenburg, 2007: 69). In summary, “creativity can be expressed in collaborative as well as individual activities, in teamwork, in organisations, in communities and in governments” (NACCCE, 1999: 28). These intellectual capabilities are activated via cognitive and learning processes. “Learning provides important informational and procedural foundations for creative activity” (Scott, 2010: 119).

CONCEPT	PROPERTIES
CREATIVITY	creation of new knowledge by ingenious or random combination of all following elements, and also accepted as such
EXPERTISE	confirmed, highly specialized and customized knowledge base necessary for judgement and evaluation
COMPETENCE	proven and embodied knowledge, either methods-, subject-, or regionally embedded
KNOWLEDGE	Structurally cohesive information, based of a reflection, synthesis or context originating from intuitions, opinions, experience or values
INFORMATION	facts or personalized data with relevance or purpose
DATA	simple, descriptive observation of situations with allocation of meaning

Table 1 Creativity, knowledge, information and cognitive and learning processes (own illustration based on Malecki and Moriset, 2008: 29)

The main objective of creative agency consists of generating novel knowledge by variation of existing knowledge (Krätke, 2011: 13). But how are information, creativity, knowledge and learning processes related to each other?

Table 1 depicts the substantial relationships between those concepts. The cornerstones of existing knowledge are data and information. Transition from data to information only occurs through an allocation meaning or pertinence for an individual or a group. This information may be condensed to knowledge via a systematic subsumption (e.g. synthesis, contextualization, experience). In the wake of a tremendous division of labor in a globalized world, manifold and highly specific knowledge bases were established. In the case, that the knowledgeable agent is able to internalize a specific knowledge base, competence or expertise may arise by dint of cognitive or learning processes or long-lasting experiences. Experts are most likely capable to generate new knowledge or creativity that will be accepted as such. This procedure is, however, anything but linear. Creativity may also emerge accidentally or by a dexterous combination of information (Malecki and Moriset, 2008). The crucial condition is that this novel combination obtains a meaning or will be accepted. In other words, cognitive and learning processes do not necessary lead to creativity (Scott, 2010: 199).

Although the presented personal and interpersonal approaches towards creativity fostered vital insights, this paper follows the ‘confluence approach’ (Sternberg and Lubart, 1999) – a sort of uniting scheme – not only taking the creative person into account, but also integrating manifold further perspectives on creativity. These perspectives align with the mentioned six P’s (problem, person, place, process, product, press) leading to additional variables as sources for creativity. These variables may be best apprehended as aggregated indicators of detail processes and are by far not so straightforward as they might look at first glance. Each indicator unites ‘a bundle of paradoxes’ expressing a contradictory relationship between two extremes that may be ascribed to the ambivalent nature of creativity (Cropley, 1997: 8; De Filippi et al., 2007: 517).

With regard to the creative problem to be solved – the first of the six P’s – it was consistently argued in literature that intrinsic motivation is the impetus per se for creativity. The basic idea is very intuitive: a problem will not be tackled due to external rewards, but due to the nature of the problem (Amabile 1996). In the meantime, however, studies demonstrated also the opposite; external incentives (e.g. fame, honor, awards, remuneration etc.) can equally take a positive effect on creativity as extrinsic motivation (Kasof et al. 2007). The creative person should always be considered in its complexity as ambivalent and contradictory being; intelligence frequently arises together with naivety, empathy with assertiveness (Csikszentmihalyi 1996). In his thirty years panel study, Helson shows that even personality traits like versatility and open-mindedness may be detrimental for the emergence of creativity under certain circumstances (Helson 1999). Hence, a tension between progressive (e.g. preference for a discourse with novelty based on new insights) and adaptive mindsets (e.g. preference for a discourse with novelty based on existing insights) appears to be auspicious for creative individuals (Kirton 1989). Consequently,

explicit characteristics cannot be assigned to creative places (or more precisely spaces), a perspective that is in the limelight of economic geography. The contradictory relationship will be portrayed here through the following pair of values (tolerant – conservative). Florida (2002), for example, emphasizes tolerance in places/ spaces as a crucial context-based condition for the formation of creativity, whereas Helbrecht (2011) underlines the prevailing intolerance of individuals in creative places/ spaces. This tension could be, of course, also revealed by a large variety of further opposite indicators like diversified-monotonous/ isomorphic or variable-stable; we only need to think of the well-examined concepts of diversity (Jacobs 1961) or isomorphism in places/ spaces (DiMaggio / Powell 1983). Moreover, Hautala and Ibert (forthcoming) stress tensions immanent to space (e.g. center-periphery); Suwala showed additional opposite values to analyze peculiarities of creative spaces (e.g. concentration – dispersion, interaction – isolation, perception – agnosia) elsewhere (Suwala, 2014). From the process perspective, a continuum between divergent and convergent thinking / operations is reasonable. While on the one hand divergent operations are early found in psychometric approaches to explain creativity (Guilford, 1950; Torrance, 1974), newer studies were also able to show the formation of creativity bolstered by convergent operations on the other (Crompton, 2006). From the press (the idea of communication) or persuasion perspective (the idea of conviction), it can be suggested to think either of preserving or channeling of creative ideas (Simonton, 1988). To this end, manifold studies have indicated that creativity has to be carefully communicated at the right time (capture the zeitgeist, e.g. within an economic upswing, a receptive political environment or a favoring trend), otherwise it runs the risk of not being accepted and not gather a meaning (Crompton and Crompton, 2008: 360). Amongst others, the following scientist or artist have been partly or entirely misjudged during their lifetime (e.g. Copernicus, Galileo, Kepler, Rembrandt, van Gogh, Chopin) and achieved recognition only posthumous (Csikszentmihalyi, 1999; Preiser, 2006). Creative products have also to satisfy two disparate conditions at the same time as Crompton points out “for a product to be regarded as creative, it must possess not only novelty, but also relevance and effectiveness. In other words, a creative product must be not only original and surprising (novelty); it must also satisfy the need for which it was created” (Crompton, 2006: 393). A balance between novelty and routine (in terms of reliability and effectiveness) is the crucial criteria for the assessment of creative products, or creation in general. This gateway will be examined in depth later in this paper as it has the capacity to integrate most perspectives and is expedient for economic geography.

Definitions of Creativity

Creativity is complex and elusive (e.g. Simonton 1998; Villalba 2008). Depending on the discipline, objective and purpose of the study, “definitions are formulated in terms of a product, such as an invention or discovery; others in terms of a process, a kind of person,

PERSPECTIVE	CONTINUUM OF OPPOSITES	EXAMPLE
PROBLEM	Intrinsic (Amabile, 1996) vs. Extrinsic (Kasof et al. 2007)	Detection of a problem: focus on self-identified & unexpected problems (internal trigger) Approval of a problem: focus on existing problems (external trigger)
PERSON	Progressive (Helson 1999) vs. Adaptive (Kirton 1989)	Autonomous agency: preference for the spontaneous, unconventional and openness Concurring agency: preference for the well-considered, tested and familiar
PLACE	Tolerant (Florida 2002) vs. Conservative (Helbrecht 2011)	Tolerant environment: diversity, uncertainty, variation, risk-taking Conservative environment: intolerance, isomorphism, stability, risk-adverse
PROCESS	Divergent (Guiford 1950) vs. Convergent (Cropley 2006)	Heterogeneous sequences: idiosyncratic, redundant, ramifying, random Homogenous sequences: logic, thorough, purposeful
PRODUCT	Original (Boden 1990) vs. Effective (Runco 2007)	Novel radical, and surprising objects Effective, enhanced and conventional objects
PRESS	Published (Simonton 1984) vs. Preserved (Cropley and Cropley 2008)	Transparent, liberal, exclusive, protective

Table 2 Perspectives on, continuum of opposites and variables influencing creativity (own illustration)

or a set of conditions” (Torrance, 1971: 552). The intricacy of the term may, however, simultaneously be convenient, if and when a closer and more detailed consideration and application results in expanding the epistemological horizon for further analysis (Runco, 2007: 376). The majority of definitions occur via the presented six perspectives.

Whereas the humanities (in particular psychology, sociology) focus on creative personalities or cognitive mechanisms concerning creative processes (problem), engineering and economics place their emphasis on prototypes or creative products as results of collaborative practices. Communication and media studies follow up with the dissemination of creative results (press), spatial sciences traditionally with spatial premises and effects of creative activities (place). All disciplines start basically with an initial problem. These idiosyncratic interrogations can be found in various potential definitions. From a psychologist perspective “creativity is merely a special class of problem-solving activity characterized by novelty, unconventionality, persistence, and difficulty in problem formation” (Newell et al., 1962: 66), while economic geographers contemplate “the constituents of creativity and their interrelations materialize in social macro phenomena called creative environment, milieu, or context” (Meusburger et al., 2009: 3). Economics seem to have reached a general agreement over the last decade that “creativity involves the production of novel, useful products” (Mumford, 2003: 100); media scholars survey creativity as a condition, but also as a warrantor for precious communication that can rigidify long-lasting teams, images, or even trademarks (Negus and Pickering, 2004). Runco even argues that creativity should not be employed as a simple noun without further specification and rather utilized in a context (cf. artistic creativity) or as an adjective (cf. creative product) (Runco, 2007: 378). In fact, creativity as a noun has only entered scientific literature in the 1920s or 1930s (Oakley, 2009: 403). Since then the noun ‘creativity’ will be – regardless of the perspective – associated both in current language and in scientific papers with alteration or creation of ‘novelty’. “The core of definitions of creativity is the production of something new and original” (Landry, 1973: 111). This component has ever since been a fundamental feature within definitions of creativity (Sternberg and Lubart, 1999). ‘Newness’ or more precisely ‘novelty’, however, is subject to certain conditions. Novelty has to be deemed ‘meaningful’ or ‘appropriate’ (Hennessey and Amabile, 1988). “Creativity is the ability to produce work that is both novel (i.e. original, unexpected) and appropriate (i.e. concerning tasks constraints)” (Sternberg and Lubart, 1999: 3). This semantic content only evolves through an allocation of meaning, a constitutive attribute of human creativity (Preiser, 2006); as a result ‘meaningful novelty’ emerges. This definition of creativity ‘as something with meaningful originality’ will be hereafter referred to as creativity in the narrow sense (cf. Moles, 1957: 208).

In contemporary literature a predominantly extended definition of creativity is evident. Alongside the originality or astonishment component, an effectiveness component took root in modern creativity research. The latter is expressed in definitions, where both adjectives like ‘new’, ‘surprising’, ‘unexpected’ and ‘useful’, ‘valuable’ or ‘fit for business purpose’ are enunciated (Joerges 1977, 386).

Bruner, therefore, labels creativity as ‘the generation of effective surprises’ (Bruner, 1962, 4). Firstly, the definition has to involve meaningful novelty (originality); secondly, this meaningful novelty has to be or utilized (effectiveness). A deviation from one of these criteria – e.g. novelty – in terms of a phantasy, blind awkwardness, eccentric and schizophrenic thought or inscrutable rebellious agency results in quasi-creativity (Heinelt, 1974; Feist, 1998). Newness or “the originality may take the form novelty, uniqueness or unusualness, or unconventionality” (Runco, 2007: 379) and has to be distinguished from the conventional use of ‘new’ in the current language. The consequence is that mass-assembled automobiles, for instance, would represent both a new and useful product. These products, however, are not creative, as it is merely new, but not novel. Only the alteration of the mindset or of the assembling process would render a creative car (Tatarkiewicz, 1980: 257).

Consistently, novelty that is impossible to utilize should be referred to as pseudo-creativity (Cattell and Butcher, 1968). Let us invoke another example of a creative product. The latter has to satisfy both criteria novelty and effectiveness. Novelty by itself is not a sufficient condition for creativity, in addition the effectiveness attribute (useful or valuable) has to be complied; otherwise the product is either bizarre or meritless, however, in all respect not creative, solely esthetic (Runco, 2004). Creativity is by no means only attached to tangible goods, but also “the production of original behavior or modes, rules, or objects (...) in order to resolve certain situations” (Sternberg, 2006: 8). Hereby, effectiveness is not merely meant in a pragmatic sense, for intangibles (e.g. behavior or thoughts) it can be judged on purely intellectual or esthetic, however socially negotiated and accepted, criteria that stand the test of ‘usefulness’ (Feist 1998).

The paper predominately complies with this conception of creativity. The only extension is a decomposition of the ‘effectiveness component’ of creativity in two attributes: ‘useful’ and ‘valuable’; the attribute ‘useful’ represents, first and foremost, a societal benefit, which is collective negotiated or endorsed and either of functional, practical, public or charitable nature; the attribute ‘valuable’ corresponds with an economic benefit generated by (monetary) value added or as Krätke puts it “everyone can be creative in one sense or another, but we restrict the term here to creative work that is economically valued” (Krätke, 2011: 12). This distinction is particularly helpful when the main objective is an attempt to investigate upon the very nature of creativity in arts and sciences against other types of creativity. Moreover, the economic attribute of ‘effectiveness’ can be isolated and a clearer line between traditional and contemporary understandings of creativity drawn.

In summary, we obtain three constitutive attributes for creativity: ‘meaningful and original’, ‘useful’ and ‘valuable’. Therefore, ‘creativity can be defined as something with meaningful originality, which is useful and valuable at the same time’. Hereafter, I refer to this definition as creativity in the wider sense. Many scholars share the same view and treat creativity therefore as a composition of something original (new, unusual, novel, unexpected) and also valuable (adaptive, appropriate, useful, fit for business purpose) (e.g. Bailin, 1988; Boden, 1990; Ochse, 1990; Gardner, 1993) .

AUTHORS	ATTRIBUTE 'ORIGINALITY'	ATTRIBUTE 'EFFECTIVENESS'
Amabile 1983	NOVEL	VALUABLE
Ochse 1990	UNEXPECTED	GOOD
Boden 1990	ORIGINAL	VALUABLE
DTI 2005	NEW	FIT FOR BUSINESS PURPOSE
KEA 2009	NEW	USEFUL

Table 3 Constituting elements of creativity (own illustration)

FREQUENCY OF QUERIES	"Artistic..	"Scientific..	"Technological..	"Business..
..Creativity"	474.000	103.000	51.300	26.300
..Discovery"	35.200	1.140.000	25.300	12.300
..Innovation"	172.000	314.000	6.030.000	129.000
..Entrepreneurship"	4.990	8.420	85.500	499.000

Table 4 Frequencies for queries with regard to different types of creativity (own illustration). Query on google.com on 8th November 2015

Types of creativity

“Creativity is possible in all fields of human production“ (Tatarkiewicz, 1980: 54). However, individuals or groups of individuals differ in the manner or allocation of resources, in their domains or motivation to name only a few points of departure while unfolding creativity. The results are manifold types of creativity (Feist, 1998: 291), ‘varieties of creativity’ (Barron and Harrington, 1981: 440) or ‘worlds of creativity’ (Krätke, 2011: 199), which all – and this is of interest in economic geography – can generate a certain economic benefit (effectiveness component).

The various types are not restricted to the arts or culture, but are also subject in endeavors such as science. “It could be argued that while creativity, innovation, and entrepreneurship are related phenomenon, their usage seems to concentrate in different areas of endeavour. The arts tend to use creativity, science tends to prefer innovation, and business is most likely to use the term ‘entrepreneurship’” (Wyszomirski, 2004: 37). Albeit other combinations as ‘artistic innovation’ (Towse, 2003: 6) or ‘business creativity’ (Acheson, 2003: 251) are conceivable, everyday understanding of different types of creativity can be easily checked by frequencies for combined queries by dint of web-based search engines.

The frequencies in table 4 point to the deviating relevance of creativity depending on the domain and the existence of varieties of creativity; therefore it is legitimately to refer to artistic /cultural creativity (creation), scientific creativity (discovery), technological creativity (innovation) and economic creativity (entrepreneurship) as different types of creativity (cf. Nyström, 1995: 67; Florida, 2002: 33). Alongside with the definition of creativity in the wider sense, this distinction has been already undertaken since the 1960s when creativity was defined as ‘Hervorbringen von effektiven Überraschungen’ (origination of effective surprises) implicitly consisting of both an originality component and an effectiveness component. Interestingly, those different types of creativity were additionally distinguished according to the nature of their effectiveness – a similar method can also be also applied towards originality as we will see later – leading to artistic/ cultural creativity as ‘metaphoric effectiveness’, scientific creativity as ‘prediction effectiveness’, technological creativity as ‘mechanical effectiveness’, and economic creativity as ‘monetary effectiveness’ (Bruner, 1962: 4; Joerges, 1977: 383). Even if newer studies support these types of creativity by the same token (Hollandes and van Cruysen, 2009), there is still a lack of clarity between these types (Landry, 2008: XXIX).

The next subsections explore the four carved out types of creativity regarding the varied magnitude within the three constitutive attributes ‘meaningful originality’, ‘useful’ and ‘valuable’ of creativity. Hereby, it is also important to diligently elaborate on technological and economic creativity in order to obtain idiosyncratic features of creativity in the arts and sciences.

At the same time, features of innovation and entrepreneurship are inevitably substantial components of the contemporary understanding of creativity in the arts and sciences, in particular against the background of the rise of cultural and creative industries or the ‘entrepreneurialization’ of scientific institutions.

Technological creativity

Schumpeter (1911) identified technological creativity (and the distinction between invention, innovation and diffusion) as the main driving force for economic prosperity more than a century ago. Invention is the creation of (meaningful) originality – in other words creativity in the narrow sense – and “is without importance to economic analysis” (Schumpeter, 1939: 85). Innovation is the first time application of the invention (useful attribute), diffusion its widespread implementation or first (economic) use (valuable attribute) (Schmookler, 1962; Mansfield, 1968). Interestingly, these connections and the formulation of a sequential model of Schumpeter’s ideas arose in the aftermath (Godin, 2006), he himself sees little dependence of innovation on invention or vice versa; “innovation is possible without anything we should identify as invention and invention does not necessarily induce innovation” (Schumpeter, 1939: 84). A modern holistic view of technological creativity would link invention ((meaningful) originality), innovation (useful) and diffusion (valuable) and treat technological creativity synonymous to innovation with an emphasis on its usefulness. The latter becomes apparent when identifying the very nature of innovation as “the generation, acceptance and implementation of new ideas, processes, products or services” (Thompson, 1965: 2) and their ‘effective application or usefulness’ to the organization (West and Farr, 1990). The very core of innovation is about the application and usefulness of novelty, economic success is important, but not constitutive (Baregheh et al., 2009).

The thin line between invention and creativity in the narrow sense can be approached through the broad formal acceptance of inventions by a community of experts in the form of patents (Huber, 1998). The patent registration requires meaningful novelty, which implies a progress in the respective domain and where an industrial exploitation cannot be ruled out; in other words: ‘patents protect useful ideas’ (Hutton, 2007: 98). Although the attributes ‘originality’ and ‘usefulness’ are mandatory for inventions or patents, the latter grant no guarantee for an application, market launch or market diffusion. For this purpose, innovations are canonical through realization and implementation of inventions inducing technological progress. This progress might result in product, process or organizational innovation (within goods or services) or enhanced business methods and practices. In their definition of an innovation West and Farr state that “(...) the element need not be entirely novel or unfamiliar to members of the group, but it must involve some discernable change or challenge to the status quo” (West and Farr, 1990: 16). Consequently, every innovation

implies different magnitudes of creativity. A common classification scheme in compliance with the degree of effectiveness, for instance, is a distinction between fake, incremental and radical innovations. At the same time, creativity in the narrow sense is contemplated as *sine qua non* and a key driver for innovation (Suwala, 2010: 13).

Economic creativity

A particular species (founder or entrepreneur) is responsible for the value added from innovation. Innovation marks technological progress, Entrepreneurship the value creation thereof (Villaabla, 2008: 24); therefore, economic creativity concerns the attribute 'valueable'. The term 'entrepreneur' descends from Say (1803: 78); he considers the key responsibilities of entrepreneurs in their role as forecasters, experts and risk takers within liberal economic regimes (cf. Hayek, 1945; Schumpeter, 1950; Kirzner, 1973). "Entrepreneurs are those persons (business owners) who seek to generate value through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets" (Schmiemann, 2009: 152). Entrepreneurship can also be expressed as "the visualization and realization of new ideas by insightful individuals, who were able to use information and mobilize resources to implement their visions" (Nystrom, 1995: 67). Amabile explicitly mentions "entrepreneurial creativity" as "the generation and implementation of novel, appropriate ideas to establish a new venture" (Amabile, 1997: 20). All definitions distinguish between the idea (novel, exploration), its realization/ implementation and above all economic utilization (valuable, exploitation). The entrepreneur will be rather accredited for skills with regard to promotion and economic exploitation of novel ideas than for ideas themselves mostly originating from third parties. These skills embrace a potpourri of leadership, organization, marketing, finance, communication and law capabilities (Yusuf, 2007: 2). Similarly as with innovation, which can be distinguished with regard to various degrees of usefulness, also the concept of economic creativity can be classified in latent, nascent, infantile and entrenched entrepreneurship according to the extent of the value added (Sternberg, 2009: 8).

Artistic / cultural creativity

Creativity in the arts, most referred to as 'artistic creativity' (e.g. Amabile, 1983; Simonton, 1984; Runco and Bahleda, 1986; Krätke, 2011) delineates a subset of cultural creativity mirroring the subordinate relationship between the arts and culture. Artistic creativity involves a process, which rests predominantly on practiced values and intrinsic motivation

and is characterized by spontaneous, unexpected, insurgent or chaotic events (Amabile 1983, Simonton 1984). With regard to this features a clear line can be drawn between artistic and technological creativity, whereby “usefulness (...) while it is of central significance for technological creativity, artistic creativity is usually not of instrumental, but of intrinsic value” (Fritsch and Rusakova, 2010: 2). Another distinction can be performed along the mentioned juridical understanding of patents, copyrights and trademarks. Original expressions of artistic creativity with a non-functional character (e.g. the arts, music, literature) are not protected by patents, but by copyrights or trademarks up to 70 years as long as they do not represent ‘commercial activities’ like recordings, radio and TV broadcasting or specified printed materials adopting industrial scales (Hutton, 2007: 114). Artistic creativity can be launched by curiosity anywhere (e.g. home, work, school), is based on ingenuity and reliant on memories and experiences (Glow et. al., 2005); it involves “many interacting factors, including craftsmanship, expression, sensitivity and emotional resonance” (Gongatz and Mondejar, 2005: 11).

Both in current language and in scientific literature, ‘artistic creativity’ is often only referred to as ‘creativity’ as a result of on ‘arts bias’ (Runco, 2007: 384). In this paper, I introduce the term ‘creation’ as synonymous to artistic creativity and as a distinction towards discovery (scientific creativity). The traditional view only rudimentary connects artistic creativity to the attribute ‘useful’, hardly to the attribute ‘valuable’, and rather only to novelty bearing a meaningful, appropriate or intentional appeal. (Anheier and Isar, 2008: 3). “One of the most striking features of artistic creativity (...) is what we might call its immanent purposiveness” (Deutsch, 2002: 227). Hereby, this type of creativity involves “imagination and a capacity to generate original ideas and novel ways of interpreting the world, expressed in text, sound and image” (Throsby, 2010: 15). Moreover, this culture-based creativity is primarily the realization of a vision that results in something new, not necessarily functional (KEA, 2009: 31). ‘Novelty’ plays hereby the crucial role and can – just like innovation according to the different degrees of usefulness – be distinguished in line with various extents of ‘meaningful originality’. Boden for instance, differentiates between psychological creativity (P-creativity) and historical creativity. “If a new idea is novel with respect to the person concerned, we may speak of P-creativity (P for ‘psychological’). If it is also, so far as is known, new with respect to the whole of human history, we may speak of H-creativity (H for ‘history’)” (Boden, 2009: 179). Using a similar template, alternative perspectives classify originality accord to the extent in ‘everyday little C creativity’ and ‘big C creativity breakthroughs’ (cf. Tatarkiewicz, 1980; Gardner, 1993) or in subjective and objective creativity (Stein 1953). In this paper, I suggest – following NACCCE (1999) and Boden (2009) – a modified hierarchy for the extent of artistic creativity: personal, domain/ field-based, historical creativity (P-, F-, H-creativity). Whereas P- and H- creativity correspond to Boden’s concept, F-creativity indicates a novelty for an entire domain or field (e.g. discipline, community, industry). The distinction is also suitable for scientific creativity.

Scientific creativity

Creativity in science also commonly referred to as “scientific creativity, is the production of new and socially effective empirical knowledge” (Joerges, 1977: 383). Hereby, the attributes ‘meaningful originality’ and ‘usefulness’ are relevant. Although scientific creativity is, first and foremost, directed towards the discovery of novelty (e.g. idea, style of thought, objects, species, methods etc.) by a cognitive achievement, a certain societal benefit is equally desirable (e.g. via publication of papers or results, application of basic research etc.). In general, scientific creativity arises from a search (Runco, 2007: 390), where first of all, experiments are carried out, ideas and hypotheses formulated, in a later stage checked and problem-solving suggestions or results communicated (Torrance, 1995: 23). Discovery – no matter if theoretical and empirical – stems from a combination of logic, talent, chance and zeitgeist (Simonton 2004, 4); exploitation or economic benefit are subordinate. Depending on scientific discipline, Amabile contrasts between ‘heuristic’ or ‘subjective’ and ‘algorithmic’ or ‘productive’ formation of scientific creativity. (Amabile, 1983:33). Whereas psychology considers scientific creativity as a heuristic process based on peculiarities on individuals (Csikszentmihalyi, 1999), economics rather appreciate this type of creativity as an algorithmic process as the outcome of collective and productive work (Howkins, 2001). The most striking difference with regard to artistic creativity can be illustrated by means of the very act of creation (Koestler, 1964), since this is the focal point where scientific and artistic creativity draw their existence from. Although the basic logic of the creative act is similar within all types of creativity – even the technological and economic ones, however, to a much lower degree – and evolves through “the perceiving of a situation or idea (...) in two self-consistent but habitually incompatible frames of reference” (Koestler, 1964: 35), it is the mode how these two frames come together (are bisociated) which makes the difference. Whereas with this general process called bisociation scientific discovery depends upon ‘syntheses’, artistic creativity depends either on ‘juxtaposition’ or ‘collision’ of two formerly unconnected experience and thinking patterns (Koestler, 1964). In other words, it is the detection of concealed contexts, association or relationships revealing either an ‘ah ha’- (integration or synthesis), ‘aahh’- (juxtaposition) or ‘haha’-effect (collision) (Birch & Clegg 1996, Suwala 2014)

In this realm, Einstein essentially bisociated ‘energy and matter’ in his renowned formula ($E=mc^2$) by synthesis (Koestler, 1964: 233). Despite the focus on originality, the synthesis creating scientific creativity should also sustain requirements of the attribute ‘usefulness’. This claim holds equally true for the intersubjectivity of empirical methods or results and is related to the public traceability and reproducibility of the discovery. This implicit effectiveness norm can concurrently be treated as a formal requirement for the recognition of the scientific work (Joerges, 1977:386). According to other types of creativity, a certain hierarchy with regard to the extent of meaningful originality or discovery is appropriated. The same distinction as applied to artistic creativity taking a personal, domain/ field-based, and historical creativity (P-, F-,H-creativity) into account is reasonable (Tatarkiewicz, 1980; Boden 1990).

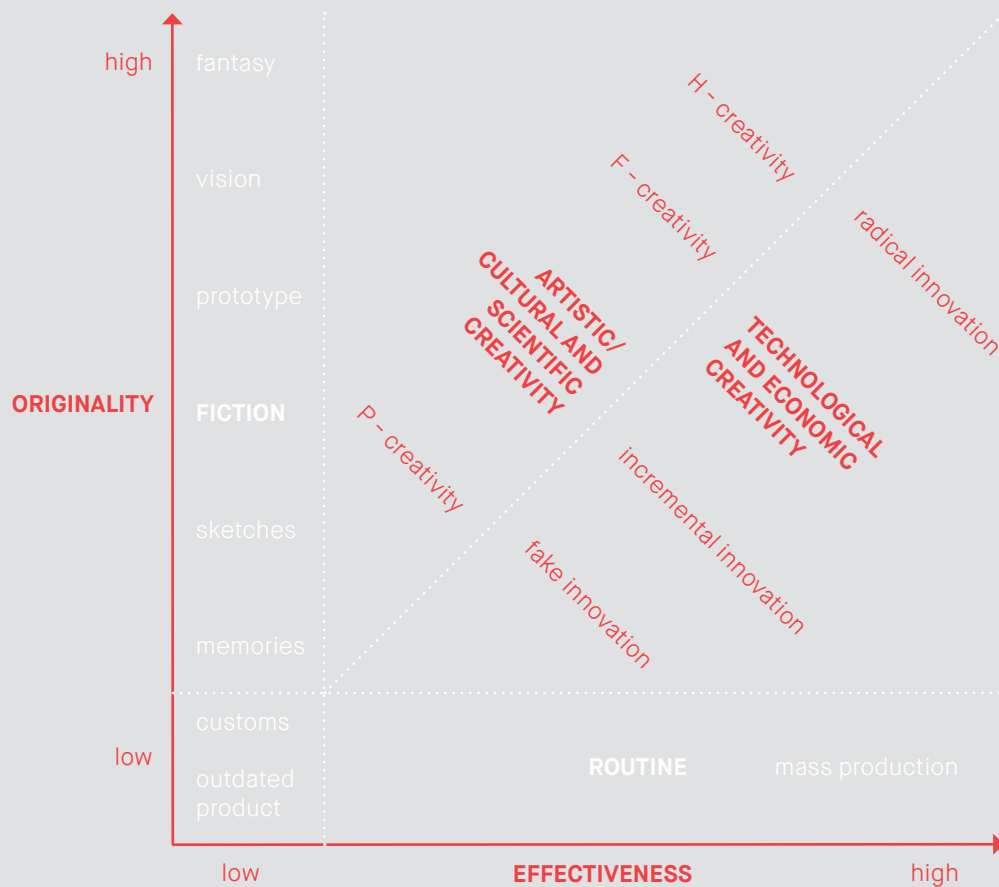


Figure 1 Balance between originality and effectiveness within different types of creativity

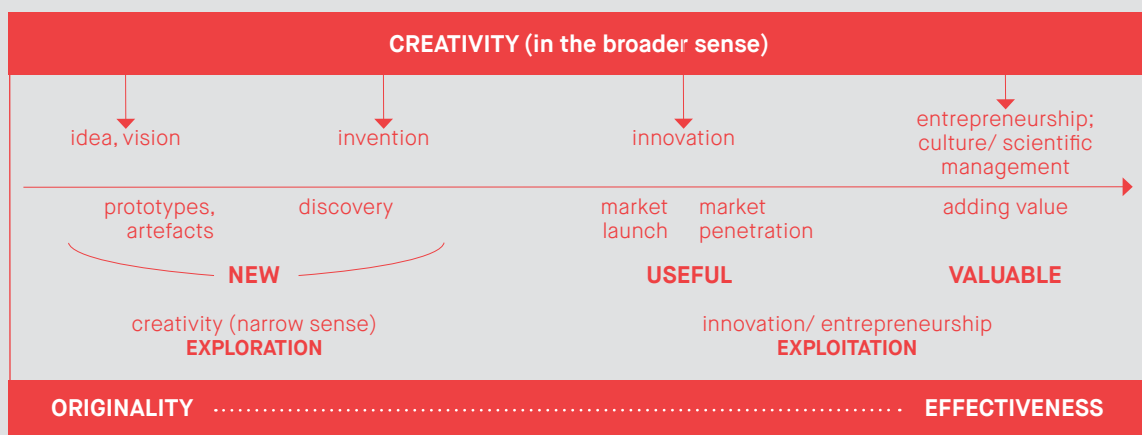


Figure 2 Relationship between constitutive elements and types of creativity

Synopsis and discussion

Figure 1 depicts the relationship between ‘originality’ and ‘effectiveness’ within the four different types of creativity. If we recall the definition of creativity, ‘as something with meaningful originality (originality component), which is useful and valuable at the same time (effectiveness component)’, types of creativity can be distinguished according to their main purpose. Whereas novelty (originality component) plays the crucial role within artistic (creation) and scientific creativity (discovery), practical or societal benefit (useful) and economic benefit (valuable) are paramount for technological (innovation) and respectively economic creativity (entrepreneurship). ‘Useful’ and ‘valuable’ as attributes are subsumed with the effectiveness component. In general, it takes a certain minimum level of both originality and effectiveness shall activities be considered as ‘creative’; is this minimum level not satisfied with regard to originality, we can speak of routine activities; in the absence of a certain amount of effectiveness, we talk about fictitious change, which can be either described as quasi- or pseudo creative. An absent minimum level for both conditions (originality and effectiveness) results either in meaningless, purposeless, and recurrent activities or antiquated or obsolete products. Notwithstanding, routine activities – just as standardized mass production – can undergo high level of economic benefit (effectiveness) without being creative. At the same, quasi- or pseudo creative activities (e.g. phantasy) might be very original. Radical or basis innovations (e.g. steam power, electricity) or historical creativity (e.g. Einstein’s theory of relativity) are characterized by tremendous meaningful originality, societal and economic benefit (effectiveness), however, only when meaning is allocated. On the contrary, personal creativity and fake innovation mostly involve insignificant originality and minor levels of effectiveness. As with any typology discrepancies and exemptions are undoubtedly possible. This illustration clearly draws a line between artistic and scientific creativity as well as technological and economic creativity with regard to originality and effectiveness components surely good for an overview and consistent with the traditional understanding of these creativity types. Admittedly, a transformation in the appreciation of those different types of creativity can be observed in the last two decades or so.

Whereas technological (innovation) and economic creativity (entrepreneurship) were mainly of economic significance in the past, artistic and scientific creativity have awoken hands-on and economic interest in the contemporary world. These developments are the results of two intertwined trends. Firstly, a remarkable convergence between the domains of economic and culture / or the arts led to an often described ‘aestheticization of the economy’ and / or a “commodification of culture“ (Lash and Urry, 1994). Hereby, extensive segments of the economy carry a peculiar cultural or artistic content in their products, whereas art is offered and demanded on competitive markets of capitalist society by commercial stakeholders. Secondly, similar tendencies emerge between the domains science and economy under the heading of ‘mode 2’ of knowledge production (Gibbons et al. 1994). Catchwords like the ‘knowledge or knowledge-based economy’ elucidate the loss of the previous monopoly of institutional knowledge production by universities or govern-

mental research facilities (mode 1). Numerous commercial think tanks enter competition with those traditional institutions, and often supply and demand decides what kind of knowledge will be produced. This competition simultaneously leads to an inevitable reconceptualization of universities and their public remits. The practical implementation and economic realization of basic research findings calls for a 'third mission' of economic development by the entrepreneurial university in addition to research and teaching as well as an appropriate academic knowledge management (Etzkowitz et al., 2000: 313).

Figure 2 illustrates a process-like model of the elaborated types of creativity. Despite its rather linear and mechanistic outline it was shown in detail elsewhere that the process might be reciprocal (Lubart, 2000-01), recursive (Eindhoven and Vinacke, 1952), parallel (Calwelts et al., 1992), interactive (when allocating a meaning) (Reichwald and Piller, 2006), iterative (Cropley & Cropley, 2000), open (Chesbrough 2003), integrative (when considered from a holistic point of view) (Ghiselin, 1952) or intertwined (Hollenders & van Cruysen, 2009) with forward and backward linkages (Kline & Rosenberg, 1986). Irrespective of this changing conception, creativity is still often connected with meaningful originality and therefore implicitly with the domains of science and the arts or as an input variable for economic valuation in economic geography). This perception corresponds with the initially introduced, more traditional, but still popular definition of creativity in the narrow sense. Without implying a causal relationship, studies still treat creativity as follows: "creativity, it is argued, is a prerequisite for innovation, and innovation is the driver of technological change, which in turn boots economic growth" (Throsby, 2010: 6). The changing perception extend this view toward a more holistic view of creativity in the broader sense as 'as something with meaningful originality (originality component), which is useful and valuable at the same time (effectiveness component)'. Hereby, creativity is "not just something that happens at the beginning of a technology when a new idea is hatched or discovered, but continues throughout the trajectory until the novel idea is completely embedded in the economic and social order and becomes a normalized part of the knowledge base" (Potts, 2007: 11). This broad notion of creativity encompasses creation, discovery, innovation, and entrepreneurship. Taking the example of a publication (scientific creativity), the portrayed process can be illustratively reconstructed. A vision, idea or problem definition is followed by a research design or a discovery – the very essence of scientific creativity – which potentially finds its way in a working paper. However, the individual or the group of individuals must be aware of the novelty themselves.

This working paper might be condensed to a useful publication – the community in the peer review decides here what is useful or not. The publication itself can be expressed as a 'market launch' in the economic sense. A diverse application of the publication as driven by citations would equally lead to a 'market diffusion'. A commercial book or third-party funding that follow from this publication might even point to an economic exploitation accelerated by an efficient 'science management' of academic entrepreneurs (Törnqvist 2011) in a last step. Hereby, often markets select what is 'valuable' or not. Taking the whole process in to account – which can be also applied to any other type of creativity – studies show that a threefold evaluation along different stage gates is conceivable (Csikszentmi-

halyi 1999, Meusburger 2009, Suwala, 2014): (1) by the individual or the group of individuals to verify originality, (2) by community of experts to validate the usefulness and (3) by the market to select what is economically feasible in all three cases against a frame of reference (e.g. culture, context etc.). This conclusion is by no means an agenda for an economization of creativity in the sciences or the arts or an aestheticization of creativity in economics and technology, rather a contemporary comment of the alternating understanding of these types of creativity. As shown in the initial definition of creativity in the narrow sense only the attribute of meaningful originality has to be satisfied in order to consider something as creative. In the realm of artistic creativity, the good old ‘Kunst der Kunst wegen’, ‘l’art pour l’art’ or ‘art for art’s sake’ still holds true after all. To conclude, despite this holistic approach towards creativity presented here, bisociation within the very creative act can happen consciously or unwittingly, might carry both constructive and destructive features and can most importantly not be predicted or rationally planned in advance.

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The evolution of 'creative economy' research*

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Creative economy: an introduction

The creative economy field is strongly related to the themes of economic development and innovation (Lazzeretti, 2013), and particularly to the study of creative cities (Jones et al., 2015), which dates back at least to the contribution of Allen Scott (1997). Originally, this strong interest in the cultural economy of cities stemmed from an increasing number of works on creativity, urban development and city planning, and on creative cities themselves (Landry and Bianchini, 1995; Landry, 2000; Evans, 2009). This phase was followed by the highly influential work of the well-known scholar Richard Florida (2002), which discusses the impact of human capital and the 'creative class' on urban and regional development. According to Florida, cities need to attract the creative class in order to ensure successful development. Florida puts emphasis on the link between creative class and cities, but the term 'creative economy' (CE) was popularized in 2001 thanks to the contribution of Howkins (2001), who investigated 15 industries ranging from the arts to science and technology. It is generally recognised that the hype related to the creative economy comes from an intersection of multiple research themes on creativity, economic development and competitiveness, which have originated in the cultural industries domain (Hesmondhalgh, 2002; Flew and Cunningham, 2010).

Several research studies have been carried out to investigate the relationship between innovation and territory (Santagata, 2002; Mommas, 2004; Cooke and Lazzeretti, 2008; Chapain and Comunian, 2010; O'Connor 2010; Branzanti, 2015). These studies mainly focus on the creative class, creative industries and clusters/districts, and involve many different disciplines, such as economic geography, regional sciences and local development as well as management studies. Among them, the approach of Florida initially achieved wider recognition and visibility. Florida's work was first developed in North America and Northern Europe (Florida and Tinagli, 2004), but thereafter spread to other European countries and even to Asia, achieving global diffusion (Mellander et al., 2013).

Nevertheless, in order to trace the origins of this phenomenon, it is relevant to start the analysis with the studies on cultural industries that were propagated worldwide by UNESCO in the 1980s, within a wide range of fields, such as music, art, publishing and movies, etc. Cultural industries refer to forms of cultural production and consumption that have at their core a symbolic or expressive element. This definition mainly refers to the traditional Cultural Economics (Towse, 2003; Throsby, 2001). However, the creative economy has been subjected to a particular shift from cultural to creative industries (CCIs). The research of the Cultural Department in Australia in the 1994 (Cunnigham, 2002), the influential contribution of the Department for Culture, Media and Sport of the United Kingdom at the end of the decade (DCMS, 2001) and new researches (2013) have contributed to this shift. More recently, this approach has spread even to undeveloped countries (Yusuf and Nabeshima, 2005; Barrowclough and Kozul-Wright, 2008; Kong and O'Connor, 2009) through the emergence of new differentiated approaches specifically developed for countries of the global south (UNESCO, 2013).

A third approach deals with the intersection between themes of cultural and creative industries and local and regional development, which could be mainly attributed to the thriving contributions on cultural and creative clusters/districts (Santagata, 2002; Mommas 2004; Cooke and Lazzeretti, 2008), creative regions (Anderson 1985; Mc Cann, 2007; Cooke and Schwartz, 2007) and creative networks (Belussi and Staber, 2011), and have been studied mainly in European countries.

The Creative Economy Research (CER) has become a multidisciplinary research field with a strong theoretical and empirical basis and an extensive literature has been produced from many different perspectives (O'Connor 2010; Chapain and Comunian 2010; Branzanti, 2015; Berg and Hassink, 2014). It is now well recognized that the creative economy is a successful paradigm, which has made an important contribution to the studies on economic development and innovation (Bakhshi et al. 2008; Pratt and Jeffcut 2009), although recently some criticism has been raised.

New paradigms are emerging around the creative economy such as the Green Economy (Bina, 2013), the resilience approach (Zolli and Healy, 2013) and the smart specialization (Mc Cann and Ortega-Argilés, 2013), attracting the interest of citizens, policymakers and enterprises. The debate is open between light and shadow, and there are questions about the existence of a “dark side of creativity”, which has not yet been deeply investigated (Lazzeretti, 2012).

Following Glaeser (2005) in regional studies, Pratt (2008) criticizes the role that the notion of the creative class plays as a causal mechanism in urban regeneration. More recently, Pratt and Hutton (2013) discuss the creative sector after the financial crisis and how it has subverted the debates. Scott (2014) argues that the majority of existing research on creative cities tends to offer a flawed representation of urban dynamics and leads in many instances to essentially regressive policy advocacies. He states that the Cognitive-cultural capitalism is a more robust theoretical framework through which contemporary urbanization processes can be described. Within management studies, Cohendet et al. (2010) discuss the anatomy of the creative city in terms of underground, middle ground and upper-down. The famous sociologist Zukin, in her seminal work on the “naked city” (2010), underlines both the risks of loss of authenticity of the cities and of the experience economy. Finally, Campbell (2014) defines the creative economy as an “imaginary success”, through the case study of Liverpool as a European capital city. The discussion is wide-ranging and broadly differentiated from country to country. Through the only observation of the evolution of the CCIs in Europe and worldwide, it is difficult to identify the exact phase in which they are, namely development, maturity, or also the beginning of a possible decline. Perspectives can vary according to the different areas and periods, wherein the paradigm has spread, but at least in Europe the defining issue is surely worth addressing, due to its high priority (Power and Nielsen, 2010).

In North America and Europe the strategic role of the “Creative Economy” has slowed down after the economic and financial crisis of the 2008 and the criticisms have become

more detailed and deepened. Besides, in emerging markets such as Asia, the interest in the creative economy is growing and cultural and creative industries are emerging also through the promotion of new museums designed by Archistar (Hong et al., 2014; De beukelaer, 2014).

However, this rich and promising field has not yet been sufficiently organized, as the existing studies, in their richness and variety, offer a seemingly fragmented framework of knowledge that is not always shared (Chuluunbaatar et al., 2013). With this study, we aim to fill this gap through the use of a bibliometric analysis. We will provide a comprehensive picture to understand the main areas of knowledge (pillars) that have been produced and shared by different authors in the field of creative economy research.

The present contribution has three objectives. Our first objective is to reconstruct the evolution of academic research on creative economy and local economic development. The second aim is to compare its four main research themes, which are known as the main pillars: creative cities, creative class, cultural industries and creative industries. The third aim is to investigate the community of actors/knowledge through a co-citations analysis developed through the use of the Social Network Analysis (SNA).

To this purpose, we investigated the evolution of the Creative Economy Research (CER) over a period of 16 years (1998-2013). This has allowed us to identify the most interesting themes and the most relevant schools, authors and trends. This longitudinal study is based on 941 publications collected from the ISI Web of Science database of publications, including academic works produced in the period from 1998 (the year of publication for the Creative Industries Mapping Document - DCMS) to 2013.

We were then able to build a network of “knowledge” that includes more than 2000 authors.

The work is structured as follows. After this introduction, section 2 presents the research design and the methodology that we used to carry out the study. Section 3 presents the analysis and the evolution of the four pillars of the CER from 1998 till 2013, showing also the most important journals. Section 4 analyses the main roles of disseminators of the CER and founders with a Social Network Analysis that is performed on the network of authors. Some final remarks conclude the paper.

Objectives and methodology: the bibliometric approach and SNA

The work aims to analyse the evolution of the CER over time with particular reference to its main themes: creative class, creative city, cultural and creative industries, cultural and creative cluster/district (region/network), also by analysing the role played by the authors (founders and disseminators) in the development and diffusion of this important paradigm. The analysis allowed us to show the global expansion of the concept, in different countries and in different scientific communities.

To do so we followed a bibliometric approach based on the social network analysis (Wasserman and Faust, 1994), which has recently emerged thanks to the availability of important databases such as ISI Web of Science or Scopus.

This approach, which has now become well known, has not yet been applied to creative research as a whole. Among the more recent studies performed using similar methods on similar topics, we could cite those on the cluster research (Lazzeretti et al. 2014; Cruz and Teixeira, 2010), those on tourism literature (Ye et al., 2013; Au et al., 2012; Benckedorff and Zehrer, 2013; Capone, 2016) and finally those on service innovation (Zhu and Guan, 2013).

Concerning the specific sector of the CER, there are still few works. An example derives from two sectorial studies conducted through the SNA, one on the behaviour of Wikipedia Editors (Iba et al., 2010), and one on British classic composers by Mc Andrew (2015).

The only more general study is the work of Chuluunbaatar et al. (2013), which analyses the academic research on cultural and creative industries from the 1970s to 2013 and studies the most cited articles, authors and journals, but it does not include a co-citation analysis.

Besides, in this paper, we aim to contribute to filling the existing knowledge gaps, providing a wider framework of the evolution of the CER starting from the four pillars of creative research and also analysing authors, articles and Journals, through a co-citations analysis, and building up a map of flows of knowledge of the CER founders and disseminators.

The final goal was to try to identify a first map of the authors/concepts/articles shared by the different communities, analysed also in terms of areas of origin and of discipline. The analysis contributes to understanding the story, between lights and shadows, of one of the most interesting paradigms of this millennium.

Our data come from the ISI-Thomson Reuters Web of Science database. The choice of the ISI Web of Science as data source is motivated by its widespread international use for rating the research output of scientists from every discipline (Boyack and Klavans, 2010; Lazzeretti et al., 2014). This database presents some limitations, however; it collects only

contributions published in journals with impact factors, and omits most of the contributions published in books or in languages other than English¹. To improve the robustness and accuracy of our data and to avoid mistakes and errors, our results have also been compared and integrated with the results of a similar search of the SCOPUS database.

The data of publications of the CER were collected from ISI database from 1998. Using the search option in the Web of Science, all publications whose topic contains the following terms were collected: 'creative class', 'creative industry', 'creative cluster', 'creative city', 'creativity economy', 'creative networks', 'cultural industry', 'cultural cluster', 'cultural district', 'cultural network', 'creativity' and 'region', 'cluster', 'district' and 'city' (both singular and plural terms).

In order to focus on the relationship between creative economy research and its contribution to local development, we intentionally excluded all contributions lacking a territorial dimension. This included research from the fields of business, cultural studies and cultural economics, as well as contributions on individual creativity, mainly from the fields of psychology, sociology and organisation studies, and those on creativity and innovation.

We began by selecting all publications on subjects related to the social sciences². After performing a keyword analysis, we collected approximately 1,650 contributions dated from 1998 to 2013. In our first approximation, the same article could be found by more than one search object³. We proceeded to skim the database by reading the abstracts of the articles and excluding duplicate results or those less relevant to CER topics. After this procedure, we obtained our final database containing 941 publications from 1998 to 2013 and comprising more than 2,000 authors.

Then we proceed with the analysis of the most important works defined as 'disseminators' of the CER and then we analysed their backward citations, identifying the related 'founders'. This allowed us, by downloading from the ISI database the backward citations of the most-cited articles, to explore the theoretical basis upon which the CER has been constructed.

This was helpful also to avoid the limit to consider only articles, published in ISI Journals (with Impact Factor), and to expand the database to books, research reports, etc.

1. The ISI database does not consider journals without impact factors, books not included in the ISI Book Citation Index or research reports (UNESCO, UNCTAD, NESTA, WIPO, etc.).

2. Using the search option at Web of Science, all publications whose topic contained the following terms were collected: 'creative class', 'creative industry', 'creative cluster', 'creative city', 'creativity economy', 'creative networks', 'cultural industry', 'cultural cluster', 'cultural district', 'cultural network', 'creativity' and 'region', 'cluster', 'district' and 'city' (both singular and plural terms).

3. For example, we were able to find articles that studied both the creative class and creative cities and were located in two selected groups.

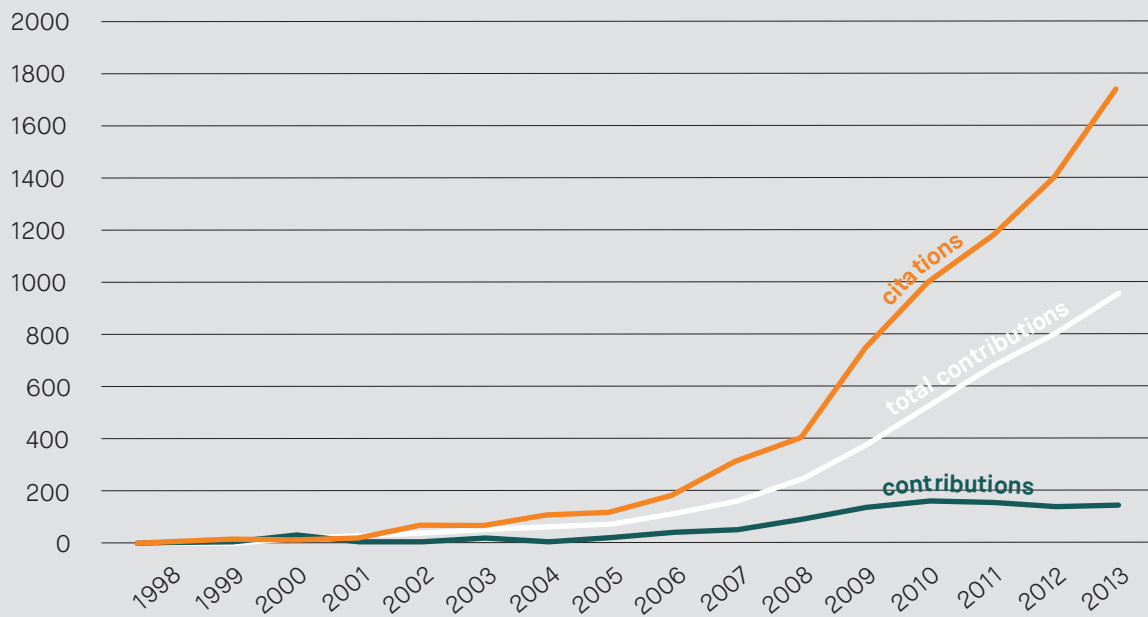


Figure 1 Evolution of CER: citations and contributions (1998-2013) (our elaborations on ISI web)

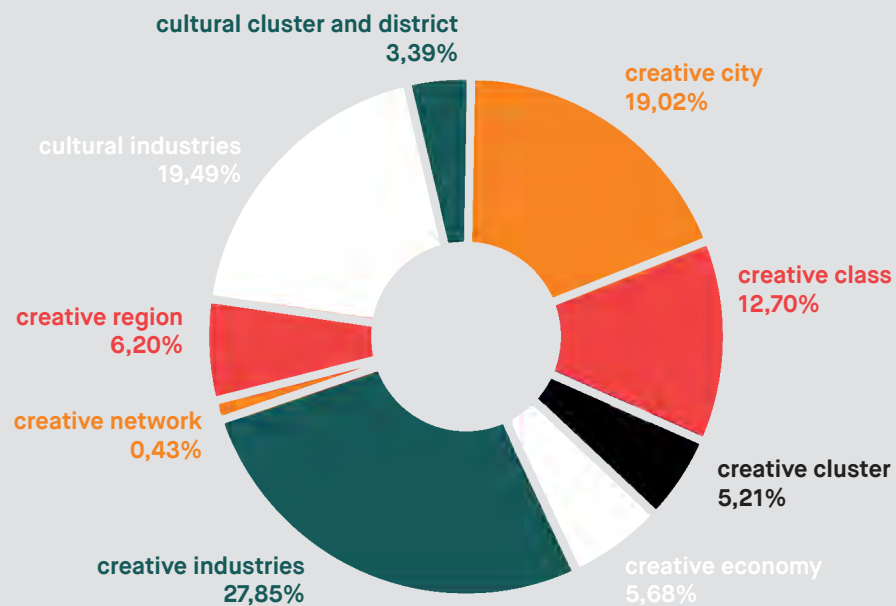


Figure 2 Distributions of ISI publications on CER per topic (our elaborations on ISI Web)

The Creative Economy Research

The evolution of creative economy research

Figure 1 presents the evolution of publications and citations of the CER from 1998 to 2013. As can be seen from the figure, we start with very few contributions in the nineties; in fact the CER is a phenomenon that has appeared in ISI journals since the early 2000s and has showed huge growth from 2006/2007 onwards, with more than 60 contributions per year and with more than 400 citations yearly. As it has already been highlighted in the literature, there is a growing development of the subject with a real hype in the international literature.

Next, we confirmed the relevance of the main pillars. Figure 2 presents the distribution of CER per topic, and reveals that the four pillars included nearly 80% of all contributions. The most important topic is creative industries, which represents approximately 28% of the contributions analysed, followed by the themes of cultural industry and creative cities, both registering around 19%. The creative class stands at 12%. Other topics include: creative clusters, cultural clusters and districts, and creative regions. Creative clusters recorded only 5% and cultural clusters and districts did not reach 4%, while creative regions represented slightly over 6%. The topics of creative and cultural networks and cultural and creative industry were not significant. These findings underscore that the creative class is not the subject with the highest interest over time, despite the initial emphasis given to the relevant contributions from Florida. On the contrary, the themes of creative and cultural industries received the most publications (47%). The creative city had more results than the creative class but did not constitute a homogeneous field, as it was mainly evoked in the contributions of a few specialist areas, such as urban planning, urban economics and similar disciplines. Issues related to local development, such as cultural or creative districts and clusters, or creative regions, remained marginal. Clusters and districts stood together with less than 10% of contributions.

Finally we underlined the evolutionary trends of the four main pillars. Figure 3 illustrates the evolution of the publications over time. The themes related to cultural industries were the most important until 2005-2006, due to the traditional contribution of culture economics, with around 40 relevant contributions per year since 2009.

The research on the creative class grew during the initial phase, but only experienced clear-cut development in the second half of the 2000s, and has already shown a decrease in the last 2-3 years. Creative industries have been instead the main theme from 2007 onwards; beginning in 2009, there have been more than 70 contributions per year on this subject.

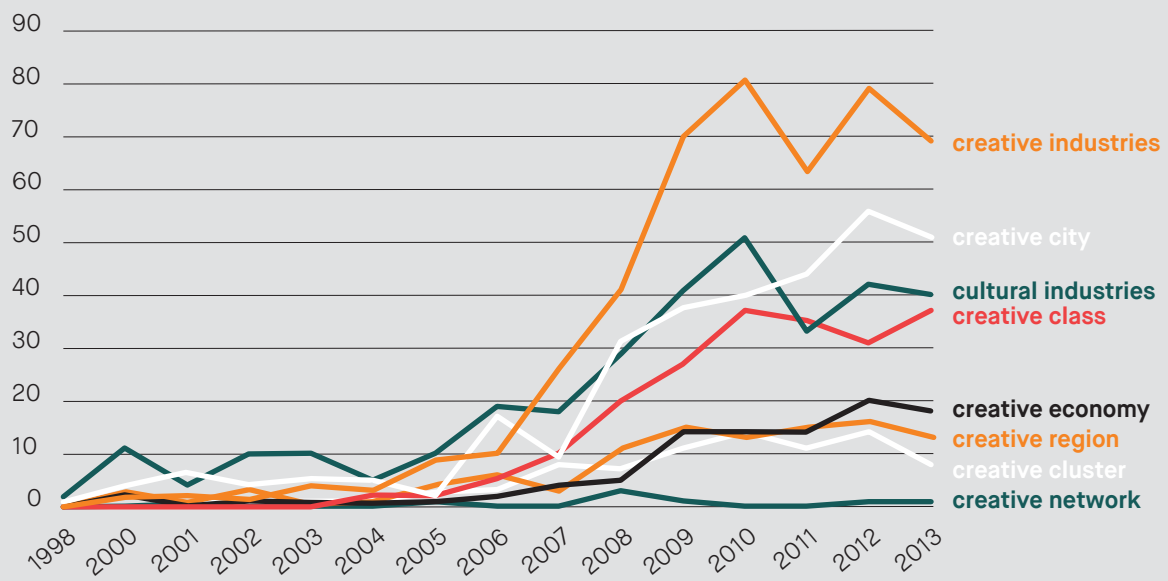


Figure 3 The evolution of CER per topic (1998-2013) (our elaborations on ISI web)

PAPERS	Contributions	% Contributions	Citations	% Citations
Urban Studies	38	4%	889	12%
International Journal of Cultural Policy	36	4%	140	2%
Environment and Planning A	35	4%	462	6%
Cities	29	3%	166	2%
European Planning Studies	23	2%	138	2%
Journal of Economic Geography	19	2%	485	7%
Regional Studies	18	2%	215	3%
Industry and Innovation	17	2%	130	2%
Innovation-Management Policy & Practice	13	1%	68	1%
Journal of Urban Affairs	12	1%	232	3%
Geografiska Annaler Series B-Human Geography	12	1%	195	3%
International Journal of Cultural Studies	10	1%	38	1%
Geoforum	10	1%	381	5%
Cambridge Journal of Regions Economy and Society	10	1%	17	0%
China Industrial Economy	9	1%	17	0%
Service Industries Journal	9	1%	33	0%
Economic Development Quarterly	9	1%	148	2%
Australian Geographer	9	1%	84	1%
China Soft Science	8	1%	10	0%
Growth and Change	8	1%	78	1%
European Urban and Regional Studies	8	1%	34	0%
Economic Geography	7	1%	198	3%

Table 1 Distribution of CER by most ISI publishing journals (our elaborations on ISI web)

The topic of creative cities is an important developing theme that did not register a decline like the one related to the creative class. Among the less relevant topics, only the creative region and creative clusters showed substantial development, but reached only 10-20 contributions per year from 2009 to 2013.

The contributions on the various topics of analysis involve some repetition, as a single contribution can have multiple objects of research. In this context, these contributions present a high degree of transversality: 60% were related to only one research topic, while 24% comprised two topics, and the remaining 16% had between three and five areas of research.

The most publishing journals

Table 1 presents the journals that are mainly involved in CER and local economic development. The most important is Urban Studies, demonstrating that urban economics and urban planning constitute a field that welcomes contributions on creative cities and the creative class. This is further reflected also in Journal of Urban Affairs, etc. The second most relevant publication is the International Journal of Cultural Policy, which records more than 30 articles, thus confirming how the CER is well inserted in the traditional research on cultural studies and cultural economics.

Another group of journals comprises the regional sciences, with contributions on regional development and competitiveness, including Regional Studies, Cambridge Journal or Regions, etc. One of the main strands concerns economic geography, with periodicals like JEG, Geoforum, Geografiska Annaler, or journals dealing with issues between geography and planning, such as European Planning Studies or Environmental and Planning. In addition, we found journals of management, innovation and local development, such as Industry and Innovation, a fact that further underlines the multidisciplinary interest surrounding these issues. As a last remark, we also noted the presence of Asian journals that publish both in Chinese and English.⁴

Founders and disseminators of the CER

This paragraph focuses on the analysis of CER authors with a co-citations relational approach using Social Network Analysis (Wasserman and Faust, 1994). The first section investigates ‘disseminators’ of CER, defined as the most important contributions on the basis of the received citations. Section 4.2 investigates ‘disseminators’ backward citations in order to identify ‘founders’ of CER, as the most cited articles by disseminators.

4. In the period under study we found 76 contributions published in 35 Asian journals.

The disseminators of CER

In order to identify some of the main characteristics of the academic community that deals with the creative economy, we selected the most cited articles. These works can be considered the first proxy of shared knowledge of the scientific community. Through our analysis, we identified the main authors (called disseminators), who contributed more than others to diffuse the paradigm of the creative economy across the different disciplines.

In accordance with other works on bibliometric analysis (Lazzeretti et al., 2014), we have selected the most relevant contributions, i.e. those that have received at least 4 citations on average per year. The resulting 46 contributions are considered disseminators of CER.⁵ These 46 contributions received 3,600 citations, almost 50% of the total citations (7,300), thus they can be defined as the core of CER. This core emerges as a closed and coherent network of very few authors. Considering the total database, 10% of authors received 70% of total citations. In fact, around 500 contributions received one or no citations at all. It is therefore interesting to investigate this core group, recognised as the most relevant authors by fellow academics, in order to study the identity of the creative economy community.

Table 2 presents the 25 top cited disseminators. As expected, the most cited works are on creative class, including Peck (2005), Florida (2002), Markusen (2006) and Florida et al. (2008). Creative cities also register relevant contributions, such as those by Scott (2006) and Hall (2000). Among them there are several contributions from Pratt (2000) and Mommaas (2004) that also discuss the concept of cultural clusters, as does Gupta et al. (2002), or the relevance of territory (Drake, 2003). The intersection between the themes of local development and those of cultural and creative industries is also relevant and can be found in Scott (2006), Asheim et al. (2007) and Storper and Scott (2009). Pratt is also ranked at other positions in the list (Gills and Pratt, 2008; Pratt, 2008).

It is also interesting to investigate the nationalities of the 58 authors who published the 46 contributions.⁶ Table 3 presents the distribution of the 46 disseminators divided by country of origin. The Anglo-Saxon approach appears dominant, with the US and UK both recording 31% of the total authors. Australia accounts for 10%, while Sweden and Germany each register a percentage of 5%, highlighting the relevance of Northern Europe. Moreover, the themes are geographically concentrated: creative class contributions have been developed by authors localised in the US, while creative industry contributions come from British and Australian authors. Northern Europe is concerned with both themes. South Europe is poorly represented, which confirms the prevalence of English-speaking countries (US, UK, Australia, Canada) or those where English is a second language (Scandinavian countries and Germany).

If we analyse the scientific domains of these scholars, we find that authors are mostly active in the following fields: regional and urban studies, cultural economics, cultural studies and economic geography, but also management and tourism. This confirms the multidisciplinary nature of CER and the heterogeneity of interests raised by the creative economy.

5. Obviously, taking into account only the most important contributions in terms of citations has its limits. The first and foremost is that older articles received more citations, so that the most important contributions would always be the most dated. We have tried to overcome this limit by analyzing per year rather than by absolute number of citations.

6. Of course, a contribution can be co-authored by more than one author.

#	Contributions	Title	Citations	Average yearly
1.	Peck, J 2005	Struggling with the creative class	393	49,12
2.	Florida, R 2002	The economic geography of talent	210	16,15
3.	Scott, AJ 2006	Creative cities: Conceptual issues and policy questions	170	18,89
4.	Markusen, A 2006	Urban development and the politics of a creative class: evidence from a study of artists	160	17,78
5.	Hall, P 2000	Creative cities and economic development	129	8,6
6.	Mommaas, H 2004	Cultural clusters and the post-industrial city: Towards the remapping of urban cultural policy	129	11,73
7.	Ley, D 2003	Artists, aestheticisation and the field of gentrification	128	10,67
8.	Florida, R; Mellander, C; Stolarick, K 2008	Inside the black box of regional development - human capital, the creative class and tolerance	109	15,57
9.	Evans, G 2003	Hard-branding the cultural city - From prado to prada	107	10,7
10.	Asheim, B; Coenen, L; Vang, J 2007	Face-to-face, buzz, and knowledge bases: sociospatial implications for learning, innovation, and innovation policy	103	12,88
11.	Storper, M; Scott, AJ. 2009	Rethinking human capital, creativity and urban growth	97	16,17
12.	Pratt, AC 2000	New media, the new economy and new spaces	95	6,33
13.	Markusen, A; Schrock, G 2006	The artistic dividend: Urban artistic specialisation and economic development implications	93	10,33
14.	Lampel, J; Lant, T; Shamsie, J 2000	Balancing act: Learning from organizing practices in cultural industries	85	5,67
15.	McGranahan, D; Wojan, T 2007	Recasting the creative class to examine growth processes in rural and urban counties	84	10,5
16.	Storper, M ; Manville, M 2006	Behaviour, preferences and cities: Urban theory and urban resurgence	80	8,89
17.	Gills, R; Pratt. A 2008	Precarity and Cultural Work In the Social Factory? Immaterial Labour, Precariousness and Cultural Work	78	15,6
18.	Gupta, V; Hanges, PJ; Dorfman, P2002	Cultural clusters: methodology and findings	75	5,77
19.	Drake, G 2003	This place gives me space': place and creativity in the creative industries	74	6,17
20.	Pratt, Andy C.2008	Creative cities: The cultural industries and the creative class	70	10
21.	Banks, M; Lovatt, A; O'Connor, J; Raffo, C 2000	Risk and trust in the cultural industries	70	4,67
22.	Evans, G 2009	Creative Cities, Creative Spaces and Urban Policy	68	17
23.	Scott, AJ 2001	Capitalism, cities, and the production of symbolic forms	67	4,79
24.	Bathelt, H; Boggs, JS 2003	Toward a reconceptualization of regional development paths: Is Leipzig's media cluster a continuation of or a rupture with the past?	61	5,08
25.	Prentice, R; Andersen, V 2003	Festival as creative destination	55	4,58

Table 2 The 25 top cited disseminators of CER (our elaboration)

COUNTRY	AUTHORS	PERCENTAGE
UK	18	31%
USA	18	31%
Australia	6	10%
Sweden	5	9%
Canada	3	5%
Netherlands	3	5%
Germany	2	3%
Singapore	1	2%
Denmark	1	2%
New Zealand	1	2%
TOT	58	100%

Table 3 Nationality of the authors of the 46 contributions (our elaboration)

Analysis of founders and disseminators of CER

In this section, starting from the disseminators of CER, we explore the theoretical ground upon which they are based, by downloading from the ISI database the backward citations of the 46 most-cited articles. We constructed a database of 1694 references that were cited by disseminators. As other contributions (Lazzeretti et al., 2014), we use the term ‘founders’ of the CER.

Figure 4 shows the network of the founders of CER, the nodes represent the publications, while the lines indicate that two publications have been co-cited jointly by the disseminators. The graph with 1694 nodes has been reduced to 98, for those contributions that have at least 3 co-citations in common. Figure 4 presents only the founders with at least 3 co-citations, while the size of the nodes is the importance of the contribution defined with the total number of citations received. At the centre, it is represented the biggest node of Florida (2002) on “The rise of creative class”, which is one of the most cited contributions. Then we can see the contributions of Landry (2000), Landry and Bianchini, (1995) on creative cities, the contributions on cultural industries such as Pratt (1997), Scott (2000), Hesmondalgh (2002) and Zukin (1995) about “The culture of cities”. Lash and Urry (1994) receive many citations on “Economies of signs and space”, while Scott can be found on more than one topic (1998, 1999, 1996, 2000), etc.

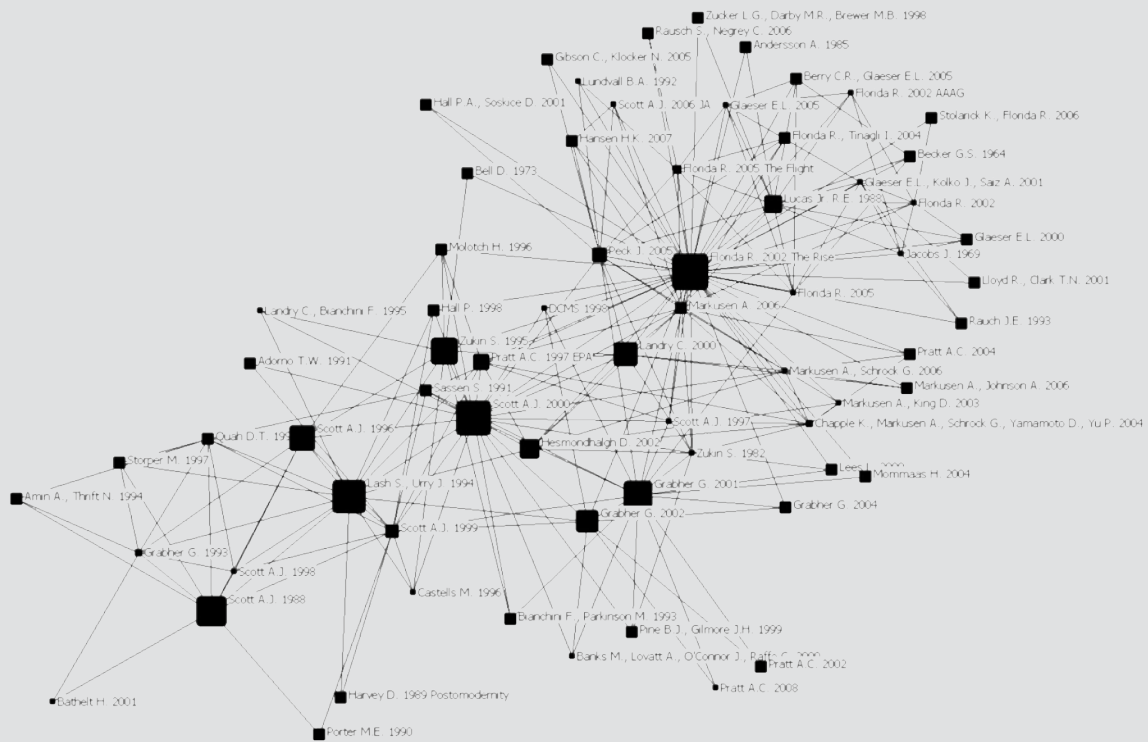


Figure 4 Founders of CER with a least 3 co-citations (our elaborations)

MAIN THEMES	n.	%
Creative class	30	15%
Cultural industries	43	21%
Creative industries	30	15%
Creative city	27	13%
City	23	11%
Human capital	11	5%
Society	7	3%
Creativity	13	6%
Regions/Dev/ Competitiveness	18	9%
TOT	202	100%

Table 3 Nationality of the authors of the 46 contributions (our elaboration)

In order to classify and facilitate the graphical presentation of the analysed publications, we decided to perform a reclassification of founders and disseminators using the abstract and the main studies' theme. This also allows us to investigate which are the most studied topics. The main themes identified are presented in Table 4, together with the distribution of the founders and disseminators. These cover the main pillars already presented in the first part of the paper and some new issues, which mainly concern the founders. With the help of Social Network Analysis, we are able to graphically represent the links among contributions and individuated main themes. A contribution could be attributed to several themes of study, this is not a problem using the network analysis, it will only correspond to multiple lines connecting a node (contribution) to a theme.

Figure 5 includes disseminators and founders that received at least 3 co-citation per year. It includes the 83 most cited disseminators, denoted by white squares, and the 98 founders, represented by black triangles, while the round nodes represent the main identified themes. A line connects publications to their themes. We think this will facilitate the reading of the matrix founders-disseminators.

Firstly, we can watch to the networks mainly composed by the founders presented in Figure 5 (and also shown in Fig. 4). A first group of isolated founders is on the themes of change at the level of society-economy, here the CER is used to identify the transition to a new way of looking at society, economy and economic development. Here we find the contributions of Lash and Urry (1994) on 'Economies of signs and space', Castells (1996) on the 'Network society', Pine and Gimore (1999) on 'The experience economy' and Harvey (1989) on 'Postmodernity' or Thrift's work on 'Knowing Capitalism' (2005). These contributions are mainly books and date before the development of the CER.

A second group of founders results to be focused on studies of city and urban development. Here are included the famous contribution of Jacobs (1961; 1969), the works of Zukin (1982, 1991), Sassen (1991) on the 'Global city', Glaeser et al. (1998; 2000; 2001) on 'Dying city' and 'Growth in cities', Amin and Thrift (2002) on 'Cities: Reimagining the Urban'. Even these founders are all previous to the CER that was inspired by those contributions for analysis at the urban level, the creative cities and the role of cities in the urban and regional development.

A third group relates to the role of human capital, revitalized mainly by the contribution of Florida and the research on the creative class. Here we find the works before the "creative class" on human capital, and in particular Becker (1964) on 'Human Capital' and education, Rauch (1993) and Thompson and Thompson (1985) on concentrations of human capitals and development.

Another network of founders is the regional development and competitiveness on which the CER was used to include the issue of regional and local development and the issues of competitiveness. Here there are the contributions of Porter (1990), Marshall (1919), Lucas (1988) 'On the mechanics of economic development', Saxenian (1994) 'Silicon Valley and

Route 128', Storper and Scott (1995) 'The wealth of regions', Storper (1997) 'The regional world' and also Lundvall (1992) about National Innovations Systems, etc.

Figure 5 shows also the four pillars that we have already discussed and which are also based on the disseminators: cultural industries, creative industries, creative city and creative class.

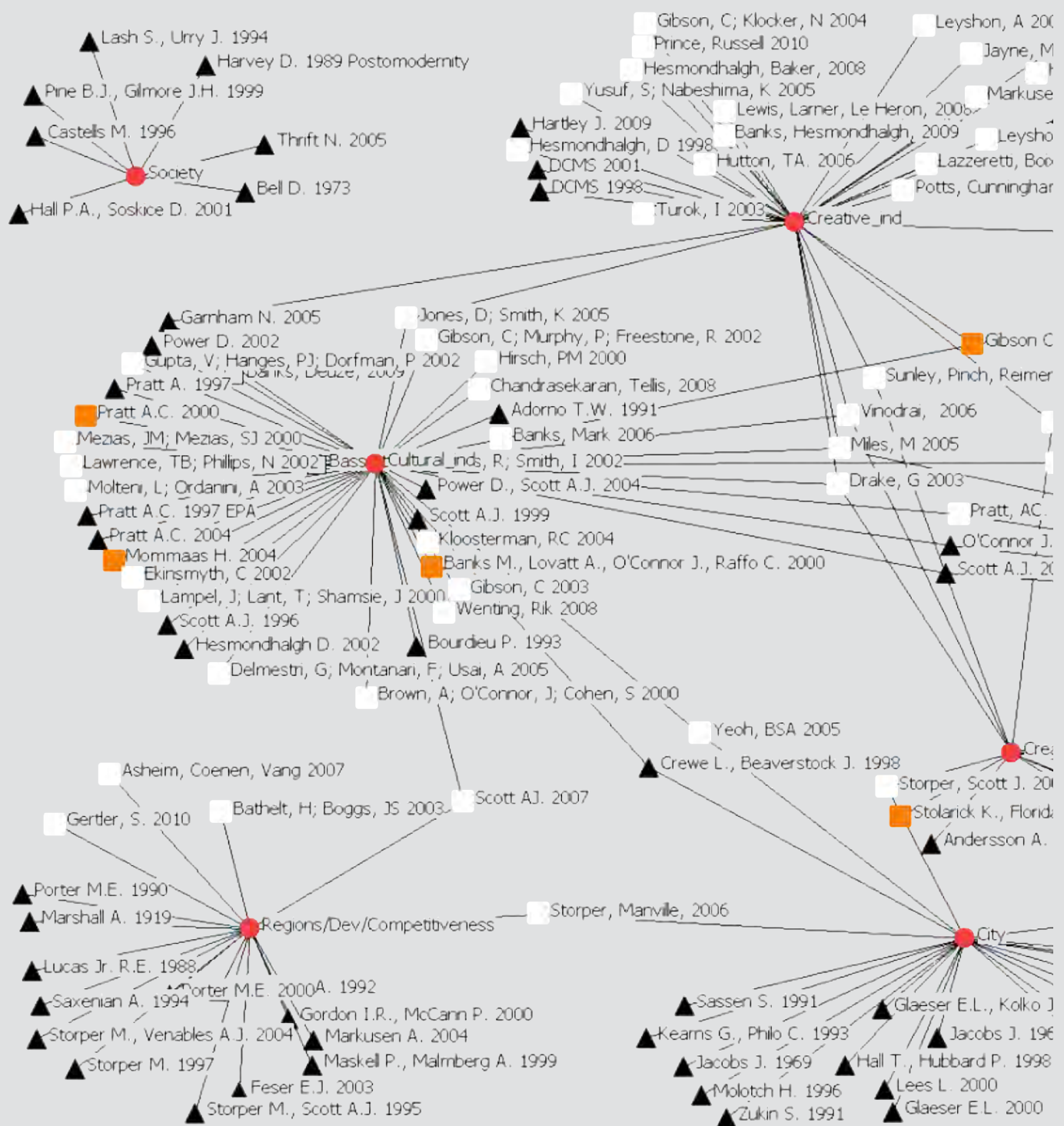
In the group on the creative class we can see the contributions of Florida (2002) on 'The rise' and 'The flight' of creative class and the works on Europe in the creative age (Florida and Tinagli, 2004), the known contribution of Peck (2005) 'Struggling with the creative class' and also the critics as Glaeser (2005; 2004). There are also the works about the creative class in Europe as Boschma and Fritsch (2009), Clifton (2008), Hansen (2007), Asheim and Hansen (2009) or on firm formation and development (Lee et al., 2004, Stolarick et al., 2008).

At the centre of the figure there are the three remaining pillars that have also many interconnections between them. In the creative city there are the founders Landry (2000), Scott (1997) on 'cultural economy of cities' and Scott (2000; 2005), Zukin (1995), Landry and Bianchini (1995) Bianchini and Parkinson, (1993), etc. While the disseminators are the more recent works of Hall (2000) on 'creative cities and economic development', Ley (2003) on artists and gentrifications processes, Pratt (2008) on creative cities and cultural industries.

In the group of cultural industries we find mainly the disseminators with authors coming from Cultural Economics studies. Here the contributions include works on cultural industries as Mommaas (2004), Hesmondalgh (2002), Hirsch (2000), O'Connor, (1999), Power (2002), Power and Scott (2004); Pratt (1997; 2000; 2004; 2008) and Scott (1996, 1999; 2000; 2007). And two interesting founders: Bordieu (1993) about 'field of cultural production' and Adorno (1991) on 'The cultural industry'. A small but interesting part of these works is related to the study of the cultural cluster as Gupta et al., (2002); Mommas, (2004), Basset et al., (2002), etc.

The last group is the one of creative industries. Here there are obviously the institutional works of the DCMS (1998; 2001) and of Markusen et al., (2008) about the definition of creative sector or Garnham's work (2005) 'from cultural to creative industries'. And we find also the works of Potts, Cunningham and Hartley (2010; 2009) about the Australia, Jones and Smith, (2005) New Zealand, or Yusuf and Nabeshima (2005) about creative industries in East Asia, etc. Another group of contributions on clusters of creative industries as Lazzeretti et al. (2008), Turok (2003), Hutton (2000; 2006) about the city and the spatial configuration of the creative industries.

These are the main contributions and the main schools that emerge from our bibliometric analysis that allowed us to highlight the main founders and disseminators of the CER and the main areas of study that are most cited in the literature.



Legend

Disseminators

▲ Founders

☒ Both

- Main themes

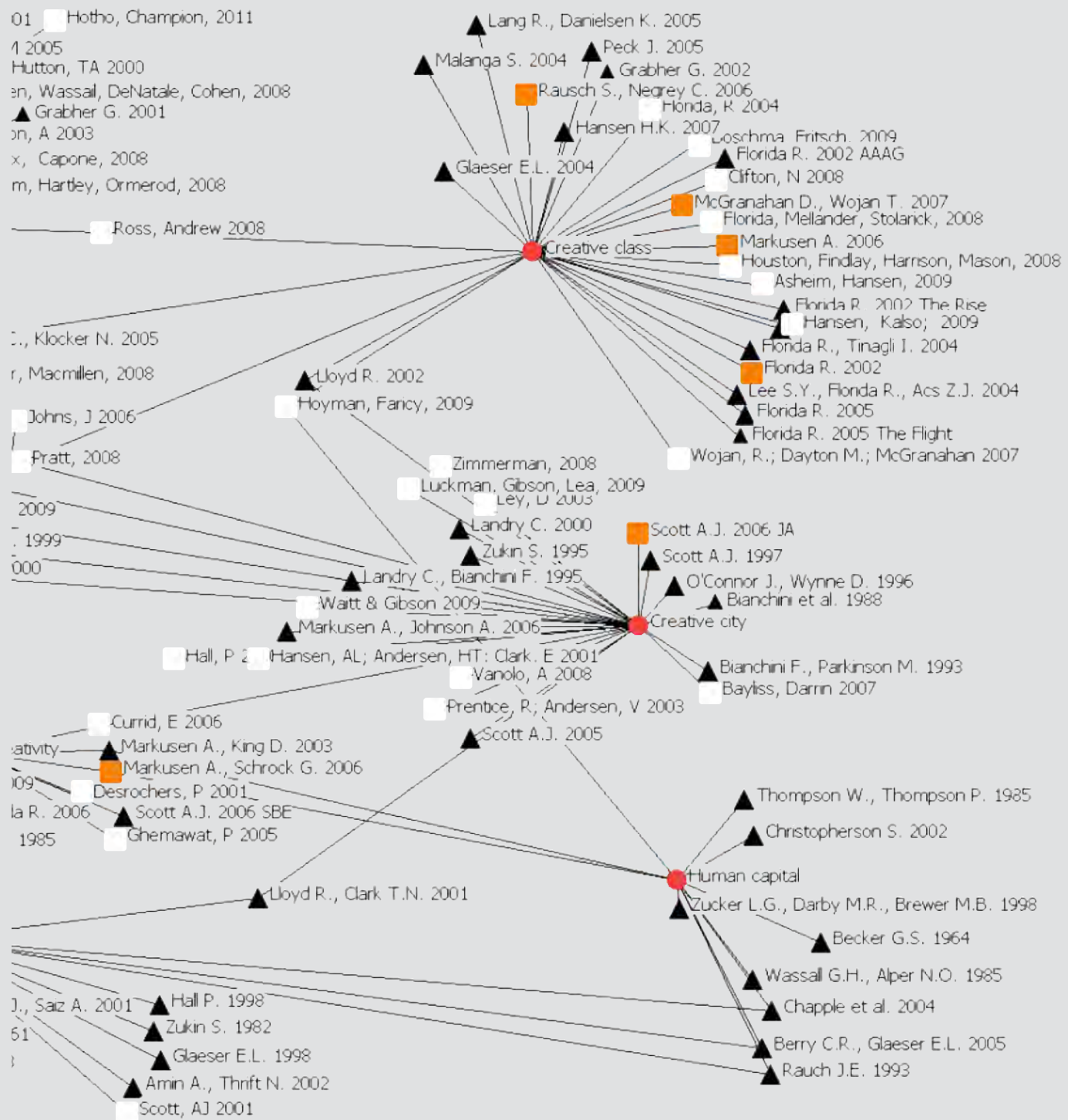


Figure 5 Founders and disseminators of Creative Economy Research (with at least 3 co-citations) (our elaborations).

Conclusions

The aim of this work was to show the evolution along time of the CER, and the interactions between its main different pillars, but also to contribute to filling the gap of the fragmentation of the literature on creative economy in order to understand how different disciplines may be very close to each other by using this perspective.

We developed a bibliometric analysis and performed a co-citations study by using the SNA on over 1.000 articles on the CER along a period of more than a decade. Our results underline how the creative economy research is a really successful and multidisciplinary paradigm born in English speaking countries (North American and European countries) and developed even to a global level. This strand of research has contributed to the rise of a new research field sector: the cultural and creative industries.

The results so far shown firstly define that this field of research is still in a development phase with a huge amount of publications per year since the 2009 and that the attention is also growing, if the CER is analysed as a whole. Nonetheless, if we focus on specific fields, some of them have been declining whereas others have been rising in the last years.

Concerning the second part of the work, the one related to the analysis of flows of knowledge, interactions and theoretical origins of the CER, we analysed more than 180 contributions that were co-cited at least 3 times in order to show only those works that really give a strong contribution to the field. This analysis showed how those fields that have been used as theoretical framework to build up the CER concept, (such the changes in main themes as society, city and human capital). Others, as the regions/development/competitiveness and the creative class have been used both as theoretical basis for the CER and also as a field of development and discussion.

Regarding the interactions among the four pillars, we find that all of them are connected each other's, finding that founders of the CER are in all of those pillars even if some of them, such as Cultural industries and creative class, contribute more than others to the foundation of this field. We saw also that journals, publishing papers on those topics, come from a wide range of disciplines giving further idea of the openness of this field.

Additional work should be dedicated to further investigate the main authors in order to better understand the interactions between the four pillars of the CER, and also to study the direction of its development in terms of geographical areas in the world.

To this day, we do not know how the CER is likely to change in the future and if the strand of research will still be in a development or in a decline phase. However, notwithstanding the limits of the research, this work proposes an interesting analysis of the creative economy research adding new knowledge to this evolving research field.

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