THE PRIMORDIAL SOUP:
EXPLORING THE EMOTIONAL MICRO-FOUNDATIONS OF CLUSTER GENESIS

Paolo Aversa*
Cass Business School, City, University of London

Santi Furnari
Cass Business School, City, University of London

Mark Jenkins
Cranfield School of Management, Cranfield University

*Corresponding author: paolo.aversa.1@city.ac.uk

[Forthcoming in *Organization Science*]

ABSTRACT

Previous research on the genesis of industrial clusters has focused on macro-level (e.g., agglomeration economies, institutions) or meso-level explanatory factors (e.g., serial entrepreneurship, spin-offs). Less studied are the micro-foundations of cluster genesis, intended as the individual- and group-level processes underlying such macro-level outcome. Yet, micro-foundations are key to understand the "primordial soup" of cluster genesis—i.e., the processes unfolding in the early moments of cluster formation, before the first emergence of commercial activity. Through a historical case study of the British Motorsport Valley cluster (1911-1970s), we trace back the primordial origins of this cluster to the casual leisure activities of groups of amateur motorsport enthusiasts who then prompted the professionalization of motorsport racing and its transformation into the business at the core of the industrial cluster. We theorize that clusters emerge through the layering of different domains (casual leisure, serious leisure, business), each made of three elements (actors, activities, artefacts), which interact via two micro-level mechanisms: 1) *localizing passion*, a shared emotional energy by which people become affectively attached to the spaces where they carry out activities that they enjoy; 2) *domain repurposing*, the shift of a configuration of actors, activities, and artefacts towards a new purpose, originating a new domain. While domain repurposing induces the transformation of activities from leisure to business (thus originating the industry at the core of a cluster), localizing passion anchors the activities to the same geographical area (clustering the industry). Our key contribution is to explore the emotional micro-foundations of cluster genesis.

Keywords: Cluster genesis; Industry emergence; Micro-foundations; Emotions; Historical methods; Motorsport.

ACKNOWLEDGEMENTS

The authors are listed in alphabetical order. We thank Senior Editor Gino Cattani and two reviewers for their excellent guidance and comments. We also thank Rajsheree Agarwal, Diane-Laure Arjaliès, Fiorenza Belussi, Charles Baden-Fuller, Melodie Cartel, Tina Dacin, Fabrizio Ferraro, Hans Frankort, Stefan Haefliger, Leona Henry, Annelore Huyghe, Livio Lodi, Mahka Moeen, Markus Perkmann, Ryan Raffaelli, Davide Ravasi, Thomas Roulet, Roel Rutten, Bilgehan Uzunca, Myles Shaver, Paul Tracey, Rene Wiedner, Sydney Winter, Charlene Zietsma for constructive conversations and feedback on our study. A heartfelt 'grazie' to Gianni Lorenzoni, Simone Ferriani, and Katrin Schreiter for their relentless support through this nine-years-long journey. We thank our interviewees and informants for their time. We are grateful for their comments to the participants of seminars at Cass Business School, IESEG Paris, Tilburg University, University of Trento, OTREG, The STR Division. Earlier versions of this paper were presented at the iBegin conference at Ca' Foscari University, (Venice, 2017), the Academy of Management Conference (2018 and 2020), the EGOS Conference (Tallin, 2019) and The SMS Annual Conference (Paris, 2018)—where the paper was nominated for the SMS Best Paper Award. Remaining errors are only ours. This work was supported by the European Commission's Marie-Curie Actions [Project nr. 301688, Project Acronym AJ86RH5GYM, FP7-PEOPLE-2011-IEF]. Finally, we acknowledge the support of the Center for Sports and Business at the Stockholm School of Economics.

INTRODUCTION

The genesis of industrial clusters is one of the most central and debated topics in organization studies and strategy, as well as economics and policy (Klepper 2010; Krugman 1991; Marshall 1890; Saxenian 1991). Scholars and practitioners agree that clusters crucially influence the nature, processes, and performance of organizations, ultimately providing opportunities for competitive advantage at the organizational, regional, and national level (Fleming et al. 2007; Pouder and St. John 1996). Further, the "stickiness" of clusters to a geographical area (Markusen 1996) is key to the resilience of organizations against challenges such as de-localization and de-industrialization (De Wit 2015).

Prior research on cluster genesis has mostly focused on macro-level factors observed at the cluster-level, such as agglomeration economies (Krugman 1991; Shaver and Flyer 2000), untraded interdependencies (e.g., Storper 1995), or institutions (Perez-Aleman 2005). Other studies have highlighted meso-level factors observed at the firm-level, such as serial entrepreneurship (Klepper 2007; Ferriani et al. 2020), anchor firms (Feldman 2003), innovations (Bell 2005; Belussi et al., 2010), networks (Owen-Smith and Powell 2004; Powell et al. 1996), knowledge concentration (Tallman et al. 2004) and local spin-offs (Klepper 2002; 2007). Less attention has been devoted to the individual- and group-level processes underlying cluster genesis or what we call the *micro-foundations* of cluster genesis—i.e., what people do "on the ground" and how their micro-level activities shape the localization of economic production. In fact, scholars recently called for a greater focus on human and place-specific agency in cluster formation (Trippl et al. 2015).

Unpacking micro-foundations is important to more fully understand cluster genesis and particularly how industrial clusters can emerge bottom-up, from the distributed activities of a myriad of initially uncoordinated people (e.g., Padgett and Powell 2012), rather than top-down, through the interventions of established institutions such as government, universities, or trade associations (Porter 1990). In fact, several research communities have advocated for, and devoted more attention to, micro-foundations to better understand emergence processes, including scholars of dynamic capabilities (e.g., Abell et al. 2008), institutions (e.g. Haack et al. 2019; Furnari 2019) and social movements (e.g. Reinecke and Ansari 2020). Yet, despite their importance, the micro-foundations of industrial clusters remain under-studied.

Furthermore, micro-foundations are important to understand the early moments of cluster genesis, i.e.,

to unpack the under-studied processes unfolding before "the first instance of product commercialization" (Agarwal et al. 2017, p. 287). It is in those early moments that commercial production activities emerge and initial localization decisions are made; and it is ultimately through those decisions that commercial activities eventually cluster, or stick to, a location. Metaphorically, if commercial activity and the creation of the first business organization stands for the appearance of "entrepreneurial life", we wonder what is the "primordial soup" from which it derives (Darwin 1859; Oparin 2003) and what is the "élan vital" (Bergson 1911) making the ingredients of the "soup" interact, eventually resulting into cluster genesis. In other words, we echo other scholars' views that "the nature of the dynamic processes as distinct from the ingredients that might produce clustering" are only partially understood (Braunerhjelm and Feldman 2006, p. 195). Thus, we ask: *what are the micro-level mechanisms of cluster genesis before the emergence of commercial production activities?*

To address this question we conducted a qualitative, historical case study to explore the genesis of the British Motorsport Valley (BMV) industrial cluster in the United Kingdom (UK) from 1911 to the early 70s. This cluster today occupies a region typically described as a crescent-shaped area to the north, west, and south of London, and centered around Oxfordshire (Source: Motorsport Industry Association, 2019), including over time thousands of motorsport companies (such as Cooper, Lotus, McLaren, Williams) and specialized suppliers, media, trade associations, educational and research institutions (Henry and Pinch 2000). We trace back the genesis of this industrial cluster to the efforts of the founders and members of amateur car clubs, which fed the passion of entrepreneurs such as Bernie Ecclestone (founder and former CEO of Formula One Management) or Colin Chapman (founder of Lotus). Our study thus focuses on the pioneering role of these clubs and their initial activities, which eventually spurred one of the most important industrial clusters in the UK and a leading reference point for global motorsport (Henry et al. 2007).

Our findings show that *localizing passion*—i.e., a spatially situated, shared emotional energy by which people become affectively attached to the spaces where they carry out activities that they enjoy—is a key mechanism of industrial cluster genesis. Building on social geography (Gieryn 2000; Rutten 2017) and research on collective emotions (Collins 2004; Furnari 2014; Zietsma et al. 2019), we argue that localizing passion *turns spaces into places*, where places are defined as spaces imbued with special meanings and

values in the eyes of a social group (e.g., Dacin et al. 2019; Howard-Greenville et al. 2013; Lawrence and Dover 2015). By turning spaces into places, localizing passion forges the emotional attachment that binds people to a geographical area, acting as a "sticky catalyst" that attracts in a location three basic "ingredients" useful for cluster formation (actors, activities, artefacts) and accelerates their interactions so that they can reproduce and evolve. We also identified *domain repurposing*, intended as the shifting of the configuration of elements constituting a domain to a new purpose, thus originating a new domain. This mechanism is activated by *repurposing triggers*, exogenous shocks that increase the salience and appeal of a new purpose in the actors' eyes, inducing them to shift their activities and artefacts towards the new purpose. If domain repurposing underlies the emergence of the industry at the core of a cluster by transforming initially leisure activities (i.e. hobbies, part-time jobs) into commercial production (i.e. businesses), localizing passion underlies the geographical concentration of the emerging industry in an area, molding it into an industrial cluster (Braunerhjelm and Feldman 2006).

Our main theoretical contribution is to identify localizing passion as a key mechanism of cluster genesis, thus highlighting people's collective emotions as an important, yet so far understudied, micro-foundation of clusters. While extant research emphasized the knowledge-based (e.g. Tallman et al. 2004) or social (e.g., Saxenian 1991) aspects of clusters, keeping a focus on macro- and meso-level factors, we identify the *emotional micro-foundations* of clusters as key to understand their genesis. More specifically, we argue that emotion-driven micro-processes such as localizing passion may underlie the social factors known to influence cluster genesis such as social networks (Saxenian 1991) and untraded interdependencies (Storper 1995). Thus, people's emotional attachment to spaces is a central factor underlying the "stickiness" of clusters to a geographical location (Markusen 1996).

THEORETICAL BACKGROUND

Industrial clusters are geographically concentrated industries made of "interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions" (Porter 2000

p. 197).[1] If an industrial cluster is a special type of industry where commercial production activities are geographically concentrated, cluster genesis and industry emergence are inherently intertwined. In fact, cluster genesis and industry emergence at least partially overlap in the early moments of cluster formation—i.e., before the first instance of commercial activity. Such early moments provide scholars with a unique window to study how the commercial production activities anchoring an industrial cluster first emerge (i.e., industry emergence) and how such activities eventually concentrate in, and stick to, a geographical location (i.e., cluster genesis). Tracking the actors, activities, and artefacts involved in these early moments allows to analytically disentangle the micro-level mechanisms underlying these two macro-level outcomes.

Since cluster genesis and industry emergence are intertwined, in what follows we review selected insights from research on these linked phenomena. Our review will show that the literatures on cluster genesis and industry emergence are in fact complementary: while the former has mostly focused on macro-level antecedents and the geographical localization of industrial activities; the latter has started to unpack micro-level antecedents but has devoted less attention to their spatial location and consequences.

Antecedents and processes of cluster genesis

The literature on industrial clusters has pointed at a number of key antecedents of cluster genesis, notably: agglomeration economies and knowledge spillovers (Feldman, 2000; Iammarino and McCann, 2006; Shaver and Flyer, 2000), untraded interdependencies and institutions (Perez-Aleman 2005), and entrepreneurs (Ferriani et al. 2020; Klepper 2007). Below we discuss research on each of these antecedents.

Agglomeration economies and knowledge spillovers

Agglomeration economies are the systematic economic advantages deriving from the concentration of complementary economic activities in a geographical area (Duranton and Puga 2004). These economies are external to the firm, but internal to a cluster, therefore providing the basis for regional specialization. For example, Smith and Florida (1994) found that suppliers tended to locate near automobile assembly parts to

[1] An industry is a group of organizations producing and commercializing products or services that are close substitutes (Gort and Klepper 1982; Porter 1990). An industrial cluster is a particular type of industry where production and commercialization activities are geographically concentrated. To underscore the close conceptual link between clusters and industries, in what follows we use the terms “clusters” and “industrial clusters” interchangeably.

form industrial district agglomerations. One important aspect of agglomeration relates to knowledge spillovers, which emerge from "working on similar things and hence benefitting much from each other's research" (Griliches 1992, p. 36). Research on spillovers mostly focused on R&D activities, and used data such as patent distribution (Jaffe 1989; Moeen and Agarwal 2017) and the mobility of scientists (Zucker and Darby 1996) and patent holders (Almeida and Kogut 1997).

Studies have consistently found that knowledge spillovers are geographically bounded, thereby reinforcing the notion that some aspects of knowledge are 'sticky' and can only be accessed through close proximity (Markusen 1996; Szulanski 2003). However, related work suggests that proximity or co-location is a valuable yet insufficient condition to enable knowledge access, which is created through social interactions and communication between actors within the cluster (Tallman et al. 2004). The concept of untraded interdependencies is particularly useful to capture such social factors.

Untraded interdependencies and 'knowledge in the air'

The knowledge perspective on cluster development draws on Storper's work (1993; 1995, 1997) and the concept of agglomerations. Storper (1995) identifies two distinct "schools": the transaction cost school, which focuses on economic and monetary input-output relations and the efficiencies of co-location (i.e., *traded* interdependencies); and the evolutionary school, which considers the former, but also emphasizes the role of informal and non-monetary arrangements (i.e., *untraded* interdependencies).

Untraded interdependencies are the informal rules, conventions, norms, and knowledge-sharing practices for which no traditional market mechanisms exist and that rarely flow out of a specific geographical area (see Storper 1997, p. 5; but also Tallman et al. 2004). While scholars in a variety of literatures highlighted the importance of "knowledge sharing or spillover in the absence of pecuniary rewards" (Moeen et al. 2020, p. 225)—a common phenomenon in offline or online user-driven contexts (Autio et al. 2013; Shah 2006)—the concept of untraded interdependencies distinctively emphasizes the geographical "stickiness" of knowledge sharing's informal rules, norms and practices. Such geographical dimensions highlight the tacit and co-located nature of untraded interdependencies, well captured by Marshall's foundational concept of 'knowledge in the air' (Marshall 1890). If much of the work on clusters

focuses on traded input-output agglomeration efficiencies resulting from the co-location of supply chains, labor markets, and subcontracts (Lawson 1999), the concept of untraded interdependencies suggests instead that social, institutional, and other non-economic factors are as important to sustaining and developing clusters (Maskell 2001; Saxenian 1991; Ter Wal and Boschma 2011). When considering the genesis of a cluster, it is likely that such *untraded* interdependencies may potentially become even more important as, by definition, in the pre-commercialization stage there may be little or no economic drivers for the development of the *traded* interdependencies constituting agglomerations economies (Krugman 1991). Traded relationships and cost efficiencies are likely to play a more central role in later stages of cluster development, once business organizations are established.

The antecedents so far examined—agglomeration economies and untraded interdependencies—have been mostly treated as synchronous, which means that the formal, transaction-based and the informal, non-monetary aspects of a cluster develop together as the cluster evolves. For example, Feldman and Braunerhjelm (2016, p. 3) argue that "interrelated institutions formed over time *in tandem* with the firms that make up industries in the region" (emphasis added), calling for more research to unpack the dynamic interplay by which untraded interdependencies and agglomeration economies co-evolve. More specifically, given the focus of the cluster literature on macro-level factors such as agglomeration economies and untraded interdependencies, less is known about the micro-level mechanisms underlying the emergence of such macro-level factors and their dynamic interplay over time. This motivates our focus on the micro-foundations of industrial clusters. It is here that the literature on industry emergence can be particularly useful as it has begun to unpack some micro-level antecedents; however it has devoted less attention to their spatial and processual aspects, as we argue below.

Antecedents and processes of industry emergence

Research on the early stages of industry emergence—i.e., the phases preceding the first instance of product commercialization—identified several antecedents, notably trigger events prompting industry emergence and more micro-level antecedents, such as a variety of actors (e.g., entrepreneurs, amateurs and users, social movements) and actions, which are instrumental in spearheading a new industry (Agarwal and

Shah 2014). These micro-foundations have recently been identified as an important aspect to understand the emergence of industries and their knowledge (Moeen, Agarwal, and Shah 2020). While a comprehensive review of this scholarship is outside the scope of this work, given our interest in micro-foundations and bottom-up processes of industry emergence, we highlight below two research conversations shedding light on micro-level actors and actions, namely the literatures on user entrepreneurs (Baldwin, Hienerth, and Von Hippel 2006; Shah and Tripsas 2007) and social movements (e.g., Lounsbury et al. 2003; Rao et al. 2000; Sine and Lee 2009).

Actors and actions underlying industry emergence

Governments (e.g., Klepper 2015), scientists and entrepreneurs (e.g. Powell et al. 2012; Powell and Sandholtz 2012) are not the only actors in industry emergence, particularly when emergence occurs bottom-up. The literature on social movements, for example, has shown that new industries can emerge out of collective actions aimed at boycotting, disrupting, or reforming existing ones (Sine and Lee 2009). Such actions often end up reverting the "status quo," thus favoring the emergence of new industries. For example, environmental movements were also instrumental in constructing cultural frames that proved valuable for the emergence of the US for-profit recycling industry (Lounsbury et al. 2003). Amateur and user communities facilitate bottom-up industry emergence by sharing technical, operational, and market knowledge (Agarwal and Shah, 2014), supporting unmet customers' needs (Shah 2006), transforming leisure practices into businesses (Lüthje et al. 2005) sometimes accidentally (Shah and Tripsas 2007). However, this research has devoted less attention to systematically unpacking the micro-level processes binding together large collectives of users (and the organizations they eventually create) in *specific spatial locations*. In addition, these processes alone are seldom sufficient conditions to initiate industry emergence and recent studies have warned about the critical role of triggers (Agarwal et al. 2017), which we discuss next.

Triggers initiating industry emergence

Research has identified various triggers initiating industry emergence, such as scientific and technical discoveries (e.g., Dosi 1988), changes in cultural values (e.g., Rao et al. 2000), regulatory shifts (e.g. Gao and McDonald, 2020; Lounsbury et al. 2003), demand shocks (e.g. Agarwal and Bayus 2002), unmet user

needs (Shah and Tripsas 2007), and grand challenges (Klepper 2016; Mowery 2010). These events may disrupt existing industries and open up a window for the incubation of new ones. Agarwal and colleagues (2017) provided a systematic conceptual framework that illustrates how triggers can initiate industries by prompting a heterogenous set of actors to engage in innovative, entrepreneurial, and experimental activities, which can in turn facilitate industry incubation. At the same time, these authors call for more research "to uncover other important triggers" (Agarwal et al. 2017, p. 298) and their potentially heterogenous effects on industry emergence, with particular reference to the mechanisms activated by triggers.

Juxtaposing the insights of the cluster genesis and industry emergence literatures, it is clear that less attention has so far been devoted to the micro-level mechanisms underlying the genesis of industrial clusters. In fact, scholars have recently lamented that, despite its relevance, the period preceding the first commercialization has been largely understudied in industry studies (Agarwal et al. 2017; Moeen and Agarwal 2017) and the same limit has been highlighted in the cluster literature (Braunerhjelm and Feldman 2006). As noted above, most accounts of cluster genesis assume the prior existence of entrepreneurs, business organizations, and transactions originating agglomeration economies. But what came before them? How do the ingredients of cluster formation coalesce, interact, and stick together in specific locations? These unresolved puzzles speak to our central research question regarding the micro-level mechanisms underlying the 'primordial soup' of cluster genesis, which we empirically investigate in this paper.

DATA AND METHODS

Our study combines historical and contemporary archival sources with interviews and quantitative data to investigate the micro-level mechanisms of industrial cluster genesis. To do so, we use established protocols for inductive qualitative research (Gioia et al. 2013; Strauss and Corbin 1990). This approach is well-suited to our research question as it allows exploration of the interpretations of the individuals and groups that took part in the events underlying the process of cluster genesis (Isabella 1990). We follow management studies using historical methods (Argyres et al. 2020; Ingram et al. 2012; Vaara and Lamberg 2016) to investigate events resulting from complex dynamics and context-specific meanings (e.g., Cattani et al. 2013; 2017; Hargadon and Douglas 2001), for industry and cluster emergence (Kirsch at al. 2014).

Consistently with this research, we aim to develop narratives combining actors, events, and historical facts to advance theoretical understanding (George and Bennett 2005). Thus, our intent is not to test theory, but rather "to sharpen, illustrate, and ground our arguments" with historical evidence (Cattani et al. 2017, p. 971).

Research setting

The research setting for this study is the British Motorsport Valley's (BMV) industrial cluster located in UK within a crescent-shaped region to the north, west, and south of London (Motorsport Industry Association, 2019). In 2012, this industrial cluster was estimated to have an annual turnover of £9 billion and employ 41,000 people, encompassing around 4,500 organizations which spend around 25% of their turnover on average on research and development (Motorsport Industry Association, 2013). This region has been repeatedly acknowledged as an exemplary industrial cluster (Aston and Williams 1996; Henry and Pinch 2000; Henry et al. 2000) that includes different actors such as vehicle manufacturers, parts suppliers, service providers, racetracks, supporting institutions, associations, schools, research centers, and universities. We studied this cluster for several reasons.

First, BMV represents an "unusual revelatory case" (Eisenhardt and Graebner 2007, p. 21) to illustrate micro-level mechanisms of industrial cluster genesis in the pre-commercialization phase, as motorsport originally lacked both institutional support (it was even stigmatized as illegal and harmful) and resource access. Thus, we had plausible reasons to presume that this industrial cluster emerged bottom-up rather than top-down, making micro-level mechanisms more "transparently observable" (Pettigrew 1990, p. 275).

Second, this cluster is clearly identified and established. There is consistent agreement among scholars, practitioners, and policy makers on defining this agglomeration as an industrial cluster. The firms in the cluster are monitored and coordinated through an official trade association—the Motorsport Industry Association (MIA). Since the 1990s this cluster has received governmental acknowledgment and support and has been recipient of specific industrial policies (Foreign and Commonwealth Office, 2000). The BMV cluster has also been explored by various academic (e.g., Henry and Pinch 2000; Henry et al. 2000; Henry et al. 1996; Pinch and Henry 1999a, 1999b; Pinch et al. 2003; Pinch et al. 1997) and industry studies (e.g.,

Aston and Williams 1996; Beck-Burridge and Walton, 1999; Couldwell 2012). However, these studies have focused on the development of the cluster since the 70s, with this period marking the development of a fully-formed cluster. Our study focuses instead on the micro-level mechanisms and processes preceding this time, unfolding in the early moments of cluster genesis, when commercial motorsport activities were *not* yet in place.

Third, the case features a significant amount of archival data, which ideally suits a historical case study (Argyres et al. 2020). Indeed, since the early years of the twentieth century, the region where the cluster formed has been uniquely characterized by a high concentration of racing enthusiasts and motor clubs, whose stories and activities have been meticulously reported in numerous publications (e.g., bulletins, newspapers, books, magazines, letters, reports), which today are collected in specialized libraries, private and public archives, and more recently have been shared in digital form.

Data collection

Table 1 below details the type and amount of data collected.

[Insert Table 1 about here]

As recommended in qualitative inductive studies (Gioia et al. 2013; Glaser and Strauss 1967), our data collection combined historical and contemporary archival sources with in-depth semi-structured interviews, aiming to obtain "both retrospective and [in a few cases] real-time accounts by those people experiencing the phenomenon of theoretical interest" (Gioia et al. 2013, p. 5). As two of the authors are intimately familiar with the research setting, a series of precautions were taken to avoid the "going native" trap (Gioia et al. 2013, p. 5) and we compared our interpretations with those of a third author and the informants who were less familiar with the setting. These included two academics in the fields of management and history. We also collected quantitative data to validate emerging findings and identify key trends.

Archival data

We collected multiple documents that depicted the cluster today and the activities that preceded it, starting with the first establishment of the motor clubs (i.e., 1910s) and moving forward until the official emergence of the industrial cluster (i.e., 1970s). The final selection of documents is illustrated in Table 1.

The search progressed both online and offline. Three sources were particularly informative: the historical archive of Motorsport Magazine (recently digitized and published online) which has covered each motorsport event in the UK since the 1920s, the historical records of the 750 Motor Club (Morgan 2009), and the 500 Club archives, both available in digital and physical format (Stowe 2001). We concluded our archival data collection when confident that no major source was left out.

Interviews

Once we reached a general understanding of the phenomenon through our archival data, we conducted semi-structured interviews with knowledgeable informants (see Table 1 for details). We were able to interview two club members who took part in motorsport racing activities at the time of their occurrence, one of which was Sir Stirling Moss, active as a competitor in the late 1940s. We triangulated our informants' statements with archival data to avoid imprecisions and retrospective biases. Anonymity was offered to all our informants (23), but some allowed us to share their identity.[2] When possible, interviews were fully recorded and transcribed. Also, interviewees helped identifying additional sources, increasing the total number of documents initially collected.

Quantitative database

We built an extensive and unique, so far unavailable, database of motorsport companies (manufacturers and service providers) founded and operating in the British Motorsport Valley during the early stages of formation of this industrial cluster (1911-1970). We started by drawing on the studies reporting a comprehensive list of companies operating in the Motor Valley (Aston and Williams, 1996; Beck-Burridge and Walton, 2000; Henry and Pinch, 2000; Henry et al., 1996; Pinch and Henry, 1999a) and combining these lists into a dataset, eliminating duplications. Next, we traced data such as year of foundation, name of the founder(s) and key employees, and geographical location. Then, we filtered UK-owned and UK-based companies active in the post-war period and, using the 500 Club and 750cc Motor Club archives, we investigated the connection between motor club members and BMV companies (see findings, part I).[3] By

[2] The full list of informants is available from the authors upon request, for private disclosure only.

[3] Through the years, the clubs' historians have meticulously recorded a list of former and current members which ended up working in the British Motorsport Valley as entrepreneurs, technicians, engineers, drivers, etc. By analyzing these

examining websites and historical records, we then classified the organizations among motorsport-specialized and non-specialized manufacturers, suppliers and service providers as well as classifying the organizations across 23 industries, with a great majority of organizations being involved with aerospace and automotive (what we define below as 'related industries'). Finally, we validated our dataset with three motorsport historians. This comprehensive and systematic archival research produced what is today the only database of companies covering the early genesis of the British Motorsport Valley's industrial cluster.

Data analysis

Our data analysis involved three distinct activities: 1) temporal bracketing; 2) coding; 3) localization and mapping. While below we illustrate these activities in sequence, in practice they were concurrent and often iterative, as common in qualitative research (e.g., Marino et al., 2015; Stigliani and Ravasi 2012).

Temporal bracketing

Establishing the phases and start- and end-points of the process under study—also known as "temporal bracketing" (Langley 1999)—was a challenging task. After interviewing historians and industry experts and analyzing our secondary sources, we identified the start-point with the establishment of the first British Motor Club in 1911 (Bristol Motor Cycle and Light Car Club) and the end-point in the early 1970s, which scholars and practitioners identify as the establishment of the industrial cluster (Henry and Pinch 2000; Pinch and Henry 1999b). Table A1 in the Appendix offers a timeline of the key events in between.

We then analyzed the various events within this time period and we completed our timeline with 'critical junctures'—i.e., events that "durably transform previous structures and practices" (Sewell 1996, p. 843)—which usually correspond to turning points within the flow of events. As we analyzed our qualitative data, it became clear that in our empirical context such critical junctures are the events that facilitated the transformation of the domains that we had identified via coding (see below). Once we identified the repurposing mechanism via our inductive coding (see below), we came to conceptualize these events as "repurposing triggers." Two of these repurposing triggers emerged clearly from a first round of analysis: the

lists, we were able to identify other organizations which were not listed in the aforementioned studies. Two sources—Aston and Williams (1996); Beck-Burridge and Walton (2000)—were also instrumental in tracing those organizations founded or composed by members of the 500 Club, the 750cc Motor Club and other clubs.

end of World War II in 1945; and the start of the Formula 3 racing series in 1950. Subsequent analysis also revealed that each of these trigger events was further amplified by an additional trigger: the 1945 'Purchase Tax' and the 1955 'Le Mans Disaster,' respectively. Table 2 below summarizes the four repurposing triggers identified. The reasons supporting the selection of these triggers, and the distinction between supply- and demand-based triggers, are discussed in the findings and discussion sections respectively.

[Insert Table 2 about here]

Coding

Given our interest in the micro-foundations of industrial cluster genesis, we focused on what people did on the ground, sifting through our archival and interview data to identify events and locations where people engaged in motorsport activities. Specifically, we began sorting our data along three key units of observation: (1) actors; (2) activities; (3) artefacts. These proved to be adequate "data containers" to consistently capture the micro-level processes unfolding through the prolonged historical period under study (Kaplan 2008: 733). By organizing our data along these three units of observation and noting down how actors, activities, and artefacts changed across time, we identified an evolutionary path, which we conceptualized and visualized as the layering of three domains, each emerging at a different point in time (i.e. "critical junctures", as noted above). We provisionally termed these domains as (i) casual leisure, (ii) serious leisure, and (iii) business.[4] Using "domain" as aggregate construct proved useful to capture configurations of types of actors, activities, and artefacts that were bundled together by a different purpose, and it allowed us to further refine our qualitative longitudinal analysis . Table A2 in the appendix shows the result of these multiple rounds of qualitative longitudinal analysis, comparing how actors, activities, and artefacts change across domains.

While re-organizing data by domains, we also began to notice that key concepts in the industrial cluster literature—namely, untraded and traded interdependencies—were useful to capture emerging patterns of

[4] We labelled the first two domains by using constructs already available in the literature. Specifically, we adopted the definition of leisure as activities conducted for their intrinsic enjoyment (e.g., hobbies) rather than for extrinsic rewards (see Iso-Ahola 1980). Within leisure activities, we distinguished casual leisure (e.g., unstructured hobbies) from serious leisure (e.g., structured hobbies) based on the increasing level of deliberate effort, knowledge, skills, and personal commitment (Stebbins 1982, 1997).

similarities and differences across domains. In fact, we noticed that while in the initial casual leisure domain actors shared mostly informal rules, conventions, and practices of knowledge sharing, thus forming untraded interdependencies, in the serious leisure and business domains actors started formal transactions with monetary compensation, indicating the emergence of traded interdependencies. In Table A3 in the appendix we visualize the evolution of traded and untraded interdependencies across domains.

Examining the changes and similarities between actors, activities, and artefacts across domains, as well as the evolution of traded and untraded interdependencies, we started focusing on the micro-level mechanisms underlying such patterns in the data. Specifically, we realized that, while the underlying elements changed over time in terms of their general purpose (as captured by our notion of domain), they did not significantly move from their original location. We thus embarked in a inductive investigation to identify the micro-level mechanisms responsible for changes in activities' purpose and their spatial "stickiness."

We started by following an open coding procedure of our secondary data and interviews (Strauss and Corbin 1990). As common in open coding, a proliferation of different codes initially emerged, which we progressively combined into thirteen first-order codes via "axial coding" (Strauss and Corbin 1990) and then combined into a four more abstract second-order codes, in turn reduced to two overarching aggregate dimensions (i.e., 'domain repurposing'; and 'localizing passion'). Figure 1 shows our final coding structure.

[Insert Figure 1 about here]

To capture collectively shared emotional aspects using qualitative data, we followed established methods to gauge collective emotions via textual and historical data (see Kouamé et al. 2020 for a recent review). Such methods start from the assumption that collective emotions are inter-subjectively constructed (e.g. Turner and Stets 2005; Goodwin and Pfaff, 2001) and can thus be empirically examined through direct or indirect observation of emotional expressions *among* people (Kouamé and Liu 2020, p. 3). In short, collective emotions can be inferred from the talk, text, and other symbols that people share (Farny et al. 2019; Massa et al. 2017; Toubiana and Zietsma, 2017). Specifically, as we noticed that the word "passion" was repeatedly used in our archival documents and interviews, we started to focus on the hedonic tone (or valence) of emotions (e.g., Maitilis and Ozcelik 2004) and coded words connoting the positive eagerness to

act and the enthusiasm that in our archival data and interviews was associated with the concept of "passion." For example, we coded for words such as "happy," "fun," "pleasant," "excitement," "enjoy" (see quotes in the part II of our findings and Table 3). We also systematically identified and coded the sentences where specific locations and places were associated with words connoting such positive emotional tones. Finally, to corroborate our interpretations, we validated our coding with one of our expert informants. Illustrative examples of the quotes coded for our localizing passion mechanism are provided in Table 3 and in Part II of our findings section.

[Insert Table 3 about here]

Localization and mapping

Localization is a key aspect to investigate industrial clustering. We developed four interactive maps—one aggregating all locations and three related to the domains outlined earlier as they emerged over time— to provide a visual analysis of how the key locations in BMV cluster evolved. Triangulating our archival and quantitative data, we combined the locations of the 218 companies featured in our company dataset with other locations relevant to the BMV cluster genesis according to our historical research. This led to the identification of 357 main locations, which included: club locations (pre-1950); marques; motorsport companies; companies in related industries (divided into: automotive; aviation/aerospace; motorcycles, high-end motorsport, and others); institutions and associations; universities with motorsport research and/or education; racetracks from WWI airfields; standard racetracks; hill climbs and time trials. Each location is provided with a start- and end-date.

All these locations were input in a set of customized Google maps, now publicly available online in anonymized form (see links in Figure 3 and Figure 6 below). We first created a cross-sectional map including all the locations (Figure 3). Then we created three maps providing "snapshots" of the initial phases of the three domains we identified: Casual Leisure (1911-1944); Serious Leisure (1945-1949) and Business (1950-…). These interactive tools allow the readers to better visualize locations and distances, combine them with other maps and support the replicability of the study (a challenging aspect for qualitative, historical research).

FINDINGS

Overview of the process model

Figure 2 depicts the process model of industrial cluster genesis induced from our data.[5] The concepts and mechanisms visualized in Figure 2 are supported with empirical evidence in the findings sections below.

[Insert Figure 2 about here]

Our model conceives the genesis of industrial clusters as a process of layering of three distinct domains—i.e., casual leisure, serious leisure, and business—that emerge on top of each other at different points in time as made clear by the large grey bands going left to right in Figure 2 (i.e., the grey bands identify the domains). Each of these domains connotes a qualitatively different purpose for its constituting actors, activities, and artefacts. Specifically, while the *casual leisure* domain connotes activities whose purpose is intrinsic enjoyment (e.g., hobbies), the *serious leisure* domain instead connotes semi-professional activities (in our case competitions) that thus require an increasing level of deliberate effort, skills, and personal commitment (i.e., serious hobbies)—see Stebbins 1982, 1997. The *business* domain activities instead are full-time professional and explicitly oriented towards monetary, extrinsic rewards (Iso-Ahola 1980).

As visualized in Figure 2, our model traces back the primordial origins of industrial clusters to, first of all, the emergence of a causal leisure domain populated by amateurs intrinsically motivated to play with artefacts for their personal enjoyment. These actors are bound together in specific locations by localizing passion (curved, vertical arrows), the emotional energy that they share while jointly carrying out such activities, which in turn make them emotionally attached to the spaces where the activities take place. As we illustrate in the findings section (part II), localizing passion enables the initial emergence of the untraded interdependencies—i.e., informal rules, conventions and practices for knowledge sharing—that we described in table A3 in the appendix (visually represented in Figure 2 as the thin white lines linking the actors).

[5] The model illustrated here as the first part of our findings was actually generated as the last step of our inductive theorizing process. To facilitate the readability of our qualitative research findings, we follow recent methodological recommendations (Berends and Deken 2020) by adopting a "model-led composition." We thus introduce the reader to the overall theoretical model and its constituting elements upfront, and then illustrate the empirical evidence using such theoretical scaffold as organizing device.

Importantly, the casual leisure activities are supported by a regional economy of related industries that provide key resources and inputs to such activities (i.e., materials, artefacts, skills, knowledge, and people), which serve as an important macro-level antecedent facilitating cluster genesis. Since these related industries are pre-existing and external to the cluster, to capture their role we use the concept of *external agglomeration economies*—defined as economic advantages deriving from locating activities in proximity to industries external to the focal cluster of interest (see external circles below the domains in Figure 2). We will provide empirical evidence supporting the existence of such economies in our findings and theoretically elaborate on this concept and its implications in the discussion.

Our model also highlights the role of *repurposing triggers* (explosion shapes in Figure 2), which we defined above as the exogenous shocks that increase the salience or appeal of a new purpose in actors' eyes. Such triggers activate the key mechanism of domain repurposing (thick black arrows in Figure 2), which shifts the configuration of actors, activities, artefacts in each domain towards a new purpose, thus originating a new domain. As visualized in Figure 2, it is through domain repurposing that the serious leisure and business domains emerge out of the initial casual leisure domain, ultimately turning initially amateur, intrinsically-motivated activities into commercial production activities oriented towards a profit purpose. Thus, we conceive domain repurposing as the mechanism underlying the emergence of the industry that is at the core of any industrial cluster. Importantly, as such industry begins to form, the contribution of local related industries in the form of *external agglomeration economies* decreases in its importance (as represented by the progressively smaller size of the thick white arrow at the bottom of the domains). Finally, as the serious leisure and business domains emerge, the untraded interdependencies (thin white lines) connecting the actors in casual leisure, and partially in serious leisure, are substituted by traded interdependencies (thin black lines), which constitute *internal* agglomeration economies in the business domain. It is at this time that the actors start engaging in formal monetary exchanges (i.e., they develop business trades).

We posit that localizing passion is the mechanism responsible for the stickiness and clustering of the industry in a specific geographical area. It is also important to note that as the different domains emerge on

top of each other through domain repurposing, the localizing passion initially characterizing the casual leisure domain persists and amplifies also to the other two domains (as visualized in Figure 2). This maintains the different domain activities in the same geographical area. We visualize this geographical clustering effect with the double vertical arrows depicted in Figure 2, which represent the inward, centripetal effect of localizing passion, a "sticky catalyst" binding the elements of a domain together in a geographical area (cf. Furnari 2014). In the findings below, we refer to the specific locations involved in the three domains and the emotional attachment that the actors develop. Finally, it is important to note that despite being layered through different waves of repurposing, the initial actors populating the prior domain do *not* disappear, but evolve, and interact with each other and with actors in other domains. This is why these actors are connected *within* and *across* domains through untraded interdependencies (thin white lines) and traded interdependencies (thin black lines).

In what follows, we illustrate our empirical evidence by using this process model as an organizing device. Our findings are presented in two parts. The first illustrates the empirical evidence about the macro-level antecedents of the genesis of the BMV industrial cluster (i.e. external agglomeration economies from related industries) and their connection with micro-level antecedents (e.g., clubs and amateurs engaging in activities "on the ground"). The second part provides empirical evidence substantiating the two micro-level mechanisms featured in our model (i.e., *localizing passion* and *domain repurposing*).

Findings: Part I—Macro-level antecedents of cluster genesis

Drawing on our unique database, the map in Figure 3 provides a cross-sectional representation of the locations of all the different organizations that have been part of the BMV in our period of observation[6].

[Insert Figure 3 about here]

In tracing back to the early genesis stages of the BMV industrial cluster, we realized the key role of

[6] Consistent with our definition of industrial cluster including not only firms operating in a core industry (i.e., vehicle manufacturers) but also "interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions" (Porter 2000, p. 197), the BMV industrial cluster includes not only motorsport manufacturers, specialized suppliers and service providers, media, trading associations, and supporting educational and research institutions (all specialized in motorsport), but also general suppliers and service providers that offer components and services to motorsport companies while operating in related industries (such as automotive, motorcycle, and aviation/aerospace).

regional economy of related industries (mostly automotive, motorcycle and aviation/aerospace) in providing inputs such as knowledge, artefacts, people and resources for early motorsport activities, thus providing what we define as "*external* agglomeration economies"—i.e., economic advantages deriving from locating activities in proximity to industries external to the focal cluster of interest. Figure 4 shows that suppliers of motorsport components and parts in the pre-WWII period were mostly non-specialized in motorsport, operating in other industries. Yet, as the industrial cluster begins to emerge, the contribution of non-specialized suppliers from related industries decreases and that of specialized motorsport suppliers increases. The latter aspect represents a viable proxy of the growing traded interdependencies (i.e. the *internal* agglomeration economies) which increase as the cluster develops.

[Insert Figure 4 about here]

This is also evident by observing the components used to build race-cars through time. Table 4 offers a visual and component-level comparison of three prototypical cars adopted across the three domains: bricolage car (casual leisure), kit car (serious leisure) and professional race car (business). As shown, the components sourced from related industries are present in the first car, less present in the second car, and completely absent in the third car—where all components are provided by motorsport specialized manufacturers.

[Insert Table 4 about here]

The contributions of related industries in the region is also evident by looking at club membership, i.e., examining the industries where club members were employed. They had diverse jobs and their professional skills outside the clubs were loosely related to motorsport. Many mechanics and technicians did participate—for example BACMC, one of the main clubs, was founded by employees of the Bristol Airplane Company, who were aerospace engineers. Such members adapted parts and solutions from automotive (i.e., standard road vehicles), or aviation/aerospace (i.e., airplanes)—(see also Pinch and Henry 1999a). In fact, as shown in Figure 5 below, a considerable proportion of non-specialized manufacturing firms and suppliers (operating in related industries) as well as specialized manufacturing firms and motorsport suppliers has a connection with the early motorsport clubs (meaning that either the founders or key employees of these

suppliers have been a member of the early motorsport clubs). Specifically, more than half (60%) of non-specialized motorsport manufacturing firms and suppliers operating in a different industry had a club connection, highlighting that early amateur motorsport activities were linked with inputs and resources from related industries.

[Insert Figure 5 about here]

This finding is further supported by looking at the locations of the key actors in the different domains (clubs, semi-professional racing teams, and motorsport companies) vis-à-vis the location of the companies operating in the related industries in the broader regional economy (see Figure 6 below).[7]

[Insert Figure 6 about here]

Figure 6 shows that companies in related industries were geographically close to the clubs when the casual domain emerged. Further, it also shows how the related industries' companies remained relatively stable in number and locations while the specialized motorsport companies grew exponentially in number and progressively clustered around the area delimited at the edges by the early clubs' locations and anchored north by the location of the iconic Silverstone racetrack. As we will discuss in the section below, these localization patterns are consistent with the mechanisms of localizing passion and domain repurposing.

Taken together, this evidence suggested the importance of the early amateur motor clubs and prompted us to understand how exactly these clubs contributed to the genesis of the BMV industrial cluster, and how the two leisure domains (casual and serious) linked to the emergence of the business domain. Our historical analysis revealed the answer lies in two micro-level mechanisms, which we unpack in the next section.

Findings—Part II: Micro-level mechanisms of cluster genesis

Now we turn to illustrate how localizing passion and domain repurposing operate in each of the domains—casual leisure, serious leisure and business—in our process, showing the connection between these mechanisms and the other key constructs of our model (untraded interdependencies and repurposing

[7] The visualization can be aided by using the interactive Google maps available at the link provided under the maps in Figure 6 As mentioned, domains do not disappear in time, but layer on top of each other, while their activities continue. However, in order to provide a visual longitudinal account, we bound our maps to the initial phases of the three domains: 1911-1944 (for casual leisure); 1945-1949 (for serious leisure); 1950-… (for business).

triggers).

Casual leisure domain (since 1911)

The earliest traces of motorsport activities in the UK date back to the establishment of the Bristol Motor Cycle and Light Car Club (BMC & LLC) in 1911, and its first hill climbs and time trial races near Bristol in 1912 and 1913, respectively. Other main clubs were the 750 Motor Club, established in London in 1939, and the Bristol Aeroplane Company Motor Club (BACMC), established in Bristol in 1944—see all club locations in Figure 6, map 1a. All these clubs shared the same founding motivation: allowing non-professional enthusiasts to compete with cheap, small-capacity cars (e.g., cars with small 500cc or 750cc engines) better suited to amateurs' spending ability.[8] The few companies producing motorsport products at the time (e.g., Bentley, Aston Martin, etc.—see blue dots in Figure 6, map 2a) were exclusively targeting niche, high-end customers or professional racing drivers—and thus unaffordable to mass market or motorsport amateurs.

Localizing passion and untraded interdependencies

The main reasons to participate to the early motorsport clubs were enjoyment, thrill, companionship, and peer recognition. Club members saw motor racing as casual leisure, a part-time affordable hobby, definitely not a business, and clubs entirely re-invested membership subscriptions into club activities without profit sharing (Source: 500 Club archives).

> *"We are indebted to the contributors who/as yet, have asked for no remuneration…Such is the spirit and enthusiasm of the Seven-Fifty-Motor Club" (Peck 1960)*

As indicated by the following quote by the founding captain of the 750 Motor Club, from the very beginning what brought together motorsport amateurs into the clubs' locales was their shared passion and the possibility of practicing together motorsport activities (e.g. runs, races, hill climbs):

> *"Dear Fellow Members, thank you for your very great support and enthusiasm,(…) all this has been a great indication of the enthusiasm among owners of the little '7' [i.e. the Austin 7 cars]…and will induce the others to join the Club so that they too may enjoy very pleasant company, a wide variety of Runs and meet others with the same ideals as themselves with whom they can talk to their heart's content on their pet subject" [Captain George C. Kipps, 750 Motor Club bulletin, May 1939]*

[8] The price of a second-hand car to participate to these competitions was around £2,000 pounds (£50,000 today).

Most club members were amateur drivers and self-trained technicians, driving bricolage cars which they had assembled on their own in their home garages.

> *"You could take all the little piece from a scrap yard back into your garage (…) The very first racing car I built, I built in the front room of my home. We had car parts all over the place. Basically, I was sort of learning as I went along" [Len Terry, Lotus Chief Designer, in "Brits who made the modern world" – Documentary 2013]*

Such bricolage cars were basic vehicles, often prepared by stripping down cheap road cars of unnecessary components which added weight and made them slower. Production activities (i.e., bricolage car construction) was poorly formalized and just a handful of companies specialized in motorsport vehicles or parts that could fit the needs the so-called "impecunious enthusiasts" (Morgan, 2009). This is why club members often adapted parts originally designed for other purposes—mainly road cars, motorcycles, or airplanes—and improved the car performance by building additional parts with basic tools and hardware.

> *"The intention was to allow as many people to race as possible, and although specifying that the Austin Seven chassis side members, rear axle and engine crankcase and block had to be used, there was freedom in other areas, both to allow existing modified cars to compete and to encourage development of ideas." (Morgan 2009, p. 23)*

Motor clubs were characterized by both fierce competition and friendly cooperation. On the one hand, clubs were competitive spaces, where ambitious enthusiasts attempted to outperform others in driving and/or mechanical skills. Participants engineered continuous technological upgrades, since a faster car was a key asset to win races. On the other hand, members also shared a strong sense of companionship and solidarity, which was cemented by mutual support, favors, and friendly, unpaid exchanges.

> *"If you were stuck for something—a spark plug or something else on the car—you'd walk along and a guy would say, 'Can I help you?' And you'd help each other out to make sure you were all on the start line. Sharing plugs and everything. No charge, just 'Pay me back next time or do me a favour' That's how it was—a very good atmosphere. It was a good sport." [Norman Davis, originally 500 Club member and later Jaguar test driver, in Parker (2013)]*

The sense of belonging to the clubs initiated a set of cooperative routines and tacit rules to support the development of the cars. For example, when bricolage solutions led to a significant performance improvement, the amateur technicians were expected to codify their know-how in simple drawings and notes, share it with other members at official club meetings, or publish it on the periodic club bulletins.

> *"He [Holly Birkett] had a passion to understand fundamental engineering principles, particularly about tyres, handling, steering geometry, and suspension (…) It became my job to absorb and translate this to the brainstorming group which was normally in session around the dining table at*

> *Pondtail Road [Horsham, West London]. Holly felt an educational mission to convey all this to 750 members through its Bulletins, and through the monthly meetings like the Red Cow at Hammersmith (…) In this way the Club rapidly became the meeting place and forging ground for an entirely new element in motor sport—young engineers with bright ideas but little money." [Charles Bulmer 750 Club member, Interview, in Morgan (2009)]*

The other members would then learn about the new solutions, adopt them, further upgrade them, and test them on their cars. If successful, they had to continue the cycle of informal learning by sharing their enhanced know-how with the other members. As the quote above reveals, the activities surrounding car development, construction, and racing contributed to the emergence of informal and tacit rules, conventions, norms, and knowledge sharing practices—i.e., what we call "untraded interdependencies."

In sum, historical evidence suggests that motorsport in its infancy emerged as a playful activity, where people with different specialties, bonded by shared passion, engaged in non-remunerative activities in their free time. The use of basic tools and scraps (often adapted from other industries) to upgrade bricolage cars in home garages, the informal and unstructured gatherings in public spaces, the secretive and illegal hill climbs and time trial races in countryside roads, the unpaid technology exchanges (among other factors depicted in Table A2 in the appendix) clearly show the non-professional, non-commercial nature of this initial domain. The casual leisure activities constituting this domain were loosely regulated by tacit rules, norms, and conventions that encouraged open experimentation and knowledge-sharing—in Figure 2 these are represented by the 'untraded interdependencies'—the thin white lines that connect the actors.

Serious leisure domain (since 1945)

The second World War (WWII) deeply affected the motor clubs, reducing, and in some cases completely extinguishing some of their key resources—money, technology, gasoline, and most of all, people. Ultimately, WWII brought all forms of motorsport to halt in the UK, due to an official ban aimed at preserving fuel for military purposes (Source 500 Club archives). Yet, at the end of the conflict, it emerged how WWII unexpectedly facilitated the domain repurposing of the casual leisure domain into serious leisure (see elements in Tables 4) in two key ways, which we illustrate below.

Domain repurposing and its triggers

First and foremost, WWII helped repurposing actors and activities from formerly distant industries,

namely automobile and military aviation, because former war pilots and technicians re-applied their knowledge and skills learned during the war into new motorsport practices (see trigger a in Table 2). For example, the Bristol's BACMC club was formed by employees of one of the most important British airplane companies. As former war pilots and technicians had increased their familiarity with light-weight materials and aerodynamics, their skills were redeployed in motor racing after the end of WWII.

> *"Those who, whilst in service, had learned new skills in handling machineries eagerly sought out similarly minded individuals, and this led to an explosion in motor club numbers in the late 1940s and early 1950s." (Morgan 2009, p. 22)*

> *"Wing Commander Frank Aikens AFC and Bar, was one of the leading lights of the early years in his special. (...) With the aid of a German POW, at Aikens' RAF base, he extracted considerable power from the engine." [500 Club archives]*

Second, the war also provided new artefacts for repurposing—particularly in more rural areas, where army bases and airfields were located. The war supplies, abandoned in de-militarized locations, included mechanical parts, scraps, and equipment to engineer and manufacture machines—which could be used for bricolage race cars. Such 'remnants' offered material for experimentation and technological upgrades to advance racing activities. These originally rural or militarized areas thus started to become key destinations for motorsport enthusiasts, venturing there to search for dismissed mechanical parts and tools. Amateur racers also soon realized that, compared to hill climbs and countryside roads, the concrete runaways and perimeter lanes of abandoned military airfields provided better surfaces for testing cars' designs and for car racing:

> *"Slowly the British Government began to release some control of the many airfields, built for Fighter Command, Bomber Command and the USAF. The perimeter roads and runways were ideal and various groups made attempts to organise unofficial events." [500 Club archives]*

Hence, it was ultimately the location of these abandoned airfields and demilitarized areas that led motorsport enthusiasts to move their activities from the areas surrounding London and Bristol and venture into the countryside around Oxfordshire and the Midlands—see Figure 6, map 1b.

The domain repurposing from casual to serious leisure was also supported by another repurposing trigger (see trigger b in Table 2). In 1945 the British government imposed a 'Purchase Tax' to reduce domestic demand and sustain exports. Such tax was 33.3% on basic cars and 66.65% on luxury models, which included sport models. This onerous duty tarnished the national business of niche luxury

manufacturers and created a demand for the kit cars—used in amateur and minor motorsport series—which were exempt from the Purchase Tax and could offer comparable racing performance thanks to their power-to-weight ratio and quick handling. Some club members sensed the opportunity to generate an additional income:

> *"UK purchase tax made cars in kit form most attractive and many Coopers were sold in this tax-free form and were completed by their purchaser and his mechanics." (Nye 1983, p. 7).*

The re-purposing of airfields into race-tracks laid the conditions for more advanced racing. On July 13th, 1947, the Gransden Race (hosted at the Royal Air Force Gransden Lodge—see Figure and Figure 6, map 1b) represented a pivotal event marking the repurposing of car racing from a casual to serious leisure. This former military location hosted the first post-war car-vs-car race, thus defining a new, more professional racing format. Up to that moment, club racing mostly happened as time trials, where the performance of each car was individually timed across a narrow, countryside path—the shorter the time to complete the path, the better the performance (see brown 'flag' dots in Figure 6, maps 1a and 1b for these countryside locations). By using airfields' wide runways, cars were instead able to simultaneously race 'wheel to wheel' on the track, which exposed the contestants' different driving skills, as well as the performance of the diverse technologies which had to support the, now necessary, overtaking. Thus, this new racing format pushed participants to further develop their technology and driving skills.

Many club members, who had engaged (often solo) in bricolage car-building, started joining forces and formed marques—i.e., organized, semi-professional racing teams—with more defined and specific roles (e.g., principals, managers, mechanics, engineers, drivers).

> *"While the elite teams like Ferrari could afford the best mechanics in Europe, Chapman could not. So he turned to his own friends in the 750 Club and enticed them to sing up for his Lotus dream [his Lotus company]." [Len Terry, Lotus Chief Designer, in "Brits who made the modern world" – Documentary 2013].*

Marques' staff sometimes received minimal compensations for their work, mostly funded by sharing race prizes. A limited number of monetary transactions also began to occur privately among clubs and marques' members (e.g., sales of cars, components). This indicates the emergence of traded interdependencies (represented in Figure 2 with the thin black lines) linking some actors in the serious leisure domain. Importantly, such emerging traded interdependencies were made possible by the pre-existing

informal social relationships and untraded interdependencies that had developed in the casual leisure domain (thin white lines). In fact, while the semi-professional activities of the serious leisure domain were forming, the casual leisure activities continued to take place in the clubs and racing tracks. (often repurposed airfields—see grey 'flag' dots in Figure 6, map 1b). As we show below, these activities continued to be fed by localizing passion, which led to emotional attachment to the spaces where activities occurred and to the continuous nurturing of untraded interdependencies.

Localizing passion and untraded interdependencies

Right after WWII, the motor clubs continued to play a key role in keeping alive the passion of amateur motorsport enthusiasts. In fact, historical records show that in between the end of the war and the early 50s, the clubs' membership grew substantially. For example, in 1947 the 500 Club had about 200 registered members, and in 1951 the 750 Motor Club had reached 500 members (Source: Clubs' archives). Informal meetings among enthusiastic club members started to originate ideas for more professionalized races that became recurrent. In those years, the passion of the motorsport enthusiasts was such that they literally broke into several abandoned airfields (see grey 'flag' dots indicating racetracks from WWII airfields in Figure 6 map 1b) to host there unofficial and often unauthorized car races.

> *"Amateur racing was all about home-made cars competing in disused airfields. One of the first amateur racing club was called the 750 club…Members of the 750 club were everyday folk hard-up enthusiasts with a passion for building nippy-little racers on a shoe-string budget" [Len Terry, Lotus Chief Designer, in "Brits who made the modern world"—Documentary 2013]*

The spontaneous occupation of such airfields was spurred by an earlier improvised race track taking place at the Silverstone airfield in 1946 (see yellow "flag" dot in Figure 6 map 2b), which was the first formal racing event after WWII and consecrated Silverstone as an iconic place for motorsport enthusiasts. This race was made possible by the contributions of clubs members' relatives and friends, and already featured the semi-professional arrangements characterizing the serious leisure domain, such as race marshals, and organized race control center. Club members' words vividly capture their passion in organizing this event:

> *"There was nothing approaching those early days at Silverstone…These were the days when the timekeepers occupied an old bus, and race control, helped on its way by Boy Scout volunteers, was located in an old cowshed." [Desmond Scannel, British Racing Drivers Club's secretary, in Parker*

(2013).]

Silverstone airfield embodied a powerful memory for the many racing enthusiasts who originally served in the Royal Air Force during WWII and came to represent a landmark of British motorsport's renaissance after the war. More pragmatically, Silverstone's location was accessible from both London and Bristol, where the clubs were located. In fact, London and Bristol eventually became the eastern and western edges of the perimeter identifying the area where professional racing activities typically took place. Thus, starting with that improvised spontaneous race in 1946, the converted Silverstone racetrack became (and still is) a magnet for motorsport enthusiasts and professionals who developed an emotional attachment for this iconic place:

> *"All the drivers say the same: there is a special atmosphere at Silverstone that is different to a number of the other grands prix. Silverstone gives you a special feeling, it gives you goosebumps." [George Russell, Formula 1 Driver at Williams F1 team, in Richards (2019)]*

As they began to increasingly race on airfields repurposed as racetracks, club members and marques' team members started sharing their knowledge in more structured ways. For example, periodic publications proliferated, where enthusiasts shared blueprints and sketches of technological solutions to improve car safety and performance. In other words, the untraded interdependencies, which initially emerged in the casual domain, started to evolve. For example, as participants applied their technical intuitions by upgrading their stripped-down bricolage cars through '*kits'*—i.e., enhanced modular components aimed at enhancing the function of a car subsystems—the *kit car* emerged and became a central, recognizable, and specific engineering "philosophy" for the British racecar technicians:

> *"The 750 Formula came to be regarded as one of the great triumphs of British racing design, as from it evolved the philosophy of assembling a car from a selection of available components. This was a fundamental shift from a single manufacturer producing the whole car, and it can be said to be a very British trait." (Morgan 2009, p. 23)*

More importantly, knowledge started circulating as the key actors increasingly moved from one marque to another, aiming to join the organizations with greater accolades. As the racing activity transformed from improvised and secretive during the war, to public and structured afterwards, clubs established official magazines reporting the activities and facilitating knowledge sharing—for example, in 1947 the 500 Club started the printing of 'IOTA' magazine in Bristol (Source: 500 Club). Relatedly, various relatives and

friends of club members became club reporters, or official part-time marshals at events (see actors in Table A2 in the appendic).[9]

In 1947, two club members (father and son Charles and John Cooper) built twelve Cooper Mk2s cars which were privately sold for £500 each. In December 1947, they registered their activity as a 'limited company.' This was partly to protect their garage business from potential tax-evasion claims (Nye, 1983: 23). The Cooper Car Company Ltd. embodied one of the earliest and most prominent entrepreneurial ventures originating from the club activities. On October 2nd, 1948 the Silverstone Support Race at the British Grand Prix saw for the first time a club (the 500 Club) officially incorporated in a professional grand prix, which represented a formal promotion and repurposing of amateur racing activities to a semi-professional racing series. Out of the thirty-five cars at the starting grid, nine were Coopers.

> *"The Coopers decided to commercialise their venture, and again no blames attached. If they had not, some others would have; already Marwyn and IOTA were in the market with cars and parts" [Motor Sport editorial, January 1950; 500 Club archive]*

The combined effect of measuring-up to more advanced racing with the will to capture an emerging market opportunity pushed some club members to further upgrade their mechanical and driving skills to organize semi-professional racing organizations, and paved the way to early, often private sales of kit cars, thus easing the serious leisure domain into the next domain.

Business domain (since 1950)

Between the late 40s and early 50s, the initially informal rules, norms, and practices of the serious leisure domain become repurposed as official rules and guidelines for the more professional racing series, thus shaping what we term the business domain (see Figure 2). This was facilitated by two repurposing triggers.

Repurposing and its triggers

First, in 1949 the Fédération Internationale de l'Automobile (FIA)—the international body in charge of promoting and overseeing official racing competitions—decided to embrace the 500 Club's rules (with

[9] Historical reports of the Motorsport Magazine are digitized and publicly available at https://www.motorsportmagazine.com/archive/issues/all

minor modification) to create a new international Formula 3 series (Source: 500 Club). The 1945 Purchase Tax had made large sports cars too expensive for minor racing series and no car manufacturing company was willing to produce high-performing but relatively inexpensive kit cars, which were considered low-profit products. Hence, the FIA decided to adopt a regulation (and car design) that featured race cars already in use; it selected 500 Club's national rules as the "template" to build race cars of the new international Formula 3 series (see trigger c in Table 2). The 500 Club reported the news with sensational emphasis:

> *"[Title:] Biggest News of the Year, Five Hundred to be Formula Three. [Body:] Meeting in Paris earlier this month the F.I.A. decided that the 500c.c. class cars should rank and an International Formula Three for racing in 1950. (…) Thus, in one step the movement goes into the front rank of international recognition." [Official IOTA Bulletin, 1949; 500 Club archive].*

This had two main implications for 500 club members. First, it meant that club enthusiasts could re-use their car to compete in Formula 3—and in fact historical records report that 295 car types and 289 members of the 500 Club competed in Formula 3 (Source: 500 Club archives). Second, it meant that their know-how in building such kit cars could become valuable to build cars for aspiring teams and drivers who wanted to compete in Formula 3, but had no way to build their own car. Hence, with the first Formula 3 championship starting in 1950 club members and their cars became the main protagonists of an up-and-coming professional series—thus expanding their visibility beyond the amateur racing world.

This regulatory change affected the serious leisure domain by establishing an international market for technologies, creating a greater market for 500cc cars and their parts suppliers (e.g., kits) and thus establishing the conditions for scalability of early ventures and the creation of new companies. Upgrading the formerly serious leisure activities into a fully professionalized championship induced fiercer competition among the participants, which started systematically scouting and developing distinctive resources and capabilities to win races. The most successful technicians and workshops ended up in the international spotlight, demanding a full monetary compensation for labor and materials. Thus, as reported in Figure 2, the actors in the serious leisure and business domains are increasingly connected by thin black lines connoting traded interdependencies (e.g., supply and IP contracts, formal alliances and partnerships, etc.).

Competing in a fiercer, more professional, international racing series further increased the costs of motorsport, demanding more advanced research and development. In addition, races became much more

dangerous: serious accidents and fatalities were frequent but somehow accepted. Most enthusiasts were inadequate for professional racing, but reluctant to abandon their passion. Hence, they repurposed their role into something that would better suit their amateur or semi-professional skills, ambition, and needs. Business and management-related positions emerged as viable compromises, combining a primary role in motorsport with a 'normal' lifestyle (see actors of the business domain in Table A2 in the appendix) and several individuals adapted to those roles which fulfilled their passion while avoiding racing hazards. Bernie Ecclestone, often regarded as the 'F1 Supremo,' in 1949 was a 500 Club driver. Few years later he followed this very path to ultimately become the Connaught and Brabham Formula 1 teams owner, and later the chief executive of the Formula One:

> *"But if racing is dangerous in the 21st century, it was much more so in that long-lost era. After a collision with Bill Whitehouse, who was later to be killed in an F2 crash at Reims, Bernie was thrown from the cockpit and landed in the public car park. Shortly thereafter Bernie retired from race driving. (...) Bernie returned to motor racing in 1957, and at a fairly high level. He became manager of British F1 driver Stuart Lewis-Evans, and also took control of the Connaught F1 team for whom Lewis-Evans raced." (Scott 2011).*

What had originally emerged as an affordable leisure practice made in free time with scraps, basic tools, and bricolage skills, turned into an costly activity requiring major funding. An increasing number of marques repurposed into professional racing teams: full-time ventures that employed specialized professionals, and were geared towards a profit-making to guarantee sufficient resources to race and win. Selling cars, parts, or developing commercial relations with pay drivers or sponsors emerged as the most viable business solutions to sustain professional motor-racing.

A second event that favored the repurposing of the serious leisure domain into the business domain was the 1955 "Le Mans Disaster" (see trigger d in Table 2)—still today the most lethal event in motorsport—when a racing accident resulted into the death of a driver and 83 spectators, as well as 120 injuries (Hilton 2004), prompting several countries to declare a temporary ban on motorsports and lobby the international motorsport federations to move the top racing series from standard roads to closed circuits (considered safer for drivers and spectators). The new racing format favored lighter, nimbler cars, thus moving the dominant design towards kit cars already established in the British motor club scene. This further favored an increasing national and international demand for racing cars built following the British kit car design philosophy. Figure

5 shows how, particularly after 1955, the UK witnessed a steep rise of companies emerging from club racing experience (see the also green 'M' dots in Figure 6, map 1c for the localization of the companies).

As the close-circuit format became dominant internationally, British racing teams like Cooper and Lotus—which had perfected their design and production of close-circuit kit cars—joined Formula 1, the top motorsport series, by pioneering small, lightweight vehicles against big, heavy cars such as those produced by continental companies such as Alfa Romeo, Ferrari, and Maserati (Jenkins and Tallman 2015). Many others followed their lead. The ultimate consecration of the amateur-born British motorsport as a world-leading industry arrived in 1959 when Cooper won both the Constructor and Driver Formula 1 championship, followed by Lotus domination of these championships in the 60s and 70s. As the cars built with the kit car philosophy became the dominant design in major closed-circuit racing series, other international motorsport firms started to frequently visit, or even permanently moved their facilities to the BMV, which emerged as the source of the best know-how to design and manufacture close-circuit racing cars.

Localizing passion and untraded interdependencies

Starting with the 1950s, many club enthusiasts followed Cooper's early example and established their own car or component companies such as Colin Chapman's Lotus Engineering Ltd (est. 1952), which soon became an iconic British manufacturer, employing more than 570 people by 1967 (Lawrence, 2003: 160):

> *"The lasting impression gained from a visit to the Lotus works[shops] is that no other British manufacturer – on any scale – plans such a comprehensive range of models for 1958. Nowhere outside Italy, in fact, is there currently a concern making vehicles for Formula One, Formula Two and various sports categories in addition to a most inexpensive road sports car…. That so much can be accomplished in such cramped quarters verges on the miraculous." [Sports car & Lotus Owner magazine, 1958]*

Historical records and primary interviews show that the founding of Lotus and other early motorsport commercial firms were deeply rooted in the passion of clubs' enthusiasts who originally volunteered their time to support the initial commercial ventures:

> *"It ought be emphasized that Colin Chapman started with little capital. He and the enthusiastic band of volunteers had to essentially improvise, innovate and extrapolate every inch of the way. He [Colin Chapman] was fortunate to meet the Allen brothers and Hazel Williams amongst others locally, who*

> *contributed so much [skills, finance, and ideas] and to have access to the 750 Motor Club, and the many amateur-driving opportunities like trials" [Colin Chapman Museum archival document]*.

In other words, the localizing passion underlying the formation of untraded interdependencies in the earlier stages of the cluster genesis was instrumental in the founding of the first commercial enterprises at the center of the cluster. Indeed, historical records show that the untraded interdependencies emerged in the casual and serious leisure domains persisted even when the business domain had formed. For example, two Lotus co-founders Colin Chapman and Derek Jolly, even after establishing a successful motorsport company such as Lotus, preferred to "steal" and use scrapyard components because it was more "fun":

> *"As it was, Derek recalled that Colin would visit a scrapyard by day, identify something he wanted and then they would make a raid at night. Derek could have bought the entire scrapyard, but that wasn't as much fun."(Lawrence, 2003, p. 28)*

In addition, as highlighted in the maps, the emerging business activities—founding of specialized manufacturers, suppliers, and service providers—became increasingly concentrated in areas loaded with emotional value: originally populated by countryside roads hosting (illegal) hill climbs and amateur races at the beginning of the 20th century, these lands were then occupied by military bases and airfields where many enthusiasts had served during WWII, and were ultimately repurposed into racetracks nurturing the post-war renaissance of British racing (see locations in Figure 6, map 1c). The premises of these business organizations were located in areas where the circuits were conveniently accessible—e.g., Lotus in Hornsey, North London and Cooper in Surbiton, West London (see aforementioned map). These were not anonymous spaces, but had become familiar places characterized by the presence of localizing passion.

With the start of Formula 3 and the participation of some British teams to the prestigious Formula 1 series (see Marino et al. 2015), British motorsport production quickly grew in terms of number of organizations, production scale, and international scope. Part of British motorsport moved from what was a mere forum for semi-professional drivers, to a professionalized business, a technology-and-engineering-driven concentration of activities, with specialized organizations and a structured supply chain geographically clustered in a crescent shape area between Bristol and London, covering areas to the north, west and south of London (see locations in Figure 6, map 1c).

> *"The boys who started out with no money, making home-made racing cars in lockup garages laid the foundations for a British industry that is today worth 5 Billion pounds a year". [Peter Snow In "Brits*

who made the modern world" – Documentary 2013]

From the mid-50s, the BMV has received growing international recognition as the focal area for manufacturing cutting-edge cars and related technologies. A local and diverse population of organizations (car manufacturers, part suppliers, technology specialists, service providers, sport driving schools, racetracks), industry and sport bodies (motorsport associations, industry associations, clubs), as well as institutions focused on specialized research and education (research centers, academies and schools, universities), developed knowledge and resources well-suited to pioneer such technological solutions. The focus of the companies moved from an "affordable" low-end segment to a "high-end segment." The BMV cluster grew in size and expanded geographically to a broader area, thus including the few formerly niche, high-end motorsport firms which were located in the northern area around Birmingham and Coventry (in Figure 6 see the blue 'M' dots in map 2b coded as green 'M' dots in map 1c). This transition towards a high-tech and high-end segment also progressively attracted major international automotive manufacturers (e.g., Ford, Honda, Mercedes, Renault, Ferrari) or other companies (Red Bull from Austria, Haas from the United States) which decided to co-locate manufacturing facilities in the BMV in order to access the know-how necessary to build advanced race cars to compete in the major motorsport series. In the following decades, the globalization of Formula 1, Formula 3 and other major racing series further contributed to the development of the BMV cluster, following a more traditional cluster development path that has already been extensively theorized. For example, starting from the mid-90s, key institutions—such as the Motorsport Industry Association and cluster-specific government policies—emerged in support of the development of the cluster. Importantly, as outlined in Figure 2, besides the industrial activities in the business domain, club racing and the semi-professional racing within the two leisure domains are still vibrant in the BMV today. Indeed, the Motorsport UK association currently comprises 750 affiliated motor clubs, about 30,000 competition license holders, and 9,500 volunteer marshals and officials, hosting about 5,000 motor sport events every year. Both the 500 Club and the 750 Club still exist and are active generators of activities creating new drivers, technicians, and entrepreneurs.

Today, club racing series (casual leisure), semi-professional series (serious leisure), and professional

series (business) are mutually intertwined and both traded and untraded interdependencies continuously happen across domains (hence the black and white lines connecting the actors across domains in Figure 2). In professionalized domains such as business, traded interdependencies predominate; in contrast, untraded interdependencies still characterize more amateur activities (in Figure 2 see black and white thin lines, respectively). For example, members of the clubs and minor series buy technologies and services for their racing activities from companies in the BMV cluster. They are also the paying audience at the races and the motorsport events (e.g., car shows, tradeshows, festivals) where professional and semi-professional organizations take part. The passion nurtured in the leisure domains feeds managerial, technical, and driving talent in the business domain, additionally, it offers the opportunity for racing as a leisure activity to passionate motorsport professionals who decide to retire or leave the business domain. Indeed, passion still characterizes these activities clustered in the lands of the BMV, starting with the iconic Silverstone circuit.

> *"Overlooking the revered Copse, Maggots & Becketts corners [names of turns in the Silverstone racetrack] (...) offers individuals the chance to be fully integrated in the breadth of Silverstone's automotive culture and to share in the passion and excitement of this profoundly special place." [Source, Escapade Silverstone website 2020]*

> *"[Title:] The chaos and the passion—it can only be Silverstone and Formula One (…) At least one thing is a constant when Formula One comes to town here [Silverstone]: the passion from the fans." (Source: Bailey, 2012)*

Together with internal agglomeration economies, these emotional aspects not only contribute to outweigh the centrifugal forces of delocalization, but also induce a wide range of foreign motorsport companies to increasingly co-locate their activities in the British cluster:

> *"The UK has undoubtedly been obsessed by a collective passion for racing and speed for over one-hundred years…..Whether this is a passion for motor racing, competition, or speed is hard to define, but the spirit that underpins this is undoubtedly the reason that Motorsport Valley has become the global cluster it is today." [Chris Aylett, CEO, Motorsport Industry Association—Interview 2019]*

DISCUSSION

The empirical evidence reported in the section above supports our process model (see Figure 2) that unpacks the "primordial soup" of cluster genesis as a mix of both micro-level (actors, artefacts, activities) and macro-level (external agglomeration economies, traded and untraded interdependencies, domain repurposing triggers) antecedents, interacting through two key micro-level mechanisms: localizing passion and domain repurposing. While some of the antecedents in our model have to an extent been surfaced by

previous research, the mechanisms through which they interact are new. In fact, it is in the identification of such mechanisms that provides our core theoretical contribution, as we discuss in this section.

In our model, cluster genesis originates with the emergence of a 'casual leisure domain' where non-professional actors such as part-time hobbyists interact around playful activities in specific spaces (e.g., hobbyist clubs). In doing so, they start developing a shared emotional energy—i.e., localizing passion—binding them to those spaces, and nurturing the development of informal rules, conventions, and knowledge-sharing practices (i.e., untraded interdependencies). Hobbyists' activities are enabled by the presence of related industries providing key advantages—i.e. external agglomeration economies— resulting from locating activities in proximity to such industries, such as access to key inputs (e.g., materials, artefacts, skills, people). While the contribution of related industries is significant in the early stages of cluster genesis, its influence decreases as the other two domains (serious leisure and business) emerge through domain repurposing.

Aided by events increasing the salience and appeal of new purposes (i.e., domain repurposing triggers), casual leisure activities becomes repurposed into serious leisure activities, which demand some initial monetary payments for the exchange of technology and labor. In turn, serious leisure activities also become repurposed into business activities, where formal contracts and economic purposes become predominant. Thus, domain repurposing is the mechanism underlying the transformation of initially playful, non-monetary activities into commercially-oriented production activities, thus explaining the emergence of the industry at the core of the cluster. As new domains emerge, the changing nature of activities and their purposes is accompanied by changes in actors' relationships, from informal untraded interdependencies to increasingly formal and transaction-oriented, traded interdependencies. However, the three domains and their activities coexist as distinct, rather than substituting each other, allowing mutually-reinforcing exchanges across domains (see the vertical linkages of traded and untraded interdependencies in Figure 2). Crucially, localizing passion persists as new domains emerge, extending the localization effect of such place-specific shared emotional energy to new types of actors such as semi-professional hobbyists, managers, and entrepreneurs. Thus, localizing passion is the key mechanism that sustains the emotional attachment of

different actors to the same geographical areas, thus anchoring the cluster's industrial activities to the specific location of the cluster. Our process model makes several theoretical contributions that we discuss and elaborate below.

Localizing passion as sticky catalyst: The emotional microfoundations of cluster genesis

Our first contribution is to highlight the role of emotions in cluster genesis by identifying localizing passion as a powerful "sticky catalyst" (cf. Furnari 2014). While previous research has emphasized the cognitive, knowledge-based components of clusters (Markusen 1996; Tallman et al. 2004), we emphasize the hitherto under-studied *emotional* drivers of cluster genesis. Specifically, we point at localizing passion as one of the mechanisms underlying the development of untraded interdependencies. Not only does localizing passion provide the initial impetus for different people to jointly interact around non-remunerated activities, but it also makes those people emotionally attached to the particular locations where they carry out such activities, turning spaces into places—i.e., where places are spaces imbued with special meanings and values in the eyes of some social group (Gieryn 2000; Massey 1995). Thus, we claim that localizing passion constitutes an important *emotional microfoundation* of clusters: the emotions shared among actors during a cluster's incubation play a key, yet under-studied, role for its genesis. In fact, the role of emotions in facilitating localization and people's "stickiness" to certain geographical locations has been highlighted by two distinct literatures, respectively: (1) the social movements literature[10] on emotions and collective action (e.g., Goodwin et al. 2001; Jasper 2011); (2) the social geography literature on emotions and places (e.g., Cresswell 2004; Gieryn 2000). Our findings speak to and extend the insights of both these literatures, which have remained so far disconnected from the cluster literature.

The social movement literature has argued that emotions are key "conduits of collective action and mobilization" (Zietsma et al. 2019, p. 15-16) and contribute to the formation of a collective identity allowing movements' members to persist despite adversity and high risk (Goodwin et al. 2001). Importantly, while

[10] Given the emerging connection between our inductive findings and theories of social movements, we considered whether the community of motorsport enthusiasts that we studied could be conceived as a social movement. However, such community lacked some of the defining features of a social movement, commonly conceptualized as an "collective organized localizing challenging institutional authority" (Snow et al. 2004, p. 9). Indeed, the goal of motorsport enthusiasts was *not* to challenge institutional authority and their level of organization was also minimal in the early stages of cluster emergence.

psychological research tends to view emotions as short-term and fleeting, social movement scholars have instead focused on longer term and more lasting emotional states, such as affective loyalties within a community (Jasper 2011), such as the long-lasting affections that have linked motorsport enthusiasts to the places of BMV to this day.

Such long-lasting emotions tying people to places have also been highlighted by social geography research, which has traditionally distinguished the notion of "space"—i.e., a location identified by specific geographical coordinates—from that of "place"—i.e., the meanings and values assigned to a space and the material forms (e.g., artefacts, architecture) populating such space (cf. Lawrence and Dover 2015). Research in social geography (Massey 1995; Tuan 1977) has highlighted the emotional, cultural, and political significance of places in the lives of individuals, organizations and communities (see Cresswell 2004, for a review). Place is more than physical geography: a geographical location may become a place in the eyes of a specific social group through mechanisms that imbue that location with memories, meanings, and values. Our work underscores localizing passion as one such mechanism, showing that the shared emotional energy created through actors' joint engagement with playful activities is one key way by which people can become attached to spaces, eventually electing them as their locations of choice for founding new businesses.

While both the social movement and social geography literatures have demonstrated that emotions play a key role in shaping localizing aggregation dynamics at different levels of analysis (movement, community, organization), research on industrial agglomerations (i.e., clusters) has so far under-studied the localizing emotional dynamics that may underlie cluster formation. Indeed, as Öhman and Simonsen (2018, p. 3) have recently argued: "emotions and feelings….have rarely been at the centre of geographical observation," so that the role of emotions in "contributing to the production of space" has been under-studied. Our paper is a first attempt at surfacing these important emotional aspects of cluster genesis and the identification of localizing passion as a sticky catalyst opens new areas for future research.

For example, by identifying localizing passion as key mechanism of cluster genesis, our work connects with research on passion and entrepreneurship. Scholars have long explored the important role of motivations, emotions, and affect in driving individuals to undertake entrepreneurial ventures and support

industry formation activities (Croidieu and Kim 2018; Agarwal et al. 2017; Shane et al. 2003). This has originally emerged as an individual trait of the founder (Cardon et al. 2009 2012; 2013) and more recently it has been conceptualized as a team level attribute (Cardon et al. 2017). Our construct of localizing passion is instead conceptualized at the *collective* level, and refers to a broader group of individuals who are not necessarily part of a team. They might actually be engaged in fierce competitions, but they still remain connected in a broader social group which shares a collective identity (e.g., Howard-Grenville et al., 2013). Localizing passion can therefore be found where practices are strongly associated with specific geographical areas, for example surfing in California, Hawaii or the Australian Gold Coast, or outdoor activities in Colorado and other spots along the Rocky Mountains. The spatial localization of passion also relates to the traditional resilience of cluster-based organizations across time, and the typical "stickiness" of actors to specific geographic areas even in the absence of clear economic incentives, such as convenient labor costs and supportive institutional conditions (Jenkins and Tallman 2015; Markusen 1996).

Unpacking the "black box" of untraded interdependencies and their complementarity with agglomeration economies

Our second contribution to the cluster genesis literature is to explain how untraded interdependencies—a core antecedent of cluster formation identified by previous research (e.g., Storper 1993; 1995; Feldman and Storper 2018)—emerge. Specifically, we focus on the early stages of cluster genesis and show that untraded interdependencies emerge through place-based social interactions, sustained and anchored to a specific area by localizing passion. Such micro-level, emotionally-charged interactions support the development of the informal rules, norms, and knowledge sharing practices constituting untraded interdependencies.

Relatedly, we show how untraded interdependencies complement two types of agglomeration economies, respectively external and internal to the cluster, at different stages of cluster genesis. Specifically, we show that untraded interdependencies are complementary to *external* agglomeration economies in the initial stages of cluster genesis, insofar as related industries in the region provide inputs and resources to support and sustain non-monetary casual leisure activities, which can in turn facilitate the emergence of informal rules, norms, and practices of knowledge sharing. This is particularly important in the early stages of cluster genesis when no commercial transactions exist. However, as the purpose of activities

evolve from leisure to business, the complementarity between external agglomeration economies and untraded interdependencies decreases in its importance because the tacit, sticky knowledge generated through such interdependencies becomes increasingly specialized. This requires the production of dedicated resources and inputs, which are better sourced inside the cluster and ultimately necessitate formal transaction-based contracts. In our model, this corresponds to the emergence of traded interdependencies and economic transactions *within* the cluster, which leads to the *internal* agglomeration economies highlighted by previous research (e.g., Duranton and Puga 2004; Feldman 1999). Importantly, internal agglomeration economies are complemented by untraded interdependencies that facilitate economic exchanges and the technological developments at the center of such exchanges. In other words, the complementarity between external agglomeration economies and untraded interdependencies gets progressively replaced by the complementarity between internal agglomeration economies and untraded interdependencies. As noted, internal agglomeration economies have been extensively studied—including in our very own setting, see Pinch and Henry (1999a). We thus focused on the earlier processes underlying the cluster genesis and the complementarities between untraded interdependencies and external agglomeration economies.

In sum, like Storper (1995), we do not deny the importance of traded input-output relations and agglomeration economies (Feldman 2000; Krugman 1991). Rather, we suggest that, before commercial activities even exist, untraded interdependencies temporally precede and then work in conjunction with the agglomeration economies internal to a cluster, which emerge at a later stage as the cluster takes shape and formal transactions increase. More precisely, we highlight that untraded interdependencies interact with agglomeration economies in different ways depending on the sources of such economies (internal vs. external) and the stages of cluster development. While extant cluster literature has typically focused on agglomeration economies *internal* to an industrial cluster, we echo industry studies in highlighting the importance of related industries (Helfat and Raubitschek, 2000; Klepper, 2002; 2010; Moeen and Mitchell, 2020) and related inter-industry linkages (Furnari, 2016).

Taken together, our paper contributes to unpack the “black box” of untraded interdependencies and their complementarities with internal and external agglomeration economies. Untraded interdependences represent

a key concept in the cluster literature, which has however remained under-theorized and under-explored in empirical terms. This is perhaps because such investigation requires the exploration of the genesis phase that precedes product commercialization—a period typically characterized by very limited data. Indeed, discussing informal conventions as a key component of untraded interdependencies, Storper and Salais (1997, p. 18) argue that "the micro-analytics of the emergence and evolution of conventions is one of the most challenging and complex areas [of research]," calling for more research on this crucial problem. Similarly, Feldman and Storper (2018, p. 154) argued that a fundamental task of place-based development is nurturing "the key untraded interdependencies of a dynamic regional economy." Our paper responds to these calls by showing the crucial importance of people's micro-interactions and emotional attachment to geographical areas in the emergence and evolution of untraded interdependencies.

Future research may further study the "pre-history" (Furnari 2014), or the very initial moments of cluster emergence, focusing on when and how different types of untraded and traded interdependencies emerge in the first place (Heidenreich 2008). Such a focus on pre-history may allow the further specification of other primordial processes and mechanisms, allowing to compare multiple cases under different historical contingencies and "branching points" (Engler et al. 2020).

Domain repurposing and its triggers: Implications for industry emergence studies

We contribute to the literature on industry emergence (Agarwal et al. 2017; Furr 2019; Grodal et al. 2019; Moeen and Agarwal 2017) by identifying domain repurposing as an important mechanism for industry emergence. Recent conceptual studies have underscored a variety of "actors, actions and triggers" as key "ingredients" of industry emergence, lamenting the scarcity of empirical studies that examine how these factors interact before the first product commercialization (Agarwal et al. 2017). We build and expand on these insights not only by empirically examining the ingredients of industry emergence, but also by identifying a specific micro-level mechanism underlying their interactions—i.e., domain repurposing—as well as the triggers that can activate this mechanism.

Domain repurposing operates by shifting configurations of actors, activities, and artefacts towards a new purpose, thus originating a new domain of activities. Such a mechanism speaks to cognate evolutionary ideas

such as pre-adaptation—i.e., knowledge accumulated without anticipation of later use (Cattani 2005, 2006)—and exaptation—i.e., the co-optation of a feature for its present role from some other origin (Andriani and Cattani 2016)—which have been used to explain the emergence of new technologies (Cattani 2006), markets (Dew et al. 2004), and artefacts (Andriani and Cattani, 2016). While our notion of domain repurposing is different from exaptation—as it involves the shift of an entire domain including its actors, activities, and artefacts—our findings prompt questions about the linkages and interplay between these related mechanisms, which may potentially play complementary roles in the industry emergence.

Further, while extant studies have mostly theorized *incubating* triggers occurring at the very beginning of industry emergence and prompting industry incubation—such as, scientific discoveries (Moeen and Agarwal 2017), unmet user needs (Shah and Tripsas 2007) and grand challenges (Mowery 2010)—we focus on *repurposing* triggers. Differently from incubating triggers that operate by inducing actors to innovate and experiment, *repurposing triggers* work by changing the saliency and appeal of a new purpose in the actors' eyes, inducing them to shift their activities and artefacts towards the new purpose. Specifically, as highlighted in our findings (see also Table 2), we found that exogenous shocks can serve as repurposing triggers in two ways: 1) by creating or increasing the slack of resources (e.g., skills, artefacts, locations) that are left unused, thus making more resources available for repurposing (*supply-side repurposing trigger*); 2) by creating or increasing the commercial demand for an artefact devised for non-commercial use (*demand-side repurposing trigger*). By identifying (demand-side and supply-side) repurposing triggers, we follow the call for more research to "uncover other important triggers [of industry emergence]…drawing on novel and heterogeneous industry contexts" (Agarwal et al. 2017, p. 298). Our concepts of repurposing triggers and domain repurposing can be useful for further investigating the ways in which users and amateurs can embrace business purposes, for example analyzing how shifts in dominant design (Anderson and Tushman 1990) or dominant categories (Grodal et al. 2015) in an emerging industry can hinder or facilitate the repurposing of products and technologies initially devised for non-commercial aims.

Boundary conditions and limitations

We identify two boundary conditions to transfer our mechanisms and process model to other settings:

(i) the presence of an emotional attachment to an activity, technology, or product; (ii) the presence of related industries surrounding the activity/technology/product. First, several ventures and industries are initially driven by an emotional attachment to an activity, a technology, or a product (Cardon 2009). Yet, some industries may instead emerge to purely capture economic opportunities or resolve market inefficiencies. Scholars tend to associate "passion" to user-driven and leisure industries, and recent studies report that the 26% of nascent entrepreneurs in the U.S. ascribe the birth of their business from a hobby (Source: Panel Study of Entrepreneurial Dynamics II, University of Michigan).[11] In addition, many other contexts, such as a variety of creative industries, have been characterized by a "labor of love" (cf. Croidieu and Kim, 2018), making our findings and model transferable to broad set of organizations and industries with such features. Second, a boundary condition of our model is the presence of related industries around the core activity, technology, or product around which the industrial cluster develops. As we showed, related industries are instrumental in providing access to key inputs and resources (e.g., people, knowledge, materials) that are needed to carry out amateur activities in absence of monetary incentives. Previous research on industry emergence has highlighted that new industries often emerge from pre-existing related industries (Helfat and Raubitschek, 2000; Klepper, 2002; 2010; Moeen and Mitchell, 2020; Powell and Sandholtz, 2012), thus making our model transferable across contexts within the limits of this boundary condition.

As with any study, our work also presents some limitations. For example, one could further question the role of agency (Beckert 1999), that is, whether domain repurposing can be actively leveraged to design and control the metamorphosis of leisure activities into businesses. We echo relevant literature in claiming that one cannot ignore the role of chance (Klepper 2002; Dew 2009), and accidents (Shah and Tripsas 2007) as important triggers. Thus, we refrain from highlighting agency and control in these complex processes, and suggest that a more nuanced understanding of underlying mechanisms—such as those illustrated here—can help identify enabling conditions, dominant dynamics, and perhaps facilitate cluster genesis by removing obstacles or creating conditions supporting the interaction among generative elements. Historical data are subject to limited availability. We believe future studies should overcome these limitations by leveraging

[11] Source: http://www.psed.isr.umich.edu/psed/home

other methodologies and data, which can perhaps better consider the role of agency and causality. All in all, limitations are to a certain extent unavoidable given our research design, but we argue that our process model of cluster genesis is transferrable to different settings within the boundary conditions highlighted above.

CONCLUSION

To conclude, we note that advancing our understanding of cluster genesis rests on our ability to combine deep immersion in historical cases with the rigorous theorizing necessary to meaningfully interpret such cases. Our understanding of this important yet complex phenomenon is far from being complete, but we hope our endeavor will stimulate more research into the antecedents and mechanisms of cluster genesis.

TABLE 1
Data Sources

Type of data	Sources	Number of documents
Published secondary sources	History books	7
	Industry reports on the British Motor Valley	6
	Books and publications on the clubs and their history	2
	Webpages and articles	39
	Total	**59**
Archival secondary sources	Bristol Motor Club archive - digital repository: bristolmc.org.uk	122
	500cc Owners Association archive - digital repository: 500race.org	133
	Austin 7 Hampshire Archive and Records Office	301
	Motorsport Magazine archive - digital repository: motorsportmagazine.com	360
	University of Derby motorsport library	121
	Total	**1,036**
Interviews	Motorsport historians/journalists	3
	Professional drives who participated at the time	1
	Clubs/associations officials/presidents	2
	Club members and motorsport enthusiasts	17
	Total	**23**
Quantitative data	*Database of organizations (number)* *Geographical database (location points)*	**216** **357**
Videos	Documentaries	14

TABLE 2
Repurposing Triggers

Trigger	**a. End of World War II**	**b. Purchase Tax in the UK**	**c. Formula 3 adopts 500 Club Rules**	**d. Le Mans Disaster**
Year(s)	1945	1945	1950	1955
Description	World conflict equipping former veterans with skills and materials for racing.	Tax of 66.33% on sports and luxury cars opening a market for kit cars in minor races.	The FIA adopts of a British club's car design to start a new international racing series (Formula 3) in 1950.	Major race accident which shifts top series to circuit racing, thus making the British kit car design the dominant product for top racing categories.
Type of repurposing trigger	*Supply-side* repurposing trigger (i.e. event creates slack of talent and other resources that are left unused, making more resources available for repurposing)	*Demand-side* repurposing trigger (i.e. event increases the commercial demand for kit cars initially devised for casual and serious leisure purposes)	*Demand-side* repurposing trigger (i.e. event increases the commercial demand for kit cars by making them the dominant design at the international level)	*Demand-side* repurposing trigger (i.e. event increases the commercial demand for kit cars by making them the dominant design)
Source and target domain of repurposing	From Casual Leisure to Serious Leisure		From Serious Leisure to Business	

TABLE 3
Illustrative Quotes by First-Order Codes

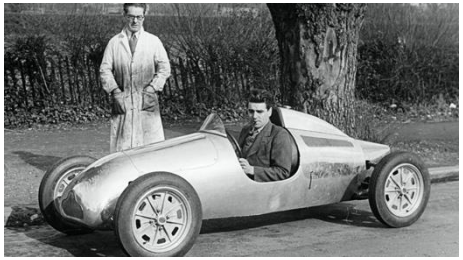
First-order codes	Illustrative quotes
1. *Repurposing of artefacts for increasingly specialized business/engineering activities*	"Someone, sometime will write a book about Austin 7s and the conversion of Austin and Fords into Specials." (Peck 1960)
	"The chassis jig was an old iron bedstead to which we clamped the chassis tubes with 'G' clamps." (Crombac 2001, p. 45)
2. *Repurposing of artefacts for increasingly specialized racing activities*	"These were the days when the timekeepers occupied an old bus, and race control, helped on its way by Boy Scout volunteers, was located in an old cowshed." (Desmond Scannel, British Racing Drivers' Club secretary in Parker (2013))
	"An ancient horsebox was converted to carry the Moss' Cooper towed behind the equally aged family Rolls-Royce." (Nye 1983, p.26).
3. *Repurposing of technologies for increasingly specialized racing activities*	"The 750 Formula came to be regarded as one of the great triumphs of British racing design, as from it evolved the philosophy of assembling a car from a selection of available components. This was a fundamental shift from a single manufacturer producing the whole car, and it can be said to be a very British trait (…)" (Morgan 2009, p. 23).
	"When , in 1953, de Havilland aerodynamicist, Frank Costin, was designing his first car body, for the fast and light Lotus Mk VIII, and knowing that the car may get out of shape on very fast bends, he designed it with big tail fins to be self-correcting in yaw, just like the DH Comet or any other aircraft he was working on.' Bill Boddy in Morgan (2009, p.11)
4. *Repurposing of executives for increasingly specialized racing activities*	"But if racing is dangerous in the 21st century, it was much more so in that long-lost era. After a collision with Bill Whitehouse, who was later to be killed in an F2 crash at Reims, Bernie was thrown from the cockpit and landed in the public car park. Shortly thereafter Bernie retired from race driving. (…) Bernie returned to motor racing in 1957, and at a fairly high level. He became manager of British F1 driver Stuart Lewis-Evans, and also took control of the Connaught F1 team for whom Lewis-Evans raced." (Scott 2011)
	"Chapman (…) was also a businessman who introduced major advertising sponsorship into auto racing; beginning the process which transformed Formula 1 from a pastime of rich gentlemen to a multi-million pound high technology enterprise." (Scuderia Ferrari Club 2017)

5. *Repurposing of engineers and mechanics for increasingly specialized racing activities*	"Those who, whilst in service, had learned new skills in handling machineries eagerly sought out similarly minded individuals, and this led to an explosion in motor club numbers in the late 1940s and early 1950s." (Morgan 2009, p. 22) "I went to work there [Cooper] as fitter, then a store keeper, chaser, van-driver, general dogsbody, and part-time draughtsman when they wanted something drawn." Cooper designer Owen Maddocks on his progression at Cooper, quoted in Nye (1983, p.32)
6. *Repurposing of media specialists for increasingly specialized racing activities*	"I had always been a keen follower of motor racing and had successfully landed myself the position of Continental Correspondent for Autosport when it first launched in August 1950." (Crombac 2001, p. 35) "I was the manager of a bookshop in New Bridge Street in London. The shop's specialty was books and magazines on cars and motor racing, at the weekends I was taking a mobile version of this shop to club race meetings." Motorsport publisher Patrick Stephens, quoted in (Crombac 2001, p. 35)
7. *Repurposing of drivers for increasingly specialized racing activities*	"Ken Wharton, who was then British Hill Climb champion, came to do some testing as he was to join the party [drive] at Monza [Italian Grand Prix]." (Rudd, 1993, p. 62) "I took the car over to Italy, to Lake Garda, and of course the Italians came out and laughed at this thing...it was a great little circuit and I managed to win the class outright and third overall for cars up to two litres and so that's really how things started." Stirling Moss, (club driver, in his first international experience as semi-professional driver; Interview).
8. *Localized risk-taking attitude*	"No one denied that the motor car marked the beginning of a new age of personal freedom, but the divergence of opinion was over the conventions and constraints of use, and the framing of necessary legislation. (…) Present from the beginning, images of the police being more concerned with catching motorists than burglars (…) had by the 1920 reached epic proportions." (Jeremiah 1997, p. 3-4) "This flexible mount looked promising in clandestine trails on the Kingston Bypass." (Nye 1983, p. 18)
9. *Localized practices*	"Both before and after the 1914-18 war, speed trials and speed hill-climbs were a popular form of competition motoring in England. Racing over public roads has never been permitted in this country (…) But, although illegal, sprint contests were held nearly every summer week-end in England, the majority of them over unclosed public roads." (Brunell 1955, p. 171)

	"The end of the Second World War had left Britain with no major race track but an abundance of airfields. One of these surplus airfields was located outside the village of Silverstone and being roughly in the middle of England was seen as an ideal location to bring back international motor racing to Britain." (Source: Silverstone Racetrack)
10. Localized emotional associations to the places	"All the drivers say the same: there is a special atmosphere at Silverstone that is different to a number of the other grands prix. Silverstone gives you a special feeling, it gives you goosebumps." (George Russell, Formula 1 Driver at Williams F1 team, in Richards (2019))
	"It's always great being at Silverstone, because it feels like home. For me, and for many others, it has a sentimental magic that is unmatched by other racetracks around the globe." (Geoff Simmonds, Race Team Coordinator at Renault F1 team in Pickup (2017))
11. Localized shared narratives	"We arrived about 11am, dismounted the cars, started them and prepared to do a few practice laps. Before long a large chap riding a bicycle came up to us, panting somewhat, and demanded to know what we were doing. We gave the obvious explanation, emphasising that we had the farmer's permission to be there. He countered that the airfield still belonged to the Ministry. He was the caretaker and the farmer had no right to give us permission to be there; we must leave at once." An account of the 500 club trip to Silverstone in October 1946 from Keith Gough (http://500race.org/from-acorns-to-oak-trees/ accessed 28 July 2020)
	"Word was getting round about the goings-on behind the Railway Hotel in Tottenham Lane, what with strange people turning up in odd-looking cars, the noise they made, and the disturbance from cars being driven around the 'test track' of local suburban roads." (Crombac 2001, p. 45-46).
12. Localized rituals	"He (Holly Birkett) had a passion to understand fundamental engineering principles, particularly about tyres, handling, steering geometry, and suspension (…) It became my job to absorb and translate this to the brainstorming group which was normally in session around the dining table at Pondtail Road. Holly felt an educational mission to convey all this to 750 members through its Bulletins, and through the monthly meetings like the Red Cow at Hammersmith (…) In this way the Club rapidly became the meeting place and forging ground for an entirely new element in motor sport—young engineers with bright ideas but little money." (Charles Bulmer 750 Club member, Interview, 2009)
	"I went with them to some 750 Motor Club pub meetings - they called them noggin-and-natters [a drink and a talk] and one of the people I met was Colin Chapman." (Mike Costin, Motorsport February 2012, p. 97).

13. Local in-group vs. non-local outgroup identity formation	"If you were stuck for something—a spark plug or something else on the car—you'd walk along and a guy would say, 'Can I help you?' And you'd help each other out to make sure you were all on the start line. Sharing plugs and everything. No charge, just 'Pay me back next time or do me a favour' That's how it was—a very good atmosphere. It was a good sport." (Norman Davis, originally 500 Club member and later Jaguar test driver, in Parker (2013))
	"The intention was to allow as many people to race as possible, and although specifying that the Austin Seven chassis side members, rear axle and engine crankcase and block had to be used, there was freedom in other areas, both to allow existing modified cars to compete and to encourage development of ideas" (Morgan 2009, p. 23)

TABLE 4
Examples of Key Artefacts (Car) Across Domains

Vehicle type	**Bricolage Car**	**Kit Car**	**Professional Race Car**
Domain	Casual Leisure	Serious Leisure	Business
Exemplar model	Salome, the Joystick Special	Cooper Mk II	Lotus Mk 11
Year	1928	1949	1956
			
Main Components			
Chassis	Modified to a four-wheel configuration from a Morgan three wheeler*	Cooper	Progress Chassis Co. spaceframe; aluminum body by Williams and Pritchard
Engine	JAP Motorcycle*; Bowden carburetor*	JAP Motorcycle*	Coventry Climax FWA
Suspension/Wheels	Grand National components.* Morgan wheels.*	Cooper	Lotus
Gearbox	Unknown	Triumph Motorcycle*	BMC A30 4 speed
Brakes	Unknown	Cooper drum brakes	Girling disk brakes
Aerodynamics	n.a.	n.a.	Frank Costin

Note: *Components from related industries.

FIGURE 1

Data structure and codes: Domain Repurposing and Localizing Passion

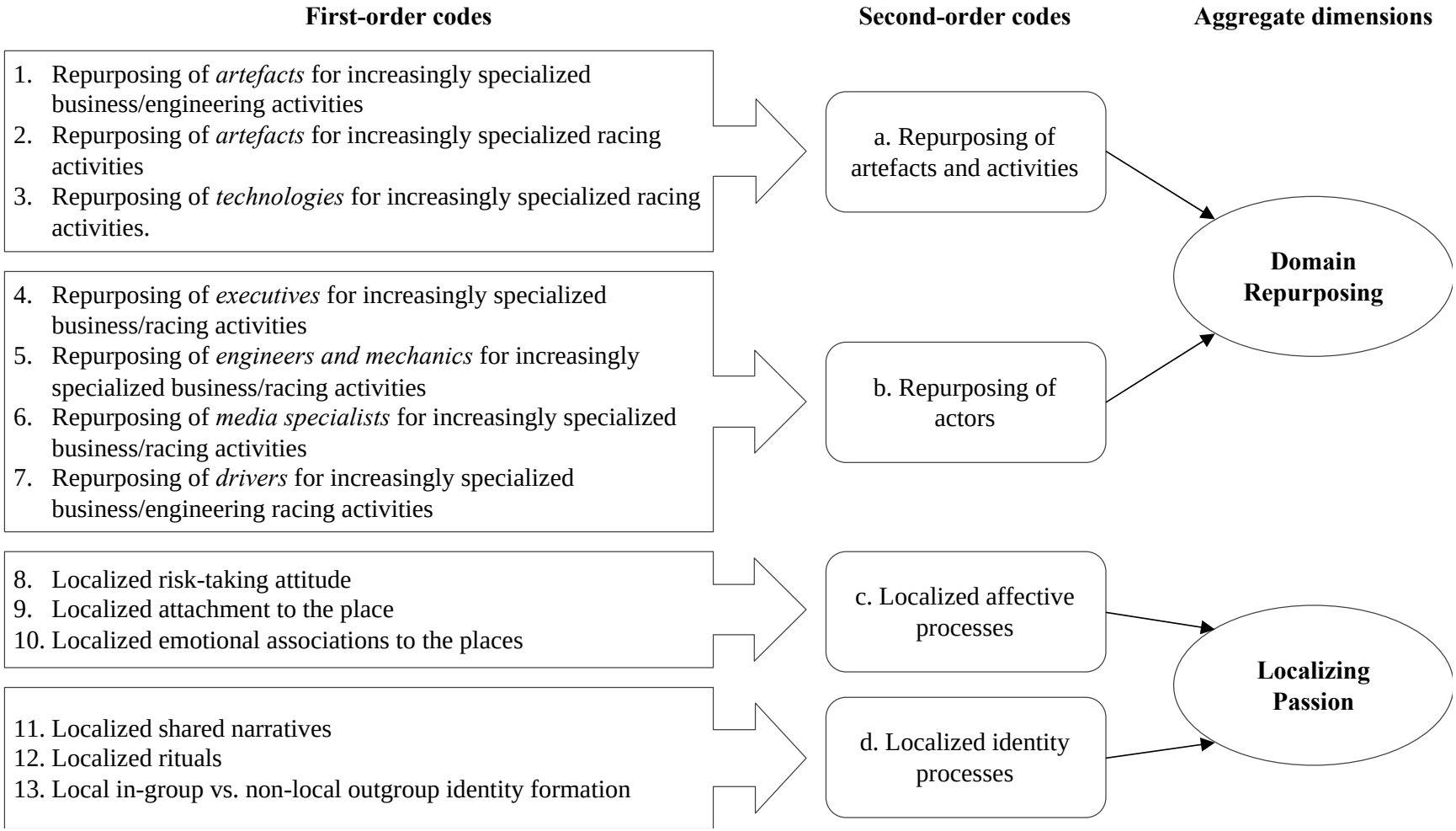
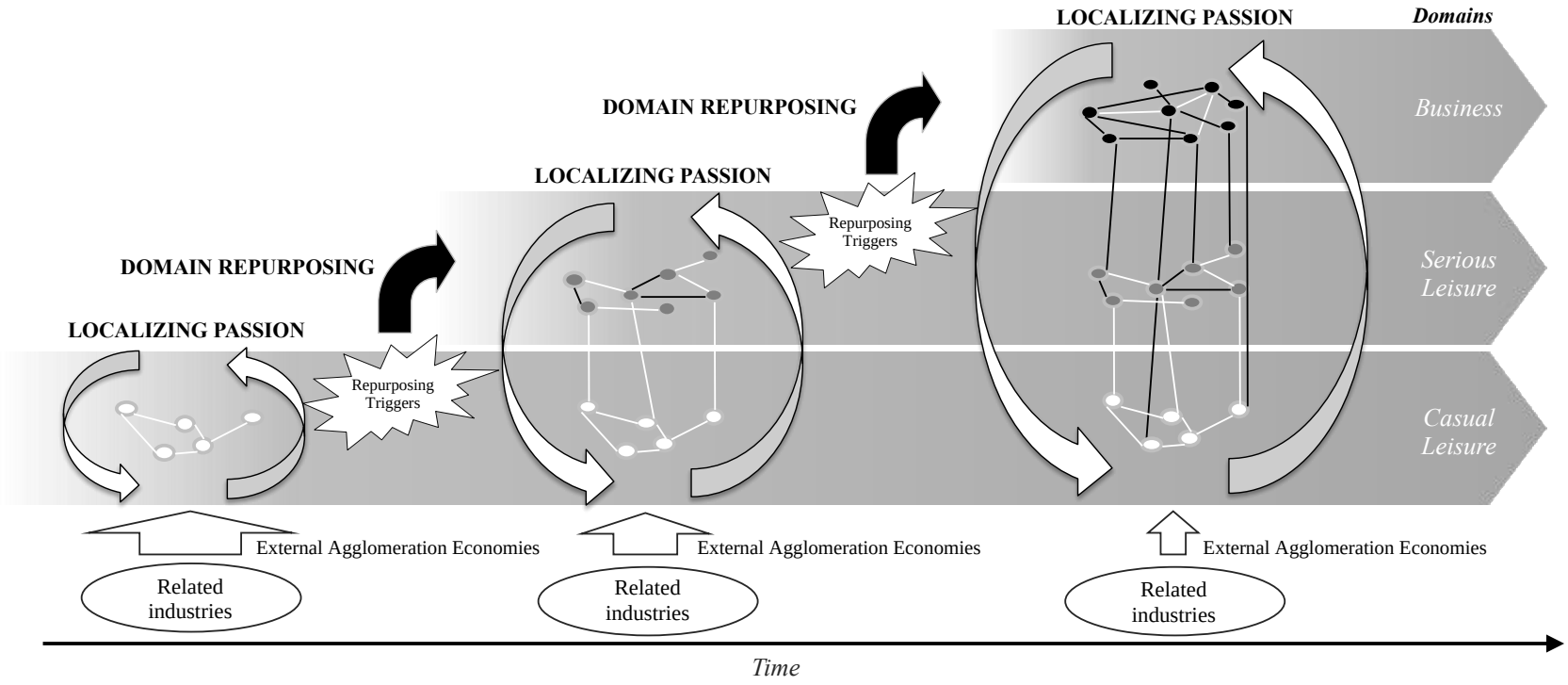


FIGURE 2
A Process Model of Industrial Cluster Genesis



LEGEND

Actors

- Non-professional actors (e.g., hobbyists)
- Semi-professional actors (e.g., serious hobbyists)
- Professional actors (e.g., managers, entrepreneurs, professionals)

Interdependencies

- Black solid lines: Traded interdependencies
- White solid lines: Untraded interdependencies

Mechanisms

- Domain Repurposing → Industry Emergence
- Localizing Passion → Cluster Genesis

FIGURE 3
Cross-sectional Map of the Main Locations in the British Motorsport Valley and Related Industries

Link to interactive map: t.ly/d9Qw

LEGEND

Motorsport Organizations and Institutions	Racing Locations	Companies in Related Industries
Club Locations (pre-1950)	Racetracks repurposed from WWII airfields	Automotive
Marques	Standard racetracks	Aviation and aerospace
Motorsport companies (car manufacturers, suppliers, etc.)	Hill climbs used for time trials races	Motorcycles
Institutions and associations	Silverstone Circuit (repurposed airfield)	High-end motorsport
Universities with motorsport research and/or education		Other industries

FIGURE 4
Contribution to Motorsport Activities in the UK:
Firms in Motorsport vs. Related Industries

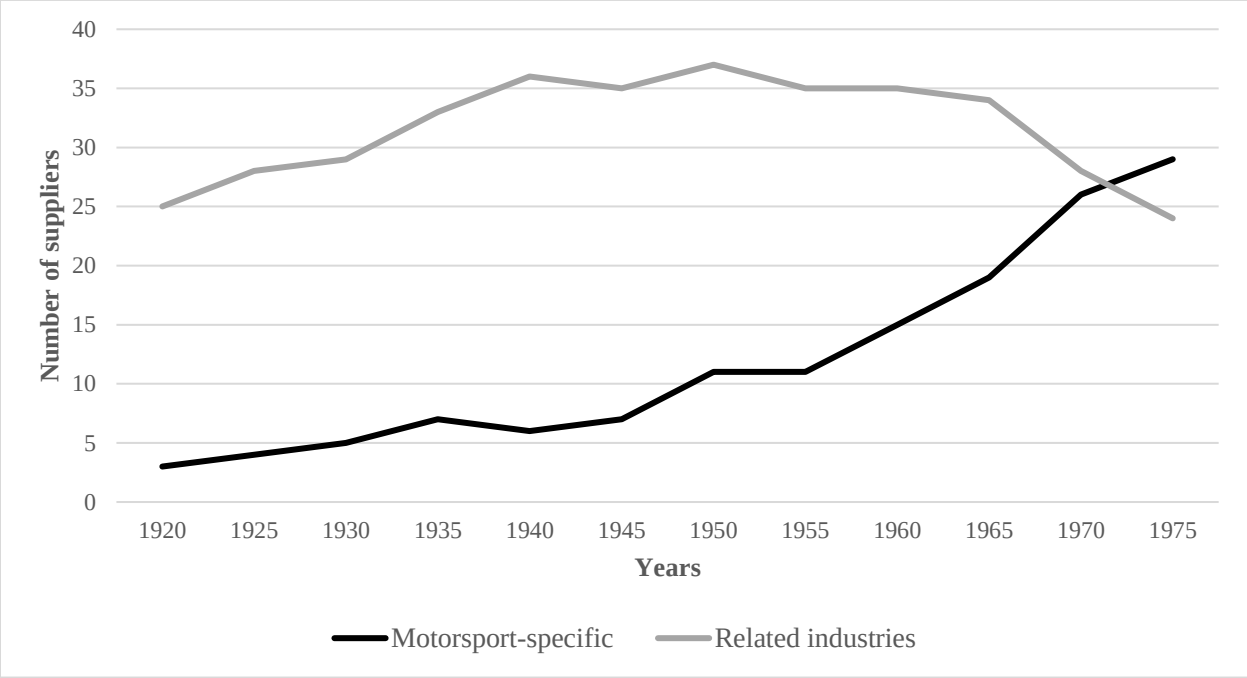


FIGURE 5
Firms Producing for Motorsport Activities in the UK: Club vs. No-Club Connection

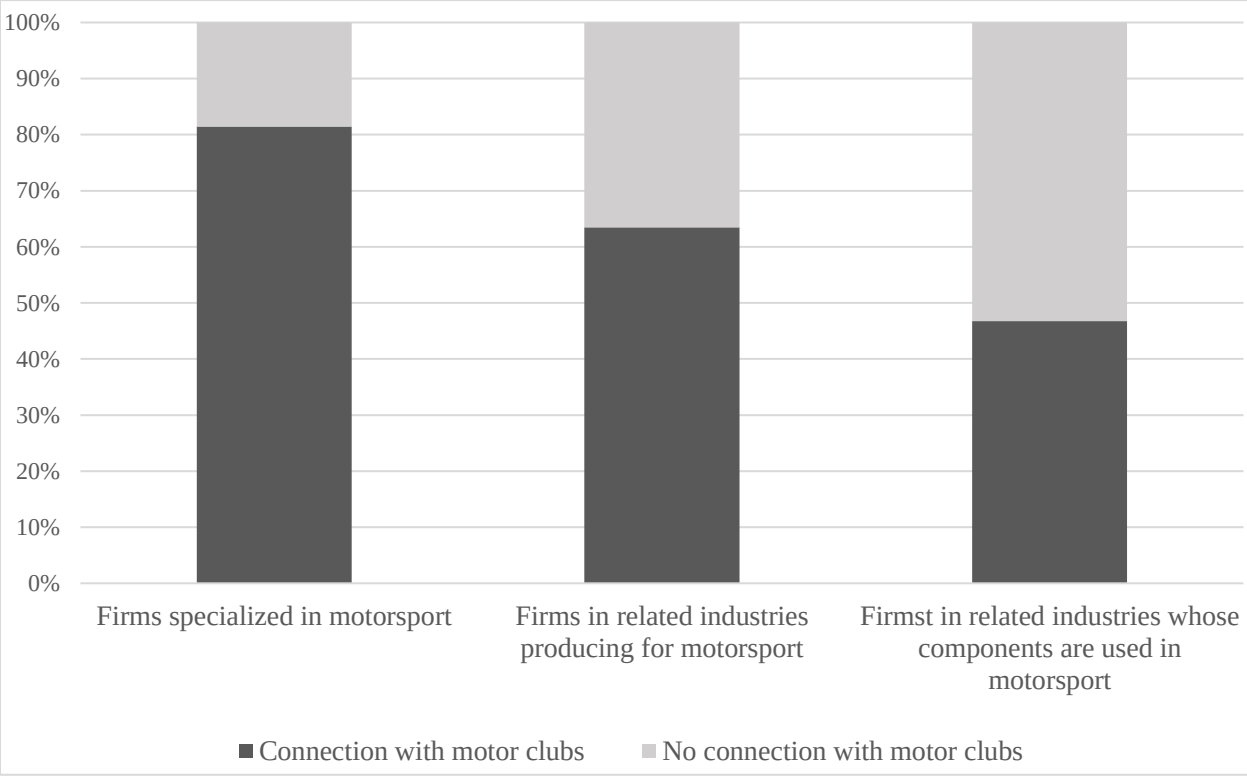
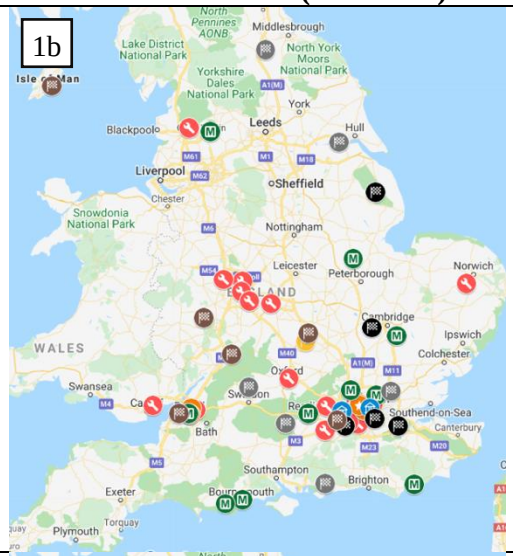
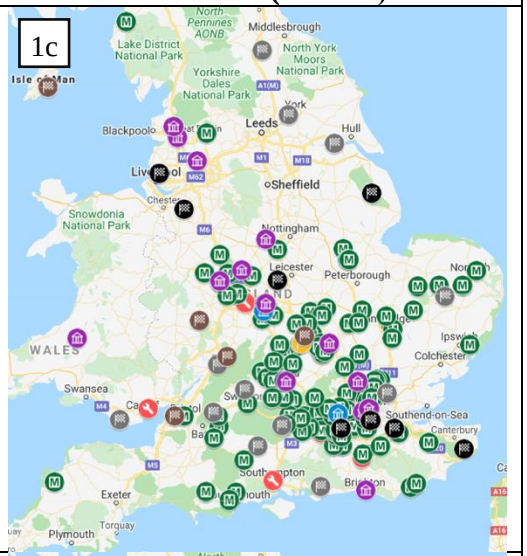


FIGURE 6
Maps of the Main Locations of the British Motor Sport Valley Cluster and Related Industries

	a. Casual Leisure (1911-1944)	b. Serious Leisure (1945-1949)	c. Business (1950-…)
1. Motor Sport Valley Industrial Cluster			
2. Related Industries			
Link	t.ly/NzjR	t.ly/zD1Z	t.ly/UJsm

Note: See Figure 1 legend to read the icons on the maps

REFERENCES

Abell, P., T. Felin, N. Foss. 2008. Building micro-foundations for the routines, capabilities, and performance links. *Managerial and Decision Economics* 29(6) 489-502.

Agarwal, R., B.L. Bayus. 2002. The market evolution and sales takeoff of product innovations. *Management Science* 48(8) 1024-1041.

Agarwal, R., M. Moeen, S.K. Shah. 2017. Athena's birth: Triggers, actors, and actions preceding industry inception. *Strategic Entrepreneurship Journal* 11(3) 287-305.

Agarwal, R., S.K. Shah. 2014. Knowledge sources of entrepreneurship: Firm formation by academic, user and employee innovators. *Research Policy* 43(7) 1109-1133.

Almeida, P., B. Kogut. 1997. The exploration of technological diversity and geographic localization in innovation: Start-up firms in the semiconductor industry. *Small Business Economics* 9(1) 21-31.

Anderson, E., M. Tushman. 1990. Technological discontinuities and dominant designs: A cyclical model of technological change. *Administrative Science Quarterly* 35(4) 604-633.

Andriani, P., G. Cattani. 2016. Exaptation as source of creativity, innovation, and diversity: introduction to the Special Section. *Industrial and Corporate Change* 25(1) 115-131.

Argyres, N.S., A. De Massis, N.J. Foss, F. Frattini, G. Jones, B.S. Silverman. 2020. History-informed strategy research: The promise of history and historical research methods in advancing strategy scholarship. *Strategic Management Journal* 41(3) 343-368.

Aston, B., M. Williams. 1996. Playing to Win: The Success of UK Motorsport Engineering. *Institute of Public Policy Research*, London, U.K.

Autio, E., L. Dahlander, L. Frederiksen. 2013. Information exposure, opportunity evaluation, and entrepreneurial action: An investigation of an online user community. *Academy of Management Journal* 56(5) 1348-1371.

Bailey, M. 2012. The chaos and the passion – it can only be Silverstone and Formula One. *Norwich Evening News* https://www.eveningnews24.co.uk/sport/the-chaos-and-the-passion-it-can-only-be-silverstone-and-formula-one-1-1436402.

Baldwin, C., C. Hienerth, E. Von Hippel. 2006. How user innovations become commercial products: A theoretical investigation and case study. *Research Policy* 35(9) 1291-1313.

Beck-Burridge, M., J. Walton. 1999. Britain's winning formula: Achieving world leadership in motorsports. Springer.

Beckert, J. 1999. Agency, entrepreneurs, and institutional change. The role of strategic choice and institutionalized practices in organizations. *Organization Studies* 20(5) 777-799.

Bell, G.G. 2005. Clusters, networks, and firm innovativeness. *Strategic Management Journal* 26(3) 287-295.

Belussi, F., A. Sammarra, S.R. Sedita. 2010. Learning at the boundaries in an "Open Regional Innovation System": A focus on firms' innovation strategies in the Emilia Romagna life science industry. *Research Policy* 39(6) 710-721.

Berends, H., & Deken, F. 2020. Composing qualitative process research. *Strategic Organization*: 1476127018824838.

Bergson, H. 1911. *Creative evolution*. University Press of America.

Beck-Burridge, M., J. Walton. 1999. Britain's winning formula: Achieving world leadership in motorsports. Springer.

Braunerhjelm, P.B., M.P. Feldman. 2006. *Cluster genesis: technology-based industrial development*. Oxford University Press.

Brunell, W.J. 1955. The sprint events of the 20s. *Motorsport Magazine* 4(April) 171-172.

Cardon, M.S., M.D. Foo, D. Shepherd, J. Wiklund. 2012. Exploring the heart: Entrepreneurial emotion is a hot topic. *Entrepreneurship Theory and Practice* 36(1) 1-10.

Cardon, M.S., D.A. Gregoire, C.E. Stevens, P.C. Patel. 2013. Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing* 28(3) 373-396.

Cardon, M.S., C. Post, W.R. Forster. 2017. Team entrepreneurial passion: Its emergence and influence in new venture teams. *Academy of Management Review* 42(2) 283-305.
Cardon, M.S., J. Wincent, J. Singh, M Drnovsek. 2009. The nature and experience of entrepreneurial passion. *Academy of Management Review* 34(3) 511-532.
Cattani, G. 2005. Preadaptation, firm heterogeneity, and technological performance: a study on the evolution of fiber optics, 1970–1995. *Organization Science* 16(6) 563-580.
Cattani, G. 2006. Technological preadaptation, speciation and emergence of new technologies: How Corning invented and developed fiber optics. *Industrial & Corporate Change* 15(2) 285-318.
Cattani, G., R.L. Dunbar, Z. Shapira. 2013. Value creation and knowledge loss: The case of Cremonese stringed instruments. *Organization Science* 24(3) 813-830.
Cattani, G., S. Ferriani, A. Lanza. 2017. Deconstructing the Outsider Puzzle: The Legitimation Journey of Novelty. *Organization Science* 28(6) 965 - 992.
Crombac, G. 2001. *Colin Chapman: The Man and his Cars.*, Yeovil, Somerset, UK.
Collins, R. 2004. *Interaction Ritual Chains*. Princeton University Press.
Couldwell, C. 2012. *Formula One: Made in Britain*. Random House.
Cresswell, T. 2004. Defining place. M. Himley, A. Fitzsimmons, eds. *Critical encounters with texts: finding a place to stand*. Pearson, Boston, MA, 127-136.
Croidieu, G., P.H. Kim. 2018. Labor of love: Amateurs and lay-expertise legitimation in the early US radio field. *Administrative Science Quarterly* 63(1) 1-42.
Dacin, M. T., Dacin, P. A., and Kent, D. (2019). Tradition in organizations: A custodianship framework. *Academy of Management Annals*, 13(1), 342-373.
Darwin, C. 1859. *The origin of species.* John Murray, London, UK.
De Wit, I. 2015. How can business clusters drive success? *World Economic Forum* https://www.weforum.org/agenda/2015/07/how-can-business-clusters-drive-success/.
Dew, N. 2009. Serendipity in entrepreneurship. *Organization Studies* 30(7) 735-753.
Dew, N., D. Sarasvathy, S. Venkataraman. 2004. The economic implications of exaptation. *Journal of Evolutionary Economics* 14 69-84.
Dosi, G. 1988. Sources, procedures, and microeconomic effects of innovation. *Journal of Economic Literature* 26(3) 1120-1171.
Duranton, G., D. Puga. 2004. Micro-foundations of urban agglomeration economies *Handbook of regional and urban economics*. Elsevier, 2063-2117.
Eisenhardt, K.M., M.E. Graebner. 2007. Theory building from cases: Opportunities and challenges. *The Academy of Management Journal* 50(1) 25-32.
Engler, D., G. Cattani, J. Porac. 2020. Studying the incubation of a new product market through realized and alternative histories. *Strategy Science* 5(3) 160-192.
Farny, S., E. Kibler, S. Down. 2019. Collective emotions in institutional creation work. *Academy of Management Journal* 62(3) 765-799.
Feldman, M.P. 1999. The new economics of innovation, spillovers and agglomeration: A review of empirical studies. *Economics of Innovation and New Technology* 8(1-2) 5-25.2005
Feldman, M.P. 2000. Location and innovation: the new economic geography of innovation, spillovers, and agglomeration. *The Oxford Handbook of Economic Geography* 1 373-395.
Feldman, M. P. 2003. The locational dynamics of the US biotech industry: knowledge externalities and the anchor hypothesis. *Industry and Innovation* 10(3) 311-329.
Feldman, M.P., M. Storper. 2018. Economic Growth and Economic Development: Geographical Dimensions, Definition, and Disparities. In G.L. Clark, M.P. Feldman, M.S. Gertler, D. Wójcik, M.P. Feldman, M. Storper, eds. *The New Oxford Handbook of Economic Geography*. Oxford University Press, Oxford, UK.
Ferriani, S., M.H. Lazerson, G. Lorenzoni. 2020. Anchor entrepreneurship and industry catalysis: The rise of the Italian Biomedical Valley. *Research Policy* 49(8) 104045.
Fleming, L., C.I. King, A.I. Juda. 2007. Small Worlds and Regional Innovation. *Organization Science* 18(6) 938-954.

Furnari, S. 2014. Interstitial Spaces: Micro-Interaction Settings and the Genesis of New Practices between Institutional Fields. *Academy of Management Review* 39(4) 439-462.
Furnari, S. 2016. Institutional fields as linked arenas: Inter-field resource dependence, institutional work and institutional change. *Human Relations* 69(3) 551-580.
Furnari, S. 2019. Situating frames and institutional logics: The social situation as a key institutional microfoundation *Microfoundations of institutions*. Emerald Publishing Limited.
Furr, N.R. 2019. Product Adaptation During New Industry Emergence: The Role of Start-Up Team Preentry Experience. *Organization Science* 30(5) 1076-1096.
Gao, C., R. McDonald. 2020. Shaping nascent industries: Innovation strategy and regulatory uncertainty in personal genomics *Harvard Business School Working Paper*, No. 20-095.
George, A.L., A. Bennett. 2005. *Case studies and theory development in the social sciences*. MIT Press, Cambridge, MA.
Gieryn, T.F. 2000. A space for place in sociology. *Annual Review of Sociology* 26(1) 463-496.
Gioia, D.A., K.G. Corley, A.L. Hamilton. 2013. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods* 16(1) 15-31.
Glaser, B., A. Strauss. 1967. The discovery grounded theory: strategies for qualitative inquiry. *London, England: Wiedenfeld and Nicholson*.
Goodwin, J., J.M. Jasper, F. Polletta. 2001. *Passionate politics: Emotions and social movements*. University of Chicago Press.
Goodwin, J., S. Pfaff. 2001. Emotion work in high-risk social movements: Managing fear in the US and East German civil rights movements. *Passionate politics: Emotions and social movements* 282-302.
Gort, M., S. Klepper. 1982. Time paths in the diffusion of product innovations. *The Economic Journal* 92(367) 630-653.
Griliches, Z. 1992. The search for R&D spillovers. *The Scandinavian Journal of Economics* 94 (Supplement) 29-47.
Grodal, S., A. Gotsopoulos, F.F. Suarez. 2015. The coevolution of technologies and categories during industry emergence. *Academy of Management Review* 40(3) 423-445.
Haack, P., J. Sieweke, L. Wessel. 2019. Microfoundations and multi-level research on institutions *Microfoundations of Institutions*. Emerald Publishing Limited.
Hargadon, A.B., Y. Douglas. 2001. When innovations meet institutions: Edison and the design of the electric light. *Administrative Science Quarterly* 46(3) 476-501.
Helfat, C. E., and Raubitschek, R. S. 2000. Product sequencing: co-evolution of knowledge, capabilities and products. *Strategic Management Journal*, 21(10-11): 961-979.
Henry, N., T. Angus, M. Jenkins, C. Aylett. 2007. Motorsport going global: The challenges facing the world's motorsport industry. Springer.
Henry, N., S. Pinch. 2000. Spatialising knowledge: placing the knowledge community of Motor Sport Valley. *Geoforum* 31(2) 191-208.
Henry, N., S. Pinch, J. Bryson, P. Daniels, N. Henry, J. Polland. 2000. *(The) industrial agglomeration (of Motor Sport Valley)*. Routledge London.
Henry, N., S. Pinch, S. Russell. 1996. In pole position? Untraded interdependencies, new industrial spaces and the British motor sport industry. *Area* 25-36.
Hilton, C. 2004. Le Mans '55: The Crash That Changed the Face of Motor Racing. Breedon Books Pub Co Ltd.
Howard-Grenville, J., M.L. Metzger, A.D. Meyer. 2013. Rekindling the flame: Processes of identity resurrection. *Academy of Management Journal* 56(1) 113-136.
Iammarino, S., P. McCann. 2006. The structure and evolution of industrial clusters: Transactions, technology and knowledge spillovers. *Research Policy* 35(7) 1018-1036.
Ingram, P., H. Rao, B.S. Silverman. 2012. History in strategy research: What, why, and how. *Advances in Strategic Management* 29 241-273.
Isabella, L.A. 1990. Evolving interpretations as a change unfolds: How managers construe key organizational events. *Academy of Management Journal* 33(1) 7-41.

Iso-Ahola, S.E. 1980. *The social psychology of leisure and recreation*. WC Brown Co. Publishers.
Jaffe, A.B. 1989. Real effects of academic research. *American Economic Review* 79(5) 957-970.
Jasper, J.M. 2011. Emotions and social movements: Twenty years of theory and research. *Annual Review of Sociology* 37 285-303.
Jenkins, M., S. Tallman. 2015. The Geography of Learning: Ferrari Gestione Sportiva 1929–2008. *Journal of Economic Geography*.
Jeremiah, D. 1997. Imaging of motoring. B.J.H. Brown, ed. Exploration in Motor History: The Proceedings of the First United Kingdom History of Motoring Conference, 12 October 1996. Oxbow Books, Oxford, UK, 1-16.
Kaplan, S. 2008. Framing contests: Strategy making under uncertainty. *Organization Science* 19(5) 729-752.
Kirsch, D., M. Moeen, R.D. Wadhwani. 2014. Historicism and industry emergence: Industry knowledge from pre-emergence to stylized fact. *Organizations in time: History, theory, methods* 217.
Klepper, S. 2002. The capabilities of new firms and the evolution of the US automobile industry. *Industrial and Corporate Change* 11(4) 645-666.
Klepper, S. 2007. Disagreements, spinoffs, and the evolution of Detroit as the capital of the US automobile industry. *Management Science* 53(4) 616-631.
Klepper, S. 2010. The origin and growth of industry clusters: The making of Silicon Valley and Detroit. *Journal of Urban Economics* 67(1) 15-32.
Klepper, S. 2015. Experimental capitalism: The nanoeconomics of American high-tech industries. Princeton University Press.
Krugman, P.R. 1991. *Geography and trade*. MIT Press, Cambridge, MA.
Kouamé, S., F. Liu. 2020. Capturing emotions in qualitative strategic organization research. *Strategic Organization* 1476127020935449.
Langley, A. 1999. Strategies for theorizing from process data. *Academy of Management Review* 24(4) 691-710.
Lawrence, M. 2003. *Colin Chapman Wayward Genius*. Brooklands Books Ltd
Lawrence, T.B., G. Dover. 2015. Place and institutional work: Creating housing for the hard-to-house. *Administrative Science Quarterly* 60(3) 371-410.
Lawson, C. 1999. Towards a competence theory of the region. *Cambridge Journal of Economics* 23(2) 151-166.
Lounsbury, M., M. Ventresca, P.M. Hirsch. 2003. Social movements, field frames and industry emergence: a cultural–political perspective on US recycling. *Socio-economic review* 1(1) 71-104.
Lüthje, C., C. Herstatt, E. Von Hippel. 2005. User-innovators and "local" information: The case of mountain biking. *Research Policy* 34(6) 951-965.
Marino, A., P. Aversa, L. Mesquita, J. Anand. 2015. Driving performance via exploration in changing environments: Evidence from Formula One racing. *Organization Science* 26(4) 1079-1100.
Maitlis, S., H. Ozcelik. 2004. Toxic decision processes: A study of emotion and organizational decision making. *Organization Science* 15(4) 375-393.
Markusen, A. 1996. Sticky places in slippery space: A typology of industrial districts. *Economic Geography* 72(3) 293-313.
Marshall, A. 1890. *Principles of Economics*. MacMillan, London, U.K.
Maskell, P. 2001. Towards a Knowledge-based Theory of the Geographical Cluster. *Industrial and Corporate Change* 10(4) 921-943.
Massa, F.G., W.S. Helms, M. Voronov, L. Wang. 2017. Emotions uncorked: Inspiring evangelism for the emerging practice of cool-climate winemaking in Ontario. *Academy of Management Journal* 60(2) 461-499.
Massey, D.B. 1995. The conceptualization of place. D.B. Massey, P.M. Jess, eds. *A Place in the World: Cultures and Globalization*. Oxford University Press, Oxford, UK, 45-77.
Moeen, M., R. Agarwal. 2017. Incubation of an industry: Heterogeneous knowledge bases and modes of value capture. *Strategic Management Journal* 38(3) 566-587.

Moeen, M., R. Agarwal, S. Shah. 2020. Building Industries by Building Knowledge: Uncertainty Reduction Over Industry Milestones. *Strategy Science* 5(2018-244).

Moeen, M., and Mitchell, W. 2020. How do pre‐entrants to the industry incubation stage choose between alliances and acquisitions for technical capabilities and specialized complementary assets? *Strategic Management Journal*, 42(8): 1450-1489.

Morgan, D. 2009. Seven Fifty Motor Club. The birthplace of modern British motorsport. JH Haynes & Co Ltd.

Mowery, D.C. 2010. *Military R&D and innovation*. Handbook of the Economics of Innovation. Elsevier, 1219-1256.

Nye. 1983. *Cooper Cars*. Osprey Publishing Ltd., London, U.K.

Öhman, J., K. Simonsen. 2018. *Voices from the north: New trends in Nordic human geography*. Routledge, New York, NY.

Oparin, A.I. 2003. *Origin of life (2nd edition)*. Dover Publications, Mineola, New York.

Owen-Smith, J., W.W. Powell. 2004. Knowledge Networks as Channels and Conduits: The Effects of Spillovers in the Boston Biotechnology Community. *Organization Science* 15(1) 5-21.

Padgett, J. F., and Powell, W. W. (2012). *The emergence of organizations and markets*. Princeton University Press.

Parker, C. 2013. *Silverstone. The home of British motor racing*. Haynes Publishing, Sparkford, UK.

Peck, C. 1960. *The Special Builders' Guide* The 750 Motor Club Ltd., Bighill, Kent.

Perez-Aleman, P. 2005. Cluster formation, institutions and learning: the emergence of clusters and development in Chile. *Industrial and Corporate Change* 14(4) 651-677.

Pettigrew, A.M., 1990 Longitudinal field research on change: Theory and practice. Organization science, 1(3), pp. 267-292.

Pickup, O. 2017. Silverstone: the greatest racetrack in Britain? *TheTelegraph.co.uk* https://www.telegraph.co.uk/connect/small-business/operations-and-logistics/renault/is-this-britains-greatest-racetrack/.

Pinch, S., N. Henry. 1999a. Discursive aspects of technological innovation: the case of the British motor-sport industry. *Environment and Planning A* 31(4) 665-682.

Pinch, S., N. Henry. 1999b. Paul Krugman's geographical economics, industrial clustering and the British motor sport industry. *Regional Studies* 33(9) 815-827.

Pinch, S., N. Henry, M. Jenkins, S. Tallman. 2003. From industrial districts to knowledge clusters: a model of knowledge dissemination and competitive advantage in industrial agglomerations. *Journal of Economic Geography* 3(4) 373.

Pinch, S., N. Henry, D. Turner. 1997. In pole position: explaining the supremacy of Britain's Motorsport Valley. B.J.H. Brown, ed. *Exploration in Motor History: The Proceedings of the First United Kingdom History of Motoring Conference, 12 October 1996:* . Oxbow Books, Oxford, UK, 65-80.

Porter, M.E. 1990. Competitive advantage of nations: creating and sustaining superior performance. The Free Press, New York.

Porter, M.E. 2000. Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly* 14(1) 15-34.

Pouder, R., C.H. St. John. 1996. Hot spots and blind spots: geographical clusters of firms and innovation. *Academy of Management Review* 1192-1225.

Powell, W.W., K.W. Koput, L. Smith-Doerr. 1996. Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology. *Administrative Science Quarterly* 41(1) 116-145.

Powell, W.W., K. Packalen, K. Whittington. 2012. Organizational and institutional genesis. In Padgett, J.F., Powell, W. W. (Ed.), *The emergence of organizations and markets*, pp.434-465. Princeton University Press.

Powell, W.W., K.W. Sandholtz. 2012. Amphibious entrepreneurs and the emergence of organizational forms. *Strategic Entrepreneurship Journal* 6(2) 94-115.

Rao, H., C. Morrill, M.N. Zald. 2000. Power plays: How social movements and collective action create new organizational forms. *Research in organizational behavior* 22 237-281.
Reinecke, J., S. Ansari. 2020. Microfoundations of Framing: The Interactional Production of Collective Action Frames in the Occupy Movement. *Academy of Management Journal* (forthcoming).
Richards, C. 2019. George Russell: 'Silverstone gives you a special feeling, goosebumps'. *TheGuardian.com* https://www.theguardian.com/sport/2019/jul/13/george-russell-silverstone-special-f1-british-grand-prix.
Rudd, T. 1993. It Was Fun: My Fifty Years of High Performance Haynes Manuals Inc.
Rutten, R. (2017). Beyond proximities: The socio-spatial dynamics of knowledge creation. *Progress in Human Geography*, 41(2), 159-177.
Saxenian, A.L. 1991. The origins and dynamics of production networks in Silicon Valley. *Research Policy* 20 423–437.
Scott, D. 2011. Bernie Ecclestone: A Short History of F1's Billion-Dollar Brain. *Bleatcher Report* http://bleacherreport.com/articles/542560-f1s-billion-dollar-brain-a-short-history-of-bernie-ecclestone.
Scuderia Ferrari Club. 2017. Colin Chapman - the genius. *SFCRiga.com* http://www.sfcriga.com/colin-chapman-the-genius.
Sewell, W.H. 1996. Historical events as transformations of structures: Inventing revolution at the Bastille. *Theory and society* 25(6) 841-881.
Sine, W.D., B.H. Lee. 2009. Tilting at windmills? The environmental movement and the emergence of the US wind energy sector. *Administrative Science Quarterly* 54(1) 123-155.
Shah, S.K. 2006. Motivation, governance, and the viability of hybrid forms in open source software development. *Management Science* 52(7) 1000-1014.
Shah, S.K., M. Tripsas. 2007. The accidental entrepreneur: The emergent and collective process of user entrepreneurship. *Strategic Entrepreneurship Journal* 1(1-2) 123-140.
Shane, S., E.A. Locke, C.J. Collins. 2003. Entrepreneurial motivation. *Human Resource Management Review* 13(2) 257-279.
Shaver, J.M., F. Flyer. 2000. Agglomeration economies, firm heterogeneity, and foreign direct investment in the United States. *Strategic Management Journal* 21(12) 1175-1193.
Smith, J.D.F., R. Florida. 1994. Agglomeration and Industrial Location: An Econometric Analysis of Japanese-Affiliated Manufacturing Establishments in Automotive-Related Industries. *Journal of Urban Economics* 36(1) 23-41.
Snow, D.A., S.A. Soule, H. Kriesi. 2004. Mapping the terrain. D.A. Snow, S.A. Soule, H. Kriesi, eds. *The Blackwell companion to social movements*. Wiley-Blackwell, Malden, MA, 3-16.
Stebbins, R.A. 1982. Serious leisure: A conceptual statement. *Pacific sociological review* 25(2) 251-272.
Stebbins, R.A. 1997. Casual leisure: A conceptual statement. *Leisure studies* 16(1) 17-25.
Stigliani, I., D. Ravasi. 2012. Organizing thoughts and connecting brains: Material practices and the transition from individual to group-level prospective sensemaking. *Academy of Management Journal* 55(5) 1232-1259.
Storper, M. 1993. Regional "worlds" of production: Learning and innovation in the technology districts of France, Italy and the USA. *Regional Studies* 27(5) 433-455.
Storper, M. 1995. The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies. *European Urban and Regional Studies* 2(3) 191-221.
Storper, M. 1997. The regional world: territorial development in a global economy. Guilford press.
Storper, M., R. Salais. 1997. Worlds of production: The action frameworks of the economy. Harvard University Press.
Stowe, P. 2001. Backfire: The history of the Bristol Aeroplane Company Motor Club. Laxton Press.
Strauss, A., J.M. Corbin. 1990. Basics of qualitative research: Grounded theory procedures and techniques. Sage Publications, Inc.
Szulanski, G. 2003. Sticky knowledge: Barriers to knowing in the firm. Sage.

Tallman, S., M. Jenkins, N. Henry, S. Pinch. 2004. Knowledge, clusters, and competitive advantage. *The Academy of Management Review* 29(2) 258-271.

Ter Wal, A.L., R. Boschma. 2011. Co-evolution of firms, industries and networks in space. *Regional Studies* 45(7) 919-933.

Toubiana, M., C. Zietsma. 2017. The message is on the wall? Emotions, social media and the dynamics of institutional complexity. *Academy of Management Journal* 60(3) 922-953.

Trippl, M., Grillitsch, Isaksen, A. and Sinozix, T. 2015. *European Planning Studies*, 23, 10, 2028-2044.

Tuan, Y.-F. 1977. *Space and place: The perspective of experience*. University of Minnesota Press, Minneapolis, MN.

Turner, J.H., J.E. Stets. 2005. *The sociology of emotions*. Cambridge University Press.

Vaara, E., J.-A. Lamberg. 2016. Taking historical embeddedness seriously: Three historical approaches to advance strategy process and practice research. *Academy of Management Review* 41(4) 633-657.

Zietsma, C., M. Toubiana, M. Voronov, A. Roberts. 2019. *Emotions in organization theory*. Cambridge University Press, Cambridge, UK.

Zucker, L.G., M.R. Darby. 1996. Star scientists and institutional transformation: Patterns of invention and innovation in the formation of the biotechnology industry. *Proceedings of the National Academy of Sciences* 93(23) 12709-12716.