Reifying luxury, gold to golden: How the showroom became a digital showreel: 
From object (gold) to experience (golden): Experiencing luxury by abstracting the object

Silvio Carta, University of Hertfordshire
Pieter de Kock, University of Lincoln

Abstract
This article focuses on the notion of space of luxury. It explores the passage of time; in how showrooms and flagship stores, embedded in the tradition of symbolism and paradigms of symbolic elements, intersect with cutting-edge digital technologies. Also analysed is the resulting customer experience, evident at this meeting between old and new technologies. This study consists of three parts. First, a framework is established by way of a discussion of key concepts underpinning the physical, symbolical and cultural characteristics of the architecture of consumerism and luxury. Second, several case studies are examined to help understand the transition from the use of physical elements (materials, spatial qualities, lighting and surfaces), which generate exclusivity, surprise and sophistication in high-end showrooms, to the employment of new digital technologies – where the luxury component is provided by access to exclusive information and experience. The final part discusses how data and information technologies are radically transforming the current luxury market, where luxury is based on accessibility, visibility and perception. Traditionally luxury spaces were based on a physical demarcation of territories of exclusivity. This contrasts with new luxury spaces that allow for exclusivity to be invisible and ubiquitous; enhancing not only its own imposition of narrow market segmentation, but
also acting as bridging elements into every other market sector. Traditionally, the quality and durability of experience around visual meaning, has always been a prerequisite for luxury. As our visual world reorients around the invisible, what we cannot see still has to be sustainable to the point of scarcity. This study holds that visual sustainability, as part of the larger orbit of perception's five senses, still remains the primary container of meaning, because we see through our experience. Through this experience then, luxury is reinventing itself as a digital showreel; not only of what exists, but of what is possible.

Keywords
luxury
visual sustainability
digital design
ubiquitous computing
Internet of Things
digital luxury

Introduction

This article discusses the gradual transition of the symbols of luxury from physical elements (here defined as ‘gold’) to digital (‘golden’). This significant shift is analysed through the lens of the dissemination of digital technologies in general, and of the notions of ubiquitous computing (Weiser 1993), Internet of Things (IoT), dislocation (Koehler 2017), visual sustainability (de Kock 2019) and blurred boundaries (Carta 2019a). A series of case studies supports the discussion, providing a clear illustration of how the notion of space of luxury (in this context including the combination of
physical and virtual) is profoundly changing in its nature. One of the most relevant outcomes of this study lies in the realization and understanding of the effect change has had on the agency that underpins the production and perception of luxury in architecture and design. Luxury, in fact, is no longer conveyed by explicit visual cues. Instead it has evolved into an overall ubiquitous experience characterized by a growing absence of objects, the disappearance of traditional luxury signifiers (gold or gemstones), and the continuous search for new technology-driven applications by which to distinguish ourselves from others. By the same token, we suggest that luxury is no longer a desirable achievement designed for a small social group. It instead embraces a pervasive technological environment where customers are naturally immersed and unconsciously attracted to a more aspirational existence. An interesting aspect of this phenomenon is, for example, where:

“Microcelebrity entails a dramatic twist on aspirational consumption – the practice in which cheaper ‘entry-level’ luxury goods marketed by brands like Chanel and Gucci are bought in an effort to evoke the aura of an otherwise unattainable brand (Welch 2002) – namely, aspirational production: microcelebrities creating content that portrays them in a high-status light, simulating the attention given to celebrities.” (Marwick 2015: 156)

The old showroom transformed forever by the digital.

**Framing the golden**

The point about luxury is that there is no need to have a point. Luxury can exist physically simply in use of space, at any scale; and mentally through sense-data.
Luxury does not need to be practical; it most often is not. In this first section, before we move on to the case studies, we will look briefly at the notion of luxury in different contexts. Luxury has always been about scarcity and experience; but it is not an easy concept to understand (Wiedmann et al. 2009). Luxury can exist, we argue, embedded in ordinary objects, through branding, or signification; as much as it exists in concrete objects. We will argue that there is a trend emerging, in terms of signification of luxury, where the abstract is becoming more concrete and gaining power, while the concrete is becoming more abstract and becoming less influential.

Traditionally a high percentage of advertisements on TV were aimed at self-esteem. The digital has changed that dynamic (Marwick 2015). Luxury is no longer limited to the presentation of an object or thing, but, we suggest, has cannibalized behaviour, becoming arguably alarmingly self-centred; and producing ‘hierarchies of luxury […] that depend on the ability to emulate’ (Wiedmann et al. 2009: 139). We have evolved, it can be argued, from gold (the object, what we can see) to golden (what we experience). There is a luxury in accessing things that we cannot see, from certain knowledge or data; of interaction with certain people; the luxury of exclusive networking; to the world of sensory experience.
Figure 1: The Vessel, Hudson Yards, New York. Luxury with no practical purpose except to exist as a jewel. © Pieter de Kock (2019).

Time will tell how the speed and ubiquitous nature of the World Wide Web (www) and artificial intelligence (AI) have allowed luxury to be redefined. Certainly true is how businesses are no longer bound by physicality but can effortlessly create new boundaries of territory and association, of both collaborative and adversarial competition. As the invisible becomes more important to us, identifying gaps in the market has become pivotal one can argue, in redefining luxury. The showroom has indeed become a showreel.
In the logistical challenge, from serving the individual in a showroom, to serving the individual who you cannot see, with something that cannot be seen, we enter the territory of Lefebvre’s invisible needs (Lefebvre and Nicholson-Smith 2011: 394). For luxury to exist at all we can argue that ‘it is necessary for space to be occupied’ (2011: 169); and space is produced ‘in order to be lived by people with bodies and lives in their own particular urban context’ (2011: 143). So, whether luxury serves a function or not, it exists in much the same way as The Vessel (Figure 1) exists, if only through use of space.

Digital marketing channels will have to bridge the gap between the exclusivity of tangible products and the exclusive content of the abstract. For example, it can be said that the value added, in a service or product, is more nuanced than ever. In a traditional sense, chocolates left on the pillows of a hotel room are a tangible reminder that a service has been delivered. They exist as evidence of the intangible. In the digital how does this evidence manifest itself? Perhaps through temporal swarm-like behaviour, where networks of influence exist around the most connected nodes. It follows that luxury will become conspicuous at these nodes too; where it can be seen by others but not touched.

Contrasting luxury with fast-moving consumer goods (FMCG) (McDonald et al. 2001) the key ingredient in many products and services is, as always, defined by a concept of inaccessibility. While there are attempts for example in the world of Instagram, to redistribute meaning in luxury through sense-data, the selfie culture in the digital world is paradoxically redefining what luxury means to us (Marwick 2015). Thus, we have
two worlds that luxury currently inhabits. The conventional and a complex unpredictable world of sense-data.

It may be that luxury revolves more now around customer intimacy, where products or services are precisely targeted, matching specific desires, and producing unmatched personal experience and satisfaction; that deliberately target the self-regulating reward centre of the brain. Perception’s five senses too are discoverable by channelling this experience. It may be that in delivery of luxury, there are unintended results through emergent conditions associated with consuming in different locations, either physically or psychologically. The new consumers of digital luxury thus are participants who write their own script and produce their own experience. Therein lie the scarcity and that cannot be repeated or emulated.

While objects of luxury in the traditional sense may be more difficult to duplicate without compromising their scarcity, with the digital one person’s experience is not the same as another person’s. Once the experience is over all that remains is the memory, unique to each individual. Therein perhaps for luxury, lies the future. The experience becomes the luxury and the luxury becomes the experience. It may be said that luxury emerges as a programmable entity, which can be then distributed directly to the individual without reducing its sense of exclusivity. Experience then can be used in unique ways, partnering very different products; and so, emerge from the shadows of highly niche markets.

Visible and invisible
The invisible reified in the intangible. In the new digital what you are buying is not only access, but time, and status. ‘Luxury Instagram accounts function as catalogues of
what many young people dream of having and the lifestyle they dream of living’ (Wiedmann et al. 2009: 155). Time and status-aware personal attention is now a sought-after luxury. Everything is now about the individual. The scarcity lies in what could be called unique directed data (UDD); data that is uniquely packaged for singular or dedicated consumption, but instantaneously in a unique two-way interaction between encoder (seller) and customer (decoder). As data is being produced, it is most often being instantaneously consumed. Luxury in the digital dispensed on demand, as ‘wants’ are tracked in real-time and the information held by Big Data is continuously upgraded. Ultimate luxury occurs and exists by declaration, independent of the existence of context.

While demographics command the attention of the luxury market, where most of the digital consumers for luxury brands are younger and arguably more influential, luxury has always been sustained by loyalty and identity. A brand exists as an inseparable part of an individual’s personality. It can also be argued that luxury has not traditionally depended on market share because it is by definition a niche market offering – the more scarce the product or service the better. The price has traditionally compensated for market share.

In many traditional luxury brands, place or location was key to success. Territory was defined by real estate, in the showroom, or in the ultimate showroom of all, in iconic outdoor settings. For perfume it was Paris, for watches or chocolate, we associated the Swiss Alps. Within famous department stores real estate too was important, what floor, what area, which shelves. Along with real estate, the intangible qualities of a service associated the physical location with a purchaser’s experience. By contrast, in
a digital environment both these factors are diminished and replaced in the reward centre of the brain by the thrill of the chase, the thrill of being different, scarcity, and access to domains of knowledge for a select few. Businesses cluster, not along a street, but in people’s minds, through the network of the World Wide Web, ranking, robots, etc.

There is a distinction to highlight between the concept of physical network of the Internet, comprised of physical cabling between routers; and the virtual network represented by the World Wide Web, through web page connections (D’Souza, 2014, 00:08:40). Metaphorically then, luxury goods and services inhabiting the traditional High Street represents the Internet, which is a physical construct; while luxury as an online experience represents the World Wide Web. No longer primarily a physical construct, luxury now more than ever before chases our dreams; that themselves are now chased by the digital.

We used to have to physically relocate to access luxury. Now luxury is delivered to us. But how does luxury maintain its scarcity and exclusivity if we are no longer forced to sacrifice our location to access the good or service? In the next section we will look at how the concept of direct engagement has changed the encoding and decoding processes that signify luxury.
From gold to golden through five projects

This section discusses a series of recent interior and retail projects that epitomize the transition between physical to digital elements, whereby visual and aesthetic qualities of materials, spaces, lighting and surfaces become secondary to the extensive use of new digital technologies – where the luxury component is provided by access to exclusive information and experience.

Figure 2: AMO/OMA Rem Koohlaas – Content – Taschen 2004. Source: https://oma.eu/projects/prada-sport. Accessed 14 May 2019. This image illustrates the extreme consequence of massification of luxury products, whereby Prada handbags become extreme objects of desire, imitated and sold in the street. The emphasis is here on the visual elements that characterize such products (presence of logos, patterns, etc.).
The key notion in this passage becomes the visibility of elements. In the traditional idea of luxury, objects require to be highly visible to be perceived as desirable. Visual characteristics of objects are the main focal point for consumers to recognize and understand the brand. This may happen through the use of rich patterns, high-contrast materials or the presence of valuable materials such as valuable metals and precious gemstones. Luxury then is identified through a strong branding image and a number of highly recognisable symbols, logos, type fonts and colour palettes.

With the gradual expansion of digital technologies, this explicit visibility becomes more rarefied. Signals and indicators of value are less apparent and increasingly subtle. Customers are required to interpret the signals through the use of technology and immerse themselves into more comprehensive experiences. One example is the ubiquity and sense of dislocation that characterizes those retailers that provide a mobile app through which customers can scan an object that they see in the street, on a screen or physically in the shop, such as ASOS. They also have access to a series of exclusive online services and information about that particular product. In this scenario, especially as the trend continues of self-esteem driven by digital discourse, the physical location of the product is no longer relevant, and it becomes simply a vessel to unlock new services hosted in the Internet, therefore accessible from anywhere.

If, one the one hand, we see retailers and brands that constantly innovate and introduce new technologies to widen the buyers’ experience, on the other hand we
also witness customers who are increasingly sophisticated and aware of new ways of experience the purchasing and products.

Customers experience products through a plethora of platforms that include physical and digital means. The same advert may appear simultaneously on billboards on roads and motorways, on the side and back of buses and taxis, on a leaflet left in the post, as the header of a webpage, in-between posts on the infinite scrolling of social media, and ubiquitously in tube stations. Customers are so immersed into this sort of ubiquitous presence of images and branding experience that the level of expectation for new products and exciting new exposure is continuously growing.

The concept of visibility becomes particularly interesting when applied to where we have traditionally shopped: ‘the store’.

The growing quest for novel experience puts significant pressure on companies, often forced into the position of constantly innovating and trying to convince and amaze their customers with a unique offering, not seen before, and extraordinary. If the tactics of global and local brands adopt an ‘everywhere’ approach through the use of ubiquitous technology and information (Greenfield 2010); we will look at how brick and mortar showrooms are responding to this threat. How traditional shops and stores, which are still significantly characterized by a physical spatial experience, are adapting to these changes. We will show how many are actively engaging with these challenges, suggesting new directions or embracing the continuous demand for novelty as set out by market conditions.
There are a number of showrooms and flagship stores that seem to provide a positive answer to these questions. Not only do they seem to be up for this challenge but, in some cases, they also often become the main driver for innovation in a complex combination of sophisticated design, clever marketing campaign and smart technologies. The following projects illustrate how the physical space of a shop becomes can simultaneously become the container of the brand, and the vessel for new technologies to be deployed. Interestingly, while the digital aspects of the shopping experience become ubiquitous, the corresponding retail spaces take on a highly abstract and curated appearance. One may notice in this a shift of contents from the physical (a reduction) to the digital (that, in turn, becomes richer).

However, the absence of elements in the physical store, especially of highly visible objects that symbolize the presence of luxury, is the result of a highly complex process. Underneath the façade of simplicity, lies a great level of complexity. The application of effort, at different stages of the project, and through several processes, to eliminate superfluous elements is immense.

We have divided these projects into three main groups. In the first group, the Renault Symbioz Smart Home illustrates how the physical showroom can be a part of a more complex system of interrelated customer experiences, where the car, the IoT, and the various mobile and home devices all play an indiscernible role. In the second group, the Céline Flagship Store and the Franz Kraler’s Showroom can be considered to reflect the thoroughly planned construction methods; where all parts of each store are carefully and thoughtfully assembled. Lastly, the third group of projects includes the UR shop in Shanghai. These demonstrate how through the careful combination of
colours and materials, surprising atmospheres can be generated that take the customer through an experiential journey while in the store.

Figure 3: Renault Symbioz Smart Home. Source: https://life.renault.co.uk/concept-cars/symbioz-concept/.

Hidden hi-tech

Arguably, two of the more developed markets in which designers have developed high and smart technologies are the home and the car industry. Although Renault is not traditionally considered as a luxury car manufacturer, the authors considered it relevant to discuss the Renault Symbioz Smart Home in the context of the relationship between technology and luxury products. This prototype seamlessly combines instant and ubiquitous access to data, services and information with the notion of mobility and residence into a new hybrid product. Designed by Marchi architects in collaboration with Philips Lighting’s design team, the Symbioz autonomous hatchback car and
concept house was exhibited at the 2017 Frankfurt Motor Show. The car was conceived to be ‘electric, autonomous, connected and designed to be fully integrated in the human ecosystem’ (Renault 2018: n.pag.). Through the IoT, the car is connected to other cars; to all synced devices of the owner; and to the computer that regulates the smart home. These two products (house and car) were designed to be one extension of the other: ‘the Renault SYMBIOZ concept car was conceived as an extension of the home on the road, taking direct inspiration from both house and furniture design. The aim was to make sure the cabin was liveable like any modern home’ Renault (2017: n.pag.). When the car is on the road, it communicates with the house through the Internet. Conversely, when parked at home, the car becomes an extra room in the house, finding its place on the top of the cylinder that crowns the building. The two products are designed to be in constant dialogue; and work together as part of the same project. Very sophisticated technological elements combine both car and house into a seamless construct of the mind which is characterized by the exclusivity of the access to data from everywhere. These qualities are visible both as physical devices (the car, the building, the facades and the cladding of the car), and as invisible information networks (the data transmitted and received between car and house, the several databases, and programmes that allow the symbiosis to happen). More than a tangible symbol of achievement, this car epitomizes a new understanding of luxury, where the car is only one of the elements of a network of devices that includes mobile devices, a house, cloud computing and a pervasive information technology. The car is still perceived as a symbol of wealth, but no longer as the arrival point of a successful trajectory. The automobile is an appendix of a larger interrelated system of physical and digital objects that suggests power. A traditional sport car represents the possibility to run faster, and elegance, beauty and exclusivity. With this
project, such values are transposed into a new dimension where access and power are intended as a potentiality that the owner of this system can access at will.

**Sophisticated construction techniques**

The idea of invisible accessibility and subtle hint to power can also be noticed in more traditional retail environments. Visitors of the Céline Flagship Store in Miami designed by Swiss architect Valerio Olgiati may be surprised by the interior atmosphere. The entire space is clad with Brazilian Pinta verde marble, including ceilings, floors and walls. The extensive use of marble can be deceiving, as this material produces a surreal effect in those parts of the interior where it is least expected. For example, swirls and veins that characterize the panels used in the ceilings, generate a surprising visual effect that attracts shoppers and holds their attention. Added to this effect is the green and bluish atmospheric light that results from the reflection of the natural light on the marble surfaces. This creates a sophisticated and elegant visual appearance.

The extended use of marble contrasts with the presence of exposed concrete of the large columns, the steps and seating.

A similar use of materials and the contrast effect of combined elements that generates a unique level of sophistication, can be appreciated in the Franz Kraler’s Showroom in Toblach (Bozen, Italy) and designed by Studio Marastoni Architetti e Ingegneri Associati. Amongst several other projects designed for Franz Kraler, this showroom encapsulates probably the largest and most complex use of space. Adjacent to a local motorway and located between two other minor roads, this complex connects different height levels, several accesses, an existing early-1900s building, and a large central void, within the same project and within an area of 1300 square metres. The building
includes a range of locally resourced natural materials that are in turn emphasized by
the presence of a large 24-carat gold wall cladding feature. This wall is a symbol of
the relationship of building and nature, or the natural context, and references the
surrounding Dolomites. This wall is the central piece of the inner courtyard, whose aim
is to ‘offer a chance to focus on what we see every day without paying too much
attention’ The idea of subtle hint to power and access is here rendered through
visibility. On the one hand, the use of rich materials is quite explicit, making the
presence of certain element the centrepiece of the spatial composition (like, e.g., in
the Céline Flagship Store). On the other hand, such materials are rare and
sophisticated, and selected and used with extreme care and attention. This adds an
extra layer of interpretation to these spaces, as the customer is required to make a
bigger sociological effort to truly appreciate the nuances of these spaces. These extra
layers convey invisible messages through loudly visible elements and this dynamic is
even more explicit in the projects of following section.

The balanced use of colours and materials

The idea of using materials and atmospheric conditions to convey hidden messages
to shoppers is perhaps taken to an extreme in the UR Shanghai flagship store,
designed by Guang Dong-based DOMANI Architectural concepts. This store is
carefully designed in all its details and every part contributes to the overall
sophisticated atmosphere. The interior space is determined by perfect lines that divide
the different areas of the store; sudden changes of material from perfectly smooth
plaster to brickworks; and transparent surfaces that are used in the ceilings and the
counters. The overall subtle grey-toned atmosphere is punctuated by golden surfaces,
mainly used in the counters and seats. Mirrors and semi-translucent surfaces
positioned in strategic points of the space complete the overall appearance of the fashion brand, and natural and artificial lights are partially reflected, absorbed or deflected to emphasize the spatial qualities of the shop.

These projects demonstrate how new technologies play a substantial role in customer experience by being physically present in the store. Both brand managers and architects are increasingly reliant on adopting more advanced technologies to design and build new spaces and experiences for customers. Perhaps, the common thread in all these showrooms is the fact that these technologies are invisible to visitors. While their presence in the design and construction processes is concealed, their effect in terms of appearance and overall spatial experience is visible and engaging to all. In this case new technologies with their intrinsic complexity are extensively applied to achieve a high degree of simplicity.
The luxury of the golden

In opposition to the notion that luxury can be considered as something available to the masses (Nueno and Quelch 1998), this article suggests that the nature of luxury is evolving into a more abstract concept that is related to technology and our access to it. As such, the idea of visibility becomes the hinge around which luxury is produced and perceived, where items are collected and shown in a social context; as a representation of individual success (Vigneron and Johnson 2004). Increasingly, luxury is not directly seen and recognized, for example through patterns or symbolic materials, but subtly perceived through the invisible. Consumers no longer need to own, collect and show off their expensive and rare possessions. Instead they enjoy privileges over other members of the same community. The awareness of being able to access a service or specific information when needed or desired, is acquiring a level of importance over material and physical ownership. We define this phenomenon as the reification of luxury, which reinforces the notion of how luxury has transformed into a more concrete existence by an augmentation of abstractness. Technology is the main force that drives this shift from material to abstract. More specifically this refers to access to technology; intended in positional terms (information accessible from everywhere), typological terms (in the type and contents of the information accessed) and in visual terms (where access to luxury is no longer directly visible but open to a multitude of levels of perception).
Traditional characteristics of luxury (pre-digital) | New characteristics of luxury (digital)
--- | ---
1 | Rich use of highly recognizable patterns |
| Surfaces are anonymous, diaphanous and brand-less |
2 | Visible use of branding |
| Branding disappears almost entirely |
3 | Direct experience is key (see and touch objects) |
| Indirect experience and intelligibility |
4 | Emphasis on consumption and use |
| Emphasis on access and potentiality |
5 | Importance of location |
| Ubiquitousness |
6 | Value on uniqueness |
| Value shifts to replicability and continuous experience |
7 | Visible consumption |
| Visible sustainability |
8 | Emphasis on object and physicality |
| Emphasis on experience and perception |

**Table 1**: Attributes of luxury (from object to experience).

In this article we traced a number of attributes that seem today to increasingly qualify this new version of luxury that we defined as golden, in opposition to the traditional representation as gold. Table 1 summarizes these qualities and provides eight main points of how luxury has shifted, based on the growing use of ubiquitous technology.
The extensive use of highly visible patterns and textures to identify a specific brand is superseded by more anonymous surfaces and amorphous geometries (1) evident in the UR Shanghai flagship (Figure 4). The use of large logos and recognizable texts almost disappear (2) in favour of a familiar feeling and overall atmosphere, for example, in the Adidas flagship store in New York City. Here the three stripes are practically absent from the environment and an overall sense of street sport instead dominates. Direct experience is no longer the main goal (3). The understanding of luxury becomes subtle and customers are required to infer and make links by themselves to appreciate the experience. Often these links are informational and technological. Users are required to use a multiplicity of platforms to create the entire experience, for example, in moving from mobile devices to variations of in-store gadgets. The physical store and its location lose importance in the experience, while access to something more ethereal becomes key. The idea of access (4 in Table 1) from everywhere (5 in Table 1) is pivotal in understanding how the nature of luxury is changing. People want to perceive the power of doing, even if there is no action. The idea of potentiality and access is what is important in the experience. The Renault Symbioz Smart Home and related infrastructure is an epitome of this notion; where the user can access in-depth information related to this extended environment from any location, including the comfort of their own home. In many cases experience is no longer unique to or limited by the process of people having to travel to a specific location at a specific time to afford luxury. The experience is replicable (6), and fully accessible. Luxury is available on demand and whenever desired, through the infrastructural technology at people’s disposal, and can be repeated and sustained after access has been granted.
Finally, it can be argued that these days the emphasis of a new paradigm of luxury – from gold to golden – rests more heavily in perception than in direct and physical experience (8). The overriding concept of gradations of visibility (7) is a crucial factor in fully understanding and contextualizing this last point, because we hold that luxury is no more evident than in the complex gradations of visibility found in visually sustainable constructs (8).

References


____ (2018), Renault, “Frankfurt Motor Show: Renault presents its vision of the future”.


**Contributor details**

Dr Silvio Carta is an ARB RIBA architect and head of art and design at the University of Hertfordshire, where he is also director of the Professional Doctorates in Fine Arts and Design (DFA and DDES). His research and design interest focus on digital design and public space. Silvio is head of the editorial board of Seoul-based *C3* magazine

Pieter de Kock is an Australian registered architect with a master’s in urban design from the University of Westminster. He is experienced in a wide range of project types and sizes spanning several countries. Pieter is currently researching visual sustainability at the University of Lincoln.

Contact:

Silvio Carta  
School of Creative Arts  
University of Hertfordshire  
College Lane Campus  
Herts AL10 9AB - UK  
E-mail: s.carta@herts.ac.uk  
https://orcid.org/0000-0002-7586-3121

Pieter de Kock  
Lincoln School of Architecture and the Built Environment  
University of Lincoln  
Brayford Pool  
Lincoln LN6 7TS - UK  
E-mail: pprojexio3@gmail.com  
https://orcid.org/0000-0002-9982-4573

Note

1 Part of this article is based on a previous text: Carta (2019b).