Geographical proximity questioned

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INTRODUCTION

In geography the issue of proximity is addressed above all by economic geographers, particularly within the sphere of studies dedicated to agglomeration economies and to the diffusion of innovation (Dicken and Lloyd, 1990; Amin and Thrift, 1992; Markusen, 1996; Scott, 1998; Scott and Storper, 2003; Boschma, 2005; Asheim *et al.*, 2006; Maskell *et al.*, 2006; Bathelt and Glückler, 2011; Capineri *et al.*, 2013; Rutten, 2016). In these areas of expertise, economic geography intersects economy, in particular with the "new economic geography" (Krugman, 1991; Rodriguez-Pose, 2010), and, obviously, regional studies (Boschma, 2004; Capello, 2014; Torre and Wallet, 2014). Important results were attained, such as the question of path dependence, the phenomenon of lock in, and the so-called proximity paradox (Boschma and Frenken, 2010; Broekel and Boschma, 2012), to cite a few.

In a recent paper, Rutten (2016) radically criticises some aspects of the "proximities approach" adding that proximities "are the wrong metaphor to understand the socio-spatial dynamics of knowledge creation" (*Ibidem*, p. 168). As was stated earlier, the issues of innovation, its creation and its diffusion, are central to proximity studies. The criticism of Rutten lies at the heart of the proximity approach. He concentrates his analysis on four different points.

According to the author, the first contested point is that "the proximities approach has a simplicistic understanding of geography as near versus far". In his opinion, "being there" is not the only thing that counts: "being where", meaning the "quality of place", also matters (*Ibidem*, p. 167-168). Secondly, he claims that there are "too many overlaps" of the "various proximities" such as the conflating of individuals with organizational proximities (such as firms), "particularly when explaining social and institutional proximity". A third is the mistake of considering "codified knowledge as de-contextualized in order to create an artificial separation between the social and geographical contexts of knowledge creation" (*Ibidem*, p. 168). The fourth and last point is the

consideration of proximities as "static relational states" (*but see*: Balland *et al.*, 2015). Rutten makes a counterproposal for this criticism by suggesting a dynamic approach: in fact, "social dynamics"—distinct at both the micro-level and macro-level—"rather than proximities are responsible for reducing uncertainty and solving coordination problems"; therefore, "proximities are not inputs for knowledge creation but outcomes of social interaction" (Rutten, 2016, pp. 168-169).

Rutten further identifies two other dynamics that exist alongside the social ones: distance dynamics and place dynamics. "Instead of geographical proximity it is thus more accurate to speak of geographical dynamics [...] Understanding the geography of knowledge creation as interaction between place and distance dynamics explains where individuals choose to connect social space and physical space" (*Ibidem*, p. 170).

This chapter does not intend to respond to all of the criticism advanced by Rutten or to defend the "proximities approach", or, even less, to further explain the processes of construction and diffusion of innovation. Rather it is to take up the challenge posed by Rutten's stimulating intellectual provocations concerning proximity that call into question some of the fundamental concepts of geography: distance, space, and place. It is at this level that this paper is focused, yet with a twofold objective. The first aim is to place the idea of proximity within the same foundations of 'geographical thought', and the second one is to demonstrate that this concept, in reality, interests the entire discipline, not strictly economic geography. In this way, it is possible to reintegrate the issue of proximity back to areas such as social geography, political geography, and historical geography.

Up to now, proximity studies with regard to the geographical dimension have followed an approach that narrowly defines geographical proximity, a perspective that clearly separates any relational dimension from 'geographical stuff'. This choice does not facilitate a dialogue with human geographers who more and more are committed to studying the relational dynamics that unfold in space. Our theoretical proposal starts from the concepts of space and distance and ends with the possible impact it could have on the debate on proximities. Identifying different spatial proximities (absolute, relative and relational) can help to further define the crucial question of places in our globalised world.

The chapter is organized into four parts. The first section discusses interpretations of geographical proximity that were proposed by leading scholars in proximity studies. The second reflects upon the conceptions of space and how these concepts affect different ways of thinking about distance. The third section focuses on how distance is measured and represented. The fourth proposes geographical declinations of proximity and observes how a specific typology proposed can be useful while analysing space. In the conclusion, the focus is on place and the role that spatial proximities play in the construction and identification of places.

INTERPRETATIONS OF GEOGRAPHICAL PROXIMITY

Besides the specific contribution of economic geographers, the role of geography within the dynamics of proximity is evident from the fact that both fundamental schools of thought in this area of study, such as the French School (Rallet, 1993; Rallet and Torre, 1995; Torre and Gilly, 2000; Torre and Rallet, 2005) and the evolutionary geographical school (Boschma and Frenken, 2003; Boschma, 2005) cite geographical proximity as one of its key elements. Both schools identify a non-geographical proximity, yet with different characteristics. For the French school, geographical proximity can be placed alongside organized proximity (Torre, 2014), while Boschma (2005) adds four other types of proximity: cognitive, organizational, social and institutional.

For Boschma (2005, p. 71) it is essential that geographical proximity be defined "in a very restricted manner" as "the spatial or physical distance between economic actors, both in its absolute and relative meaning". By defining it so narrowly, it is possible to isolate it from the other dimensions of proximities for analytical purposes. In this way, it becomes possible to distinguish the specific contribution of the other proximities in reducing uncertainty, solving coordination problems and, consequently, facilitating interactive learning and innovations (Ibid., p. 62). Successive research proceeds to study in more depth the degree of correlation between different proximities, such as the geographical and the non-spatial (Malmberg and Maskell, 2006). Later studies by Hansen (2015, p. 1675), focus on "two mechanisms: the substitution mechanism, where non-spatial forms of proximity substitute for geographical proximity, and the overlap mechanism, where geographical proximity facilitates non-spatial forms of proximity".

A noteworthy contribution to defining geographical proximity was added by the scholars belonging to the French School. Even if their point of departure is similar to that of the Dutch School, namely, the distinction between absolute distance (kilometric distance) and relative (time/cost), Torre and Rallet (2005, p. 49) stress the subjective judgment of the individual who travels the distance, determined by both objective and perceptual elements.

Torre (2009, 2014) further identifies other aspects of geographical proximity. Firstly, he states that relative distance has three dimensions: the morphological space where activities take place, such as in the characteristics of the terrain; accessibility to transport infrastructures; and financial resources of actors. He further claims that if one regards geographical proximity as "neutral in essence", then its mobilization can only occur through the activities of economic and social actors. In other words, geographical proximity can be sought only if it is believed as useful (i.e., connected with positive externalities) or, on the other hand, unwanted due to adverse conditions (i.e., related to negative

externalities) (Torre, 2014, pp. 97-98). As regards the second case of unwanted geographical proximity, different types of interference emerge: a superimposition or overlap (competition for the same resources in the same space); contiguity (conflicts due to boundary disputes); and lastly, an unwelcome proximity due to unpleasant closeness (for example, industrial pollution) (Torre, 2009, p. 67). An economic actor can activate a form of geographical proximity that is either permanent (such as in the case of a stable co-location viewed as advantageous) or temporary. In fact, the French School introduced a significant insight that concerns this concept of temporary geographical proximity (Torre and Rallet, 2005; Torre 2009). Co-location is not necessary: the need for proximity of any given firm or organization can also be satisfied through a combination of connections provided by ITC (ubiquity) added to face-to-face meetings, which are favoured by rapid means of transport (mobility). These frequent meetings activate a temporary geographical proximity (Torre, 2009).

Torre's analysis of geographical proximity is articulated both in time (permanent / temporary) and in space (overlap, contiguity, unpleasant or useful closeness); it also facilitates understanding of different facets (objective and subjective) of the relative distance. However, in order to deal with the most recent approaches to geography, there remains a theoretical gap that needs to be addressed. In the eyes of a geographer, a spatial dimension is in fact also present in what the schools of proximity call non-geographical proximity. In this direction, Lagendijk and Lorentzen (2007, p. 459) pose the following thought-provoking questions: "How geographical is proximity? Or more precisely, what is the geographical nature of proximity?" Yet, in order to respond or at least attempt to respond to these questions, a broader geographical theoretical framework is needed.

SPACES AND DISTANCES

Nearness and its opposite, remoteness, are specifications of distance. In fact, distance is an essential attribute when thinking about space (Deza and Deza, 2009). In a certain sense, geography exists because of distance (Lussault, 2007, pp. 43-56): places, people and things are arranged within a distance, one at a certain distance, and others at another. There is a space between geographical objects: it is the *spatium,* a Latin term that separates architectonic elements in a building or, for example, the different movements of deployed armies (Elden, 2013). Prior to identifying a surface, an area, or a container, space is the distance between the objects; it is the interval that either detaches or connects them. Thanks to this interval of distance, the objects acquire autonomy; and moreover, thanks to this space, it is possible to study their uniqueness. They are distinct because they are distant. At the same time, space creates the possibility for relations: the interval between two architectonic elements is part of the whole; it contributes to the composition, the complexity of the endeavour, to

its balance. It is in this way that, for example, the distance between the movements of an army is what confers the organization and efficiency of a military manoeuvre. As Brunet points out, distance is the void that separates two palisades, literally an *intervallum* (2009, pp. 14-15). Space can be seen as the connecting tissue that—contemporaneously—links and divides places, people and things.

Having established the notion that distance is 'closely' related to space, the concept of space will now be analysed in depth using the scheme of Harvey (1973; 2006) that proposes a tripartition of space: absolute space, relative space and relational space (*cfr. also*: Garretsen and Martin, 2010, pp. 141-143; Rodriguez-Pose, 2011, p. 349). Descartes and Newton established absolute space as a fixed pre-existent grid that can be measured and used for calculations; in other words, a Euclidian space that can be represented by using geometric and geodetic maps. Relative space is associated with Einstein and non-Euclidian geometry: a space that changes depending on from which point one views the space and the conditions with which one faces it. Finally, relational space is constructed through social, economic and political processes. In other words, it is formed by the relationship that social, economic and political actors establish among them. However, for Harvey "space is neither absolute, relative or relational in itself, but it can become one or all simultaneously depending on the circumstances" (Harvey, 1973, p. 13). While absolute space is a fixed point that does not vary over time, change is a constitutive element in both relative space and relational space. In fact, in these two cases Harvey juxtaposes the concept of space with that of time, although in parenthesis, and defines it as absolute space, relative space (time) and relational space (time). Continuing in this direction, yet with even more emphasis, May and Thrift (2001) suggest an inseparable dyad that they term "TimeSpace": space and time are not connected but rather distinct, constituting instead one unique reality. Furthermore, in relational space there is an entanglement of social dynamics that renders even more fluid ways of thinking about space, and complicates even further the possibility to represent it. What results is a social co-production of time-space (with or without the hyphen).

Rethinking of distance and its relation to this tripartite distinction of space provides the starting point for the analysis. Table 1 illustrates this typology.

Type of space		Declination of distance	
Absolute space		Absolute distance	
			Contextual
			Territorial

TimeSpace	Relative	Relative distance	Organizational
			Hodological
	Relational	Relational distance	Psychological
			Positional

Table 1 Types of space and declinations of distance

Absolute distance is the collocation of two or more elements in absolute, geometric and Euclidian space. On the earth's surface, geographical coordinates of latitude and longitude identify every point: the distance between the two points is precisely calculable and does not vary over time.

On the other hand, relative distance varies depending on the different conditions of the elements concerned and how the subjects can deal with the space. Through analysis, it becomes possible to distinguish four types of situations that have an impact on relative distance: the contextual, the territorial, the organizational and the hodological.

The first condition—contextual—has a great influence, both the geomorphological and climatic (*see* Table 1). On one side, there is the geomorphological situation: the distribution of water and land, the altitude and the shape of reliefs, and the presence of rivers and lakes. On the other, we have the climatic conditions: the alternation of the seasons; the quantity and distribution of rainfall; the length of day and of night; the degree of insolation and temperature variation; the related vegetation … These contextual conditions are often taken for granted while, in reality, they have a significant impact on determining relative distance: one needs only to think how the distances in Sahel vary greatly depending on the dry or wet seasons; or for example the effect of blizzards in cities in the middle latitudes; or again, the difference between walking in the mountains or in a valley. Even in discussions on economy, attention has recently focused on these variables. For example, Sachs (2001), inspired by the neo-determinism of Diamond (1997), studied the distribution of the GDP (Gross Domestic Product) in different areas of the world using as a starting point geographical variables such as distance from the coast or from large navigable rivers and the climate. He found significant correlations among these variables and, in particular, identified a 'privileged' area in the middle latitudes if it was 100 km from the coast or near large rivers. At the time of his research, he found that in these zones more than half of the world's GDP was concentrated. Much criticism resulted from this research and more generally towards environmental neo-determinism (Sheppard,

2011). Certainly, within this current debate in economy, conditions related to geographical contexts have refound their legitimacy.

The second condition that should be considered is that territorial situations change over time and, with this, relative distance is redefined. As noted by Raffestin (1980), territorial situations are defined as anthropic interventions that modify and organize the earth's surface, for example: settlements, urban centres and industrial areas; networks for movement and communication; and administrative subdivisions and political boundaries. Moreover, Lagendijk and Lorentzen (2007, p. 460) observe that "geographical proximity is a product of the historically accumulated construction of transport infrastructures and of meeting places ... as well as ... the shaping of territorially bounded spaces". Relative distance transforms itself in accordance with territorial conditions. In particular, it assumes significant importance depending on the presence and quality of the circulation infrastructures, such as streets, trains, navigable canals, ports, airports …, and of the communication infrastructures (telematic and satellite networks …). It should be noted that these infrastructures require great investment both in terms of economic resources and in the length of time needed for their realization. In other words, there is a carry-over effect (path dependence) or a sort of obduracy (Hommels, 2005) that tends to privilege the areas where investments were made in the past. In this way, central and peripheral regions are put into place and stabilised over time, even if they are never fixed indefinitely and remain dependent on changes in economic and political relations.

A third condition—organizational—concerns the way in which mobility is structured (Cresswell and Merriman, 2008; Söderström and Crot, 2010), such as what means of transport is used and how the flow of goods, people and information are managed. In this setting, technological and logistic innovations are essential. Think of the impact of steam, which then lead to the construction of railways or the increased velocity of steamships compared with sailboats. For Farinelli (2004), the arrival of railways made the world smoother, compared to the earlier geo-physical rawness. It paved the way for the calculation of movement, an essential condition that allowed for an ulterior qualitative leap for industrial economies. Not to forget other milestones, such as: the advent of telecommunication technology, particularly in the construction of global information networks which permit simultaneous exchange of information; or finally, the logistics that are put into place for the transportation of goods, the role of freight containers, including ship containers, which allowed for operational homogeneity in different categories of the commodities sector (Levinson, 2006; Grappi, 2016).

If these three types of conditions have to do with material, broader phenomenon, the last condition that greatly impacts on relative distance is the specificity of individuals: 'who' has to deal with it. The hodological distance concept is borrowed from Janni (1984) who at that time refers to the studies

of Lewin (1934; 1951). The author applies the concept of hodological space (which derives from *hodós*, journey in Greek) to ancient cartography and travel descriptions: he observes how distance also changes depending on how a person assesses the journey and how a person deals with the effort involved. By placing hodological conditions into Table 1, it is suggested that the specific 'hard facts' of each individual undertaking the distance matters, such as: age, gender, health, economic resources, skills, citizenship and the consequent accessibility rights as a foreigner (e.g. the possibility to obtain visas).

Subjectivity (whether individual or social) is central in relational distance, that is, the distance determined by the subjects inside the social relationship, understood in its broader sense. Two types of relational distance can be distinguished: psychological distance and positional distance. The first one has to do with perceived distance generated by individuals (between oneself and the other) or by collective subjects (between us and others). The perceived distance could be thought as psychological distance, making reference to the construal-level theory (Trope and Liberman, 2010) and to its recent application to geography as proposed by Simandan (2016; 2019). The second one refers to the idea of a "relational field" proposed by Raffestin (1980), where it is possible to identify a positional distance. The latter indicates the reciprocal distance assumed by the subjects within their relationships.

In the construal-level theory "psychological distance is egocentric. Its reference point is the self in the here and now, and the different ways in which an object might be removed from this point – in time, in space, in social distance, and in hypotheticality" (Trope and Liberman, 2010, p. 440). In this way, perceived subjective distance overlaps with these "four intertwined dimensions of distance": spatial, temporal, social distance, and hypotheticality (Simandan, 2016, p. 250). As a result, what comes into play is the capacity of "being able to distance oneself from the here and now with the help of mental representations" (*Ibidem*, p. 251).

In fact, spatial distance is the first human experience of distancing and is useful as a metaphor for other forms of distancing. Temporal distance "is created any time one thinks about the past or about the future". Social distance "is produced any time a given individual begins to think about people other than herself, even if those people are in the here and now, i.e. spatially and temporally close". Hypothetically "occurs every time we engage in counterfactual reasoning. To evaluate how things would have turned out if only we had done something slightly different, we must leave the here and now of present reality and conjure up an imaginary world" (Simandan, 2016, p. 250).

As Simandan further notes, "We cannot simply extract spatial distance from its entanglement with the other three dimensions of distance". Consequently, there is a strong correlation among the four modalities of psychological distance. It is critical that man is able to establish the distance from the

here and now because the crushing reality of the present could be dangerous. As in past and present times, particularly with our quick-paced life, man is exposed to environmental pressures and may not be able to respond in the most efficient manner. For this reason, it is important to establish distance, to think ahead in regard to time and of space, to think of the differences with others, and to think about other possible realities. The capacity to plan and design projects is based on using these concepts of distance. At this time, "the more distant (in space, time, sociality, hypotheticality) the world conjured up in our imagination is, the more abstract is our mental representation of it" (*Ibidem*, p. 251). As a result, there are significant effects of one's perception of psychological distance and how they influence the judgments, the categorizations, the stereotyping, the decision-making, and the management of social conflicts (Trope and Liberman, 2010). In general, one can state that an object or a phenomenon at 'remote' distance is perceived in an abstract way, emphasizing the differences, while an object or a phenomenon at 'near' distance is clearer, more detailed, thus facilitating identification of contact points.

The second aspect of relational distance has to do with the reciprocal positions of the actors in the 'playground' of social power. If two or more actors enter into a relationship, new dynamics take shape with the opening of communication channels and with attempts to influence one another (Raffestin, 1980). This dynamic field is visible in all of the different relational situations (social, political, economic, cultural) yet with different scales, such as the micro-social scale (relations inside small groups) or the macro-social scale. In these diverse relational fields, the actors position themselves one from the other, identifying alliances and oppositions, bridges and barriers. If the first dimension of relational distance (the psychological one) has to do with a subjective construction of the perception and representation of distance, the second dimension regards the interactive and communicative exchanges among the actors: in other words, distance does not only have to do with subjective constructs but also with mediation which occurs when different subjects find themselves forced to interact with others and to negotiate their position.

In order for these concepts to became useful as analytic tools, it is necessary to verify if these distances are measurable and representable, which is what is discussed in the next section.

DISTANCE VALUES

The measurement and representation of distance constitute arguments of primary importance for geography (Gatrell, 1983; Brunet, 2009, pp. 17-27; Pirie, 2009; Gatrell, 2017; Grasland, 2018) and, obviously, not only for geography (cfr. Deza and Deza, 2009).

In Table 2 distance types are identified alongside descriptions of possible measurements and what representations can be constructed.

Distance types	Measurement of distance	Representations of distance
Absolute distance	Metric	Topographic maps
Relative distance	Amount of effort and commitment: exertion, cost, time	Thematic maps, topologic, anamorphic
Relational distance	Near/Far Desired/fearful *Continuum*: engagement-indifference-hostility Upper/lower	Descriptions, metaphors, symbols

Table 2 Types, measurements and representations of distance

As regards absolute distance, the measurement is easily identifiable: it involves using the metric system that calculates distance between two or more elements on a geometric plane. The first measure of distance was the human body itself: thumb, palm, arm, step … These measurements of distance highlight the 'egocentric' character of constructing distance. In modern times, a more scientific measurement was sought that was objective, such as a Euclidian distance: distance is measured in meters (the forty millionth part of the terrestrial meridian). The scale made it possible to transfer real distance measurements or measurements calculated with a geodesy to maps; the maps then allowed for the possibility to collocate all the selected geographical elements to the correct 'real' distance. Modern geography "refers to the Earth as something that is evident, meaning clear, and arranged accordingly on a horizontal surface" (Farinelli, 2003, pp. 8-10). In this space, "the unit of measure for distances" is a "standard linear metric interval" and, with the use of map projections, the units of measuring distance can be transferred from a sphere to a flat surface. The map projections interpret "the order of things by calculating the simple distance between them on a plane" (Ibid.).

With respect to relative distance, measurements shift depending on the different conditions (contextual, territorial, organizational, hodological). In this case, the unit of measure is established by the amount of effort needed to undertake the distance: obviously, the commitment is influenced

by conditionality. The two modes of measure proposed in literature are distance-time and distance-cost, meaning the time needed to cross the space that interposes itself between the two points, and the cost (or the effort) of facing the journey Factors such as mountains or bodies of water, accessibility to transportation networks and financial availability are just a few examples of how conditions can alter distance-time and distance-cost. In extreme cases, the times and costs can be endless and incalculable; consequently, overcoming the distance is not possible. Through the use of thematic maps (road, railways, nautical maps) and topologic/anamorphic maps, which take into account the alteration of space in function of the times and cost of the journey, it is possible to represent the ever-changing relative distance.

The measurement of distance becomes even more problematic when it refers to the relational dimension of space-time, which brings us to what Rutten contested regarding the concept of near and far in the proximities approach. For psychological distance, the discriminating factor is that which is respectively perceived as near and 'close at hand' with what is perceived as far and in a remote position. As Agamben notes (2017, p. 11), "*Tardus* [in Latin] signifies slow. […] *Praesto* signifies 'near, close at hand'. 'Late' is therefore that which our hands cannot in any way reach?" It appears that in regard to psychological distance, space and time (i.e. close at hand and immediacy, far and late) are inextricably connected. There is another dimension that is directly implicated with the emotions of desire and its opposite, fear (Brighenti, 2010; Simandan, 2019), or, in other words, with the perception of safety or danger. The attribution of one or the other of these emotional colourings can determine the thrust to a movement: if something is feared or if that fear is perceived as close, one will try to either move it away or move away from it; similarly, if something is desired yet is perceived as far away, an attempt will be made to either bring it closer or come closer to it. In other words, one tends to want what is safe and desirable near and moves away from what is dangerous or feared. Defining this distance is obviously not so easy, and it also depends on the different types of discourse: it can convey warmth for that which is near and cold detachment for that which is far; from metaphors that convey familiarity or hostility towards others and 'elsewhere', and from symbols that signify nearness and remoteness.

As regards instead positional distance, a good approximation for measuring it could be found in the *continuum*, which moves from one of full engagement in a given relationship, towards indifference and, finally, to non-involvement, or even to a sense of repulsion. Furthermore, within a specific relational field, an actor can also perceive himself as positioned higher or lower than the other actors, that is, as having more or less possibilities for exercising power.

GEOGRAPHICAL DECLINATIONS OF PROXIMITY

Based on the analysis of declinations of distance described earlier, it is possible to articulate our geographical point of view on proximity in more detail—thus demonstrating its usefulness—first of all, by providing a clearer conceptual explanation, and, second of all, by illustrating its function by relying on research in the field. It is possible to identify three categories of spatial proximity: absolute, relative ad relational (Table 3).

Type of distance	*Declination of spatial proximity*	
Absolute distance	Absolute proximity (contiguity, co-location)	
Relative distance	Relative proximity, that changes in accordance with:	1- geomorphological and climatic conditions (seasons and weather)
		2- agglomeration density, transportation networks, presence of thresholds and barriers
		3- means and management of movement and communication
		4- individual, but factual, conditions: physical condition, age, economic, political (citizenship); access to networks and nodes
Relational distance	Relational proximity	Psychological propinquity (surrounding reality)

		Positional propinquity (micro and macro scale)

Table 3 Types of distance and declinations of spatial proximity

Absolute spatial proximity is concerned with the contiguity of geometric space, which can be defined as co-location (two or more actors take control of the same space, either in the absence of absolute distance, or at a minimum). Relative spatial proximity depends on the following conditions: contextual (that is, the geomorphological context and the climate); territorial (with respect to the density of the residential settlements and productive agglomerations, to the networks of communication and movement, to the presence of administrative and/or political boundaries); organisational, that is the management of movement (the availability of means of transport and how mobility is organized); and finally, hodological, that is, individual conditions (concerning age, resources, requests for citizenship, and access to the networks of movement and of telecommunications) (Urry, 2002). Relative spatial proximity exists when the amount of the time-distance and cost-distance is at a minimum or somehow reduced, and access to the networks of communication and movement is readily available.

In turn, relational spatial proximity is expressed in terms of psychological propinquity and positional propinquity. The first identifies what Simandan terms "surrounding reality" (the here and now) and represents the interconnection between "spatial proximity, temporal proximity, social proximity, current reality" (*Ibidem*, p. 250), where, due to the dynamics described above, there is a tendency to overlap what is close to what is safe and desirable. Instead, the second one—positional propinquity—is dictated by the positional closeness and interacting flow between the actors, or rather the sharing of the same dynamic relational field. Positional propinquity can be understood both on a micro scale for interpersonal relationships or on a macro scale such as social, cultural, economic, and political relations. It has to do with the feeling of having power, with the desire to be close to others and with the perception of being, more or less, on the same social level as others.

By using this typology, five different cases were identified, each driven by the presence or absence of the various forms of spatial proximity (Table 4): an absolute contiguity without proximity (a); a proximity that is inactive/submissive/conflictual (b); a proximity that is active/desired/sought (c); a proximity without co-location (d); an absence of proximity yet with the potential for interconnectivity (e). For each case, specific examples relative to the subject of our study demonstrate how this table could be a useful tool for interpreting data collected in field research.

	Absolute spatial proximity	*Relative spatial proximity*	*Relational spatial proximity*
Case (a): *Absolute contiguity without proximity*	Yes	No	No
Case (b): *Inactive, submissive, conflictual proximity*	Yes	Yes	No
Case (c): *Active, desired proximity*	Yes	Yes	Yes
Case (d): *Temporary, virtual proximity*	No	Yes	Yes
Case (e): *Connection without proximity*	No	Yes	No

Table 4 Results: Presence or absence of different types of spatial proximity

The first (a) identifies the circumstances when physical contiguity does not correspond to either relative or relational proximity, clearly an extreme situation. An example could be a political enclave such as when West Berlin was isolated during the Cold War: a physical contiguity that precluded any form of connection, unless one crossed over the high, dangerous wall, not to exclude a great relational distance. Or alternatively, other cases could be military bases or maximum-security penitentiaries where access is forbidden to the local population. Another example that illustrates this case, is the physical contiguity that occurred when the great irrigation projects were installed in Sahel. The construction was entrusted to organizations from the Global North, bringing with them their own employees and supplies, thus creating an enclave that was separate and autonomous (Bertoncin and Pase, 2012).

With the second (b) and third situation (c), absolute and relative spatial proximity overlap. When these situations occur, an aureole of possible contact emerges, a dimension that creates the precondition for unexpected spontaneous relations to develop. What distinguishes these two situations is the absence (b) or the presence (c) of relational proximity.

Situation (b) has absolute and relative proximity, hence contiguity and interconnectivity, yet the distance is great for the actors at the relational level. As a result, there are situations of inactive proximity (two near realities with infrastructures well connected yet are not close from a psychological perspective and/or from a positional point of view, and actors regard themselves as distant); and of submissive proximity (when an actor feels subservient in the presence of another stronger actor, even to the point of being considered harassed). This could become a conflictual proximity at the moment when weaker actors develop active resistance, even this can be interpreted as signs of territorial development (Torre, 2015).

For example, case (b) can occur when large industrial plants that emit pollutants exist alongside populated residential communities. Research confirms this phenomenon with the existence of the great sugar factories on the Sudanese sugar belt: smoke fumes from the burning of canes after the harvest combined with the ashes of the sugar factories pollute the nearby villages, creating considerable health issues (Bertoncin *et al.*, 2017). For a long period of time, the local population has endured the effects of this proximity; in fact, recently forms of protest have given rise to what can be defined as conflictual proximity.

As regards situation (c), relational proximity links up with absolute and relative proximity. This overlapping of three types of spatial proximity has high potential, activating creative contexts suitable for the diffusion of innovation and a higher quality of everyday life. The closeness is intense and welcomed among the actors. A classic example of a superimposition of these three spatial proximities is the Italian industrial districts, the so-called "North-eastern model". This apparent coherence and cohesion should not, however, enchant: the dynamics of power also act in this situation, within families and small enterprises, in gender relations or in age differences, and also with respect to the waste of environmental resources, such as overexploitation of family labour or an excessive sprawl of industrial buildings (Hadjmichalis, 2006). While studying the delocalization of the "North-eastern model" in eastern European countries (particularly Romania), it becomes evident that the relational imbalances in those circumstances are very intense, even if often hidden, and the risks of dominance of powerful actors over weaker ones are frequent (Bertoncin *et al.*, 2009; Bertoncin *et al.*, 2018).

In situation (d) absolute proximity is missing, in other words there is not co-location. However, the other two types of proximity—relative and relational—are active. In these situations, the actors involved find a way to organise virtual proximity, thanks to opportunities made available to them

through global networks of telecommunications (Urry, 2002; Wilson *et al.*, 2008; O'Leary *et al.*, 2014; Aguilera *et al.*, 2015; Wook Chae, 2016), and temporary forms of proximity, as identified by Torre (2009). In our area of study, the work of the NGOs serves as an example of how virtual and temporary forms of proximity are able to connect local problems with distant experts, often through temporary visits during the implementation of development projects (Bertoncin and Pase, 2015).

Lastly, situation (e) represents the undifferentiated possibility of communication and circulation provided by ITC and modern rapid systems of mobility that, however, do not exemplify active proximity. The increasing development of "ubiquity" and mobility (Levy, 1991) does not necessarily mean that the dynamics of proximity are implemented (Torre, 2009). What is needed is an explicit willingness, a precise project that persuades the actors to make the effort to bridge the various distances in order to gain reciprocal access and to actively create and participate in the diffusion of innovation.

CONCLUSIONS

Rutten's criticism regarding the proximities approach was the initial stimulus for placing the idea of proximity in a dialogue with some of the fundamental concepts of geography, namely, space and distance. The point of departure is the concept of space with a tripartite dimension as elaborated by Harvey (1973; 2006). Distance is declinable for every type of space, making these distinctions: an absolute distance; a relative distance, which is conditioned by four different variables (contextual, territorial, organisational, hodological); and a relational distance, distinguished by a psychological and positional distance. It is possible to measure and represent these distances, even if in very different ways. After having explained and connected these concepts of distance, the geographical concept of proximity was revisited, citing three types: absolute, relative and relational spatial proximity. The presence or absence of the three types of spatial proximity in certain given situations is relevant. In this way, it was possible to identify five different conditions: an absolute contiguity without proximity, a proximity that is inactive/submissive/conflictual, a proximity that is active/desired/sought, a proximity without co-location, and one that has potential for interconnectivity, yet without actual activation.

These varying conditions, driven by the presence or absence of these three types of spatial proximity, can be applied not only in the field of economic geography, but also to other facets of human geography and, in particular, to those that deal with political, social and cultural dimensions and with evolution of territories over time. Through an in-depth analysis of spatial proximity, it is possible in fact to enrich the idea of place—another fundamental category—which appears to be strategic in

contemporary geographic thought (Tuan Y., 1977; Agnew and Duncan, 1989; Massey and Jess, 1995; Casey, 1997; Berdoulay and Entrikin, 1998; Cresswell, 2004; Massey, 2005).

The different geographical declinations of proximity analysed in this chapter allow for the possibility of defining place with analytic precision: it identifies a local situation that connects absolute spatial proximity with relative spatial proximity, one that was earlier described as an aureole of contact, i.e., a preferential setting where relations among actors can be enhanced, a fertile condition for social interaction and expansion of relations (even unexpected), that is, if the psychological and positional distances are minimal or reduced. At that point, "place" can be understood in the full sense of the word. When all of the three spatial proximities flow together, they then form a context that is self-identifiable and recognisable for its uniqueness. This distinctive context is historically shaped by a specific interaction between environmental, territorial, socio-cultural and economic processes, even if the internal relations of power between actors are changing over time. Yet in this time of neo-liberal globalisation, what emerges is a dynamic that challenges the strength of places. In the language of scholars of proximity, one can compare catchwords such as "local buzz" and "pipelines" (Bathelt *et al.*, 2004). In order to avoid the risks of lock-in—because this context could be actually "vibrant" and able to create possibilities for innovation and to absorb stimulation from the outside—it is critical that "local buzz" remains open to the global "pipelines". This 'opening' is assured by exploiting the opportunities of virtual and temporary geographical proximities, that is, through the deployment of the possibilities given by ubiquity and mobility (Torre, 2009; 2014). Only in this case, is there a full activation of all of the meanings and potentialities of "place". In this sense, Massey talks about a "global sense of space" to indicate the construction of places through social relations, always more extended and interconnected (Massey, 2005). On the contrary, if the relational—psychological and positional—distance with the 'elsewhere' tends to increase, and if "global pipelines" are interrupted or closed down, or if there is an inability to access them, the sense of place is weakened and with it the capacity to create innovation.

It seems that this definition of place, constructed by utilizing the geographical declinations of proximity, can lead to useful insights also relative to "place-based" policies (Barca *et al.*, 2012).

In this way, the challenge of Rutten can be faced and this analytic proposal becomes practical as a means of articulating a geographical concept of proximity and of further elucidating some fundamental processes of spatial transformation. From this point of view, proximity dynamics are exactly at the point of conjuncture of "distance dynamics" and "place dynamics". Unlike what Rutten maintains (2016), if appropriately relocated within the context of geographical concepts of space and distance, proximity proves to be crucial precisely in defining the "quality of place".

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