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Chapter 5

Resources—A Historical and Conceptual Roadmap

Daniel Hausmann and Nicolas Perreaux

I. Introduction

In the past decades, resources became a growing, important field of research within the humanities and social sciences.¹ Nowadays, resources are everywhere in the mass media, and everything, at least so it seems, could, potentially, be a resource. However, the significance of the term and concept of “resource(s)” for research in the humanities remains unspecific, and an accurate explanation of the term and its history is still nowhere to be found.² Treading along this path without a conceptual map may, indeed, leave historians or social scientists unmindful of their position in relation to this trend. In fact, most research on resources comes from the field of economics, and, by appropriating this concept from economics, social

¹ This chapter has benefited from the feedback of several researchers, including Iwo Amelung, Alain Guerreau, Hartmut Leppin, Christian A. Müller and Joseph Morsel. We are grateful to them for their ideas. Naturally, there had already been popular research about resources in the past decades, for example, the resource-mobilisation approach in the 1970s: McCarthy et al. (1977), *Resource Mobilization and Social Movements*. Nevertheless, the amount of research into “resources” has grown quickly during the 1990–2018 period. Two recent cases in History include: Flachowsky et al. (2017), *Ressourcenmobilisierung* and Bühler-Thierry et al. (2017), *Acquérir, prélever, contrôler: les ressources en compétition (400–1100)*.

² Outside of Economics, none of the dictionaries of human or social sciences that we have consulted contain an entry for the word “resource”: Lacey (1996), *A Dictionary of Philosophy*; Wilczynski (1981), *An Encyclopedic Dictionary*; Seymour-Smith (1986), *Macmillan Dictionary of Anthropology*; Iannone, *Dictionary of World Philosophy*; Boudon et al. (1989), *A Critical Dictionary of Sociology*; Audi, *The Cambridge Dictionary of Philosophy*; Bunnin et al. (2004), *The Blackwell Dictionary of Western Philosophy*; Atkinson et al. (2005), *Cultural Geography: A Critical Dictionary of Key Concepts*; Protevi (2005), *The Edinburgh Dictionary of Continental Philosophy*; Bruce et al. (2006), *The Sage Dictionary of Sociology*; Turner (2006), *The Cambridge Dictionary of Sociology*; Morris (2012), *Concise Dictionary of Social and Cultural Anthropology*; Foulquié et al. (1969), *Dictionnaire de la langue philosophique*; Lalande (1926/1992), *Vocabulaire technique et critique de la philosophie*; Bröckling et al. (2004), *Glossar der Gegenwart*.

scientists and historians might bring undesired implications into their own fields. The goal of this chapter is thus, first, roughly to sketch the history of the term “resource(s)”, and second to analyse how an economic understanding of the term came to dominate by the twentieth century. Our objective is in no way to present a definitive solution to the problem that we wish to address; it is more a matter of showing that the analysis of the multiple concepts used in the human and social sciences very often opens perspectives, and that the history of “resource(s)” is particularly interesting. This short chapter therefore invites other studies, which could focus not only on the term alone, but also on the words which form its semantic *entourage* (i.e., collocations); hence, the concept necessarily draws its meaning and strength.³

This essay traces the conceptual history of “resource(s)”, in order to clarify its implication and possible usages.⁴ A brief probing into the development of the term and its current usages shows that the period of the industrial revolution (eighteenth–nineteenth centuries)⁵ marks a significant shift in the understanding of the term “resource” as well. With the spread of industrial capitalism, the notion of “resources” came to denote primarily “exploitable nature”,⁶ whereas previously it had meant an inner strength. From the late nineteenth century, economics aspired to be a rigorous science, a trend which intensified in particular after WWII because of its mathematisation, in particular because of the invention of game theory around 1944.⁷ Then, after WWII, the concept of “resource” was step-by-step extended literally to all areas of human and social life by means of terms such as “human capital” or “social capital”. By thus extending the term “resources”, economics was presented as the most suitable candidate to unify the social sciences and the humanities. Edward Lazear (b. 1948), for instance, claims that “the goal of economic theory is to unify thought

3 Trier (1931), *Der Deutsche Wortschatz im Sinnbezirk des Verstandes*; Schmidt (1973), *Wortfeldforschung*; Klemperer (1947), *LTI*.

4 For paradigmatic works in conceptual history, see Koselleck (1979), *Historische Semantik und Begriffsgeschichte*; Koselleck (2006), *Begriffsgeschichten*; Gumbrecht (2006), *Dimension und Grenzen der Begriffsgeschichte*; Morsel (forthcoming), *La production circulation d'un concept*.

5 Verley (1997), *L'Échelle du Monde*.

6 About the concept of “nature” in our contemporary thought (which he describes as a “Naturalist Ontology”), see Descola (2013), *Beyond Nature and Culture*, Chapter 8: “The Certainties of Naturalism”.

7 The classic reference is Neumann et al. (1944), *The Theory of Games and Economic Behavior*. For a critical history of game theory in economics, see Amadae (2015), *Prisoners of Reason: The Cold War Origins of Rational Choice Liberalism*.

and to provide a language that can be used to understand a variety of social phenomena”.⁸ Some economists even argued that this constitutes an “invasion” or a sort of “economic imperialism”.⁹ It is, of course, useful that the human and social scientists become aware of the role played by the term in economics, in order to give a more global, but nevertheless precise, definition of the concept, proper to the analyses of “resources” in the other scientific fields. This chapter serves the purpose of sketching its dynamics and historical background. Its core features are two crucial shifts: first, the re-location of resource(s) from the inner self to the outer world, and the concomitant shift from the singular (resource) to the plural (resources); and second, the expansion of the economic understanding of the term to virtually all domains of society and life following the experiences of the post-WWII period.

II. Resource, a Historical Semantics

1. Latin Etymology and the *Resurrectio* (Antiquity–Twelfth century)

Without going back unnecessarily to the Indo-European roots of the term, the etymology of *resource* refers to the Latin verb *resurgo* (-ere), which means to arise from, to resurrect, to get up, or to recover.¹⁰ In contemporary French, many verbs still derive from it, including “*sourdre*” (to rise up) or “*surgir*” (to arise). Naturally, *resurgo* is not an uncommon Latin word, especially during the Middle Ages. First, the term appears up to 70 times in its different forms of conjugation in the *Vulgata*.¹¹ This score should be com-

8 Lazear (2000), *Economic Imperialism*, 142. On the opposite side, for historical and anthropological perspectives about the role of economy in societies, see Polanyi (1944), *The Great Transformation*; Godelier (1972), *Rationality and Irrationality in Economics*; Sahlins (1974), *Stone Age Economics*; Baschet (2014), *Adieux au capitalisme*. Becker (1976), *The Economic Approach*; Hirschleifer (1985), *The Expanding Domain of Economics*; Swedberg (1990), *Economics and Sociology*; Grossbard-Shechtman et al. (2002), *The Expansion of Economics*.

9 Fine et al. (2009), *From Economic Imperialism*.

10 Gaffiot (1934), *Dictionnaire*, 1355; Parisse et al. (2006), *Lexique latin-français*, 583; Baier et al. (2012), *Der Neue Georges*, 4164–4165; Lewis et al. (1879), *A Latin Dictionary*.

11 With these numbers of occurrences: *resurrexit* (16), *resurget* (11), *resurgere* (7), *resurgunt* (7), *resurgent* (6), *resurgat* (4), *resurgant* (3), *resurrexit* (3), *resurrexint* (2), *resurrexero* (2), *resurrexisset* (2), *resurrexisset* (2), *resurgam* (1), *resurgemus* (1), *resurgens* (1), *resurrecturos* (1), *resurrexisset* (1). Regarding the role of the Bible for Medieval Latin, see Lobrichon et al. (1984), *Le Moyen Âge et la Bible*; Lourdaux et al. (1979), *The Bible and Medieval Culture*; Fontaine et al. (1985),

pared with another one obtained from a corpus of ancient/classic texts which contains more than six million words, 8.5 times larger than that of the *Vulgata*.¹² It ranges from the third century BC (with, for example, Plautus [254 BC–184 BC] and Marcus Porcius Cato [234 BC–149 BC]) to the first and second centuries AD (with Juvenale [c. 60–127] or Apuleius [124–170]).¹³ In this database, there are only 74 mentions of *resurgo*.¹⁴ The verb is associated and/or connotated¹⁵ with war (*bellum*), especially with the Trojan War (*Troja*), astronomy, cycles, and time (*rursum*, *iterum*, etc.).¹⁶ Famous Roman poets seem to have used the term first, including Horace [65 BC–8 BC], and then Virgil [70 BC–19 BC], Titus Livius [c. 64 BC–17 AD], Propertius [c. 50 BC–c. 15 BC], and Ovid [43 BC–c. 18 AD].¹⁷

Even so, the term *resurgere* becomes more frequent only in the *Vulgata*, especially in the New Testament. Of the total biblical references only 13 are found in the Old Testament, compared to 67 in the New Testament.¹⁸

Le monde latin antique, Guerreau (2001), *Vinea*; Kuchenbuch et al. (2006), *Textus im Mittelalter*; Dahan, *Lire la Bible au Moyen Âge*, Nelson et al. (2015), *Reading the Bible*.

12 These texts have been drawn from various websites, mostly The Latin Library (<http://www.thelatinlibrary.com/>) and the Classical Latin Texts (<http://latin.packhum.org/>). This corpus contains 948 files.

13 The *Vulgata* is about 730,000 words.

14 All the corpora used here have been lemmatised using the TreeTagger software and the parameters generated by the ANR Omnia (<http://www.glossaria.eu/treetagger/>), see Bon (2009), OMNIA (1); Bon (2010), OMNIA (2); Bon (2011), OMNIA (3)).

15 These associations are revealed by the computation of co-occurrences, i.e., the lemmata that appear in the same context as *resurgere*. The calculation has been made via the TXM software. See Heiden (2010), *TXM Platform*. Heiden et al. (2010), TXM used a span of 5 words before and after *resurgere*.

16 Marcus Velleius Paterculus, *Historiarum Libri Duo* 2.87: “*Hic speculatus est per summam quietem ac dissimulationem precipitis consilia iuuenis et mira celeritate nullaque cum perturbatione aut rerum aut hominum oppresso Lepido inmane noui ac resurrecturi belli ciuilibus restinxit initium.*”; Seneca, *Cons. Helun* 9.8: “[...] *donec fratre eius capto regressus est, properantius tamen quam ex utilitate sociorum, relicto per quos resurgeret bellum*”; Tacitus, *Ann.* 3.74: “*Nunc ecce trahit illum ad se Africa resurgens belli minisplena [...]*”; Ovidius, *Rem. am.* 281–282: “*Que tibi causa fuge? non hic noua Troia resurgit, Non aliquis socios rursus ad arma uocat.*”

17 Horace, *Odes* 2.17.13–14: “*Me nec Chimaerae spiritus ignea, si resurgat centimanus gigas, dinellet unquam*”; Virgil, *Aeneid* 1.203–206: “*Per uarios casus, per tot discrimina rerum tendimus in latum; sedes ubi fata quietas ostendunt; illic fas regna resurgere troie.*”; Livius, *Historiarum* 24.45.3: “*Quia res romana contra spem uoluptate eius uelut resurgere ab stirpibus uideatur, nouam referre proditorem proditis pollicetur*”; Propertius, *Elegies* 4.85–88: “*Quid moueant pisces animosaque signa leonis, lotus et besperia quid capricornus aqua. dicam: “Troia cades, et Troica Roma, resurges” et maris et terre longa sepulcra canam.*”; Ovid, *Metamorphoses* 2.453: “*Orbe resurgebant lunaria cornua nono, cum de uenatu fraternis languida flammis, nacta nemus gelidum dea, quo cum murmure labens ibat et attritas uersabat riuis barenas?*”

18 With 31 occurrences within the Four Gospels alone.

If *resurgere* still remains a relatively rare lemma (for example, *terra* and *aqua* are met 3,153 and 707 times, respectively), it expands considerably during the first and second century AD, in direct relation to the resurrection of Jesus Christ.¹⁹ The main collocations of *resurgere* are then *mortuus* (32 co-occurrences), *dies* (14), *Christus* (13), *tertius* (10), *morior* (6), *occido* (5), and *cado* (5).²⁰ This lexical shift, occurring during the early rise of Christianity, inaugurates a new semantic era due to last for centuries, in which the verb is no longer associated with war and/or cycles, but first with a character (Christ) and his resurrection, as well as the ascending movement that allows his terrestrial death.²¹

<i>Co-occurent</i>	<i>Frequency</i>	<i>Co-frequency</i>	<i>Co-efficient</i>	<i>Average Distance</i>
<i>mortuus</i>	435	32	46	1,2
<i>tertius</i>	222	10	12	0,9
<i>christus</i>	604	13	12	1,8
<i>resurrectio</i>	51	4	6	2,8
<i>dies</i>	2655	14	5	0,9
<i>oporteo</i>	122	4	4	3,8
<i>adicio</i>	43	3	4	1
<i>morior</i>	481	6	4	2,5
<i>occido</i>	334	5	4	4,4
<i>surdus</i>	14	2	3	3
<i>cado</i>	429	5	3	2,4

19 Léon-Dufour (1970), *Vocabulaire de théologie biblique*, 1100–1109; Hamman (1975–76), *La résurrection du Christ*, 292–318 and 1–24; Stubenrauch (2006), *Anferstehung des Fleisches?*, 147–156; Leclercq (1948), *Résurrection de la chair*; Guilbert (1975), *Résurrection*; Villette (1957), *La resurrection*; Mainville et al. (2001), *Résurrection*.

20 Some examples: “*Ceci vident, claudi ambulat, leprosi mundantur, surdi audiunt, mortui resurgunt, pauperes evangelizantur et beatus est, qui non fuerit scandalizatus in me.*” (Matt 11:5); “*Et coepit docere eos quoniam oportet Filium hominis pati multa, et reprobari a senioribus, et a summis sacerdotibus et scribis, et occidi et post tres dies resurgere.*” (Mar 8:31); “*et dixit eis quoniam sic scriptum est et sic oportebat Christum pati et resurgere a mortuis die tertia.*” (Luc 24:46), etc.

21 “*et nemo ascendit in caelum nisi qui descendit de caelo Filius hominis qui est in caelo.*” (Jn 3:12).

<i>dormio</i>	227	4	3	3,2
<i>dispario</i>	19	2	3	4,5
<i>nubo</i>	24	2	3	3,5
<i>immuto</i>	31	2	3	3,5
<i>postquam</i>	182	3	2	0,3
<i>discipulus</i>	186	3	2	4,3
<i>euangelizo</i>	47	2	2	2
<i>crucifigo</i>	50	2	2	4

Figure 6: Main collocations for *resurgo* in the *Vulgata* (TXM-Textométrie)

This christic meaning remained dominant in the Latin literature of the Middle Ages. Within the corpus of the *Patrologia latina*, which is still the largest collection of digitised medieval texts to date,²² *resurgo* refers mainly to the resurrection of Christ, but it also refers to that of Lazarus and the rise of the bodies during the Last Judgment. A semantics analysis of the 17,000 references to this lemma in this heterogeneous but nonetheless representative corpus reveals three main groups of collocations, and thus meanings: first, Christ himself (*Christus*, *crucifixus*, *crucifigo*, etc.), then flesh and its corruptible or incorruptible nature (*corpus*, *caro*, but also *mortalis/immortalitas*, *corruptibilis-corruptio/incorruptibilis-incorruptio*, etc.), and, finally, the possibility of rising from the dead (*Lazarus*, *surgō*, *sepulcrum*, *dormio*, *resuscitatio*, *infernum*).²³ While the frequency of the lemma is relatively stable in *Patrologia latina*, with only two noticeable, but slow declines during the fourth-fifth and ninth-eleventh centuries, man (*homo*), soul (*anima*), and sin (*peccatum*) become increasingly important in the semantic neighbourhood of *resurgere*. The resurrection thus progressively became a personal stake: it was a matter of saving one's soul, of spiritual rebirth, of emerging from an internal crisis.²⁴

22 The *Patrologia Latina* contains about 100 million of words, with texts ranging from Tertullian [c. 155–c. 240] to Pope Innocent III [1198–1216 for his papacy].

23 Guilbert, *Résurrection*, 998, insists on the following themes that gravitate around the resurrection of Christ in the Christian thought: death/life, flesh/spirit, earth/sky, bottom/up, and presence/absence.

24 Walker Bynum (1995), *The Resurrection of the Body in Western Christianity, 200–1336*; Brown (2015), *The Ransom of the Soul*.

2. Vernacular Evolutions (twelfth–seventeenth centuries)

It was in this context that the first vernacular occurrences of a derivative of *resurgo*, that is to say, “*ressource*”, slowly appear around the twelfth–thirteenth centuries in Old French and then in Middle French.²⁵ A first reference can be found in the *Chronicle of the Dukes of Normandy* written by the troubadour Benoît de Sainte-Maure around the year 1174.²⁶ The text relates to a critical situation between feudal lords and the lack of means to overcome it.²⁷ It also appears in the *Roman de la Rose* by Guillaume de Lorris and Jean de Meung, c. 1230/1235–c. 1275/1280 and evokes the idea of personal treasures.²⁸ At the same time, a few words deriving from *resurgo* appear: *ressours* (substantive), *ressourdre* (verb), *ressourte* (substantive), *résurrexi* (verb), *resordre* (verb), *resordement* (substantive), *resorce* (substantive), and, finally, *resors* (adjective).²⁹ What they all have in common is that they evoke actions or other means that permit one to recover from a crisis, or for one to emerge/re-emerge, to rise, and sometimes even to fly.³⁰ The dictionary of Old French by Godefroy gives the following definition:

“RESOURS, ress., s. m., jaillissement (breakthrough), abondance (abundance), [...] renouvellement (renewal).”³¹

25 For this question, see Auroux et al. (2001), *History of the Language Sciences*; Ernst et al. (2003–2009), *Romanische Sprachgeschichte*.

26 For the edition of the Chronicle, see: Fahlin (1951), *Chronique des ducs de Normandie par Benoît*; Michel (1836–1844), *Chronique des ducs de Normandie par Benoît*. It is probable that the Chronicle was ordered by Henry II of England [1154–1189 for his reign]. See also: Blumenfeld-Kosinski, Benoît de Sainte-Maure.

27 “*Que de France n’avoit resorse, Force n’aie ne rescosse.*”, in Michel (1836–1844), *Chronique des ducs de Normandie par Benoît*, 92, v. 17984–17985.

28 “*Car ainz que soit vuiz mes tresors, denier me vient a resours.*”, in Lecoy (1965–1970), *Guillaume de Lorris et Jean de Meun*, v. 11532–11533.

29 In order to define this list, we have used: Godefroy (1891–1902), *Dictionnaire*; Godefroy (1898–1901), *Lexique*; De la Curne de Sainte-Palaye (1875–1882), *Dictionnaire*; Greimas (2012), *Dictionnaire*, but also Wartburg (1922–1967), *Französisches Etymologisches Wörterbuch*. The following websites were also very useful: <http://www.atilf.fr/dmf/> (*Dictionnaire du Moyen Français, 1330–1500*); <http://www.cnrtl.fr> (*Centre National de Ressources Textuelles et Lexicales*). A very rich database of Old French texts was also used for our research: <http://bfm.ens-lyon.fr/> (*Base de français medieval, TXM*).

30 For example: “*Deus est prodrom, qui nos gouverne et paist, S’en conquerront enfer qui est punais, Le malvais puiz, dont ne resordront mais.*”, in an anonymous text of the XIIth century: *Le Couronnement de Louis. Chanson de geste publiée d’après tous les manuscrits connus*, Langlois, 1888, IV:35.

31 Godefroy (1891–1902), *Dictionnaire*, vol. VII, 108, col. 1.

The vernacular term *ressource* is thus originally a term designating the possibility of using personal capacities in order to overcome a crisis and to renew oneself. The Latin idea of resurrection has thus evolved into *ressource*, but the word still retained part of its original Biblical meaning: “resource” carried the meaning of a personal character, appeared predominantly in the singular form, and very often remained linked to a moment of weakness.

This meaning appears to have been more or less stable during the period from the thirteenth to the sixteenth centuries,³² even though references to coins and money progressively developed during this period. For instance, in his *Quadriologue invectif* (1422), Alain Chartier [c. 1390–c. 1430] used the word on several occasions, most of the time in relation to the question of rebirth and salvation.³³ Nevertheless, the semantics of the word was also progressively extended to institutions, communities, and social groups. At the end of this period, for example, Agrippa d’Aubigné (1552–1630) wrote in his *Histoire universelle* (1616–1630) of the “*ressource de l’Eglise* (the resource of the Church)”.³⁴ However, even during the sixteenth century, the semantics of the term remained strongly linked to its Christian roots.

3. From singular to plural (mid-eighteenth c.–mid-twentieth c.)

It is during the eighteenth century that a radical change took place in the meaning of the term and where its contemporary significations appeared. In order to analyse this phenomenon, we have used the Google NGram Viewer based upon the Google Books database.³⁵ It allows the generation of chronological charts showing the usage of a term or a group of terms in

32 Huguet (1925–1967), *Dictionnaire*, vol. VI, 550–551 indicates these main semantics elements for the sixteenth century: “Relèvement, redressement, renaissance”, “renaître”, “salut”, “revanche, reparation”, “soulagement, guérison”, “reprise de ce qu’on a dépensé”, “celui qui relève”, “source”, “rebondissement”.

33 “[M]ais aux travaillans saiges et curieux adviennent de don des cieulx et de leur pourchaz les prosperitez et les ressourses” (Chartier (1422), *Le Quadriologue invectif*, 13); “[E]n querant vostre ressource et relievement” (Chartier (1422), *Le Quadriologue invectif*, 14); “Haa, Dieu tout puissant, se tous ceulx qui a ce se soubtillent joignissent ensemble leurs entendemens a chercher la ressource de leur seigneurie, ilz gaignassent a la prosperité comme le salut de leurs estas et de leurs vies” (Chartier (1422), *Le Quadriologue invectif*, 32).

34 “Toutes ces choses maintenues dans les conciles, dans les prisons et dans les feux, le livre des tesmoins de la verité a esté facile jusques à la première ressource de l’Eglise par les Albigeois.”, in Aubigné (1553–1559), *Histoire universelle*, t. II, 5.

35 <https://books.google.com/ngrams>

a given language during a specific time frame (see Figures 1, 2 and 3).³⁶ The existence of national corpora (here: English, French, German) makes it possible to compare specific trends and correlate them to the intellectual and social conditions peculiar to these countries.³⁷ The corpus used by Google Ngram was generated in 2008 and 2012: it contains more than 450 million words.

The NGram-Viewer carries different well-known biases that must be addressed first.³⁸ Initially released in December 2010, the database used non-proofread digitised texts (known as dirty OCR).³⁹ These *optical character recognition* (OCR) programmes induce mechanical errors, which can sometimes distort the interpretation of lexical trends.⁴⁰ In the case of the concept of “resource”, the margin of error is indeed slim: the word is so frequently used that these errors do not influence the systematic structure of the graphs. The second bias is related to the documentary typology itself. Since Google has built its collection by digitising libraries, the structure of the corpus depends on the book sample. Nevertheless, the sample is large enough to allow for a statistical generalisation. The last bias is probably the most serious for our survey: the recording of metadata and particularly the metadata concerning chronology. An analysis of the data generated by our request shows that some works are sometimes poorly indexed, especially in or for the fifteenth to eighteenth centuries. In our case, however, this problem plays a minor role: first, because the analysis for the oldest period of our survey has been achieved with other corpora/databanks (see above); secondly, because the observed trends are so obvious that they remain valid, granting a generous error margin.

An examination of the Google Books corpora (English, French, and German) reveals two main lexical structures: (a) a considerable development of references to “resources” (in general) during the period from the

36 Moretti (2005), *Graphs, Maps, Trees*; Moretti (2013), *Distant Reading*.

37 The Spanish use is different and would merit a special treatment which cannot be achieved in this chapter: the vernacular word for ‘resource’ is ‘*recurso*’ which derives from the Latin “*recursus*”.

38 Michel et al. (2011), *Quantitative Analysis of Culture*; Lin et al. (2012), *Syntactic Annotations*; Pechenick et al. (2015), *Characterizing the Google Books Corpus*; Hellrich et al. (2016), *Bad Company*.

39 Price-Wilkin (1997), *Just-in-time Conversion*; Guerreau (2011), *Pour un corpus de textes latins*; Willett (2004), *Electronic Texts*; Strange et al. (2014), *Mining for the Meanings of a Murder*; Price (2016), *Social Scholarly Editing*; Cordell (2017), *Q i-jtb the Raven*; Schreibman et al (2015), *A New Companion to Digital Humanities*.

40 Especially in the case of the letter “s”, which can sometimes be turns into “f” or “p” by the OCR (for example in the case of 17th-18th typographies).

eighteenth to the twenty-first century, albeit with considerable chronological and national variations, and (b) the emergence and the growing importance of the plural form (*resources*) over the singular one (*resource*), starting from the eighteenth century in the French and English corpora. Indeed, the ratio between the singular and the plural forms of “resource(s)” does not cease to diverge in favour of the latter, especially after the Second World War (*Figure 1–4*).



Figure 7: Corpus Google Books “French”. Frequencies for ressource and ressources, 1700–2002 (smoothing of 3)

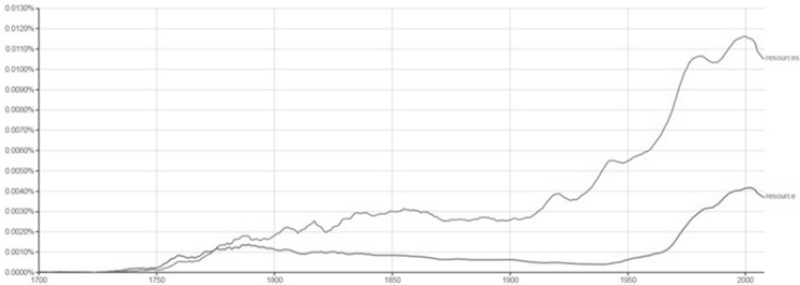


Figure 8: Corpus Google Books “English”. Frequencies for resource and resources, 1700–2002 (smoothing of 3)

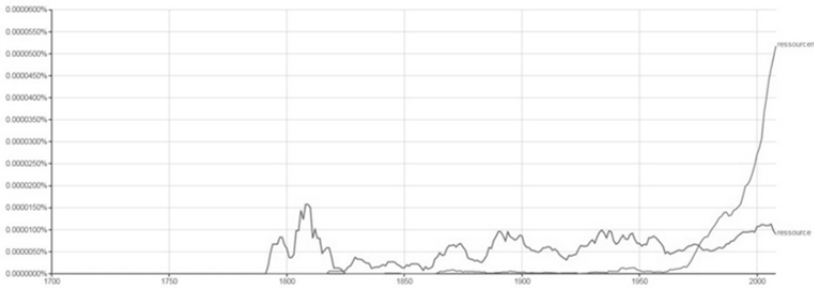


Figure 9: *Corpus Google Books “German”*. Frequencies for *ressource* and *ressourcen*, 1700–2002 (smoothing of 3)

This change from the singular to the plural form corresponds to a new massive shift in the meaning of “resource(s)”. First, let us look closely to what happened during the eighteenth century. As a symbol of the Enlightenment, the *Encyclopédie* (1751–1772)⁴¹ edited by Denis Diderot (1713–1784) and Jean-Baptiste le Rond d’Alembert (1717–1783) contains 795 occurrences of the lemma *ressource* (of which 457 are in the singular and 338 in the plural form). An entire entry is devoted here to the singular form:

“(1). RESSOURCE, s. f. (Gram.) est un moyen de se relever d’un malheur, d’un désastre, d’une perte, d’une manière qu’on n’attendoit pas; car il faut entendre par ressource un moyen qui se présente de lui-même; cependant quelquefois il se prend pour tout moyen en général. Ce marchand a de grandes ressources, il lui reste encore du crédit & des amis. Sa dernière ressource fut de se jeter dans un couvent. Le galimathias de la distinction est la ressource ordinaire d’un théologien aux abois. (2). Ressource, (Maréchal.) un cheval qui a de la ressource, est la même chose qu’avoir du fond. Voyez Fond.”

It differs only slightly from the medieval meaning, which prevails until the seventeenth century: the resource is a force that allows, at a crucial moment, to overcome a personal/internal weakness.⁴² The list of the main collocations in the *Encyclopédie* reveals then several categories related to the “*ressource*”: 1. Its importance and its quantity (*grande, aucune, faible, assez*); 2. Its availability (*dernière, reste, seule, unique, toujours, infinie*); and 3. Its qualities

41 Diderot et al. (1751–1772), *Encyclopédie*. The *Encyclopédie* is now available on the website of the ARTFL Project (by Robert Morrissey, Glenn Roe): <http://encyclopedie.uchicago.edu/>. See also the project ENCRE (by Alexandre Guilbaud, Marie Leca-Tsiomis, Irène Passeron, and Alain Cernuschi): <http://encre.academie-sciences.fr/encyclopedie/>.

42 The article above clearly evokes the context of weakness, in which the resource appears as a possibility of salvation: “*malheur*”, “*désastre*”, “*perte*”, “*derniere(resource)*”, “*abois*”, etc.

and object (*état, nature, pays, contre, vertu, mauvaise*). The “resource” therefore appears to be associated with the quality, the “*nature*” of a thing or a being, which it defines.

However, an examination of the occurrences in the plural form shows that the term then refers to something very different. Whereas, in the singular form, “*ressource*” means the structural quality of a thing or a being, “*ressources*”, in the plural form, are things external to oneself, which can be tapped, but, above all, accumulated, for various activities. These resources may be related to the spirit (in the Germanic sense of *Geist*), but could also be related to “nature” (the environment) or consist of economic capital.

The emergence of the contemporary meanings of “resource” was thus accompanied, as early as from the eighteenth century, by a transformation from the singular to the plural, which corresponds to a semantic shift. Previously designating a personal or internal attribute that enabled the individual to escape from a crisis, “resource(s)” became mainly a set of external objects, which could be manipulated and multiplied. In France and England, this semantic evolution took place in the decades from 1760 to 1790. The English corpus saw a transformation in the 1750s while the French corpus had already witnessed this a few years before. This periodisation relates to the historical context: it correlates with the massive transformation of European societies.⁴³ The change in both the meaning and the form of the word did, indeed, concur with the emergence of capitalism and with industrialisation in particular. We believe that this transition from “resource” (singular) to the “resources” (plural) thus correlates with a change in social organisation, in which the accumulation of resources defined capital.

III. Towards a Resource “Imperialism”?

This historical survey indicates that the notion of “resources” correlates with the rise of industry and capitalism. During its development between the eighteenth and the twenty-first century, there occurred an integration

43 Labrousse (1990/1994), *La crise de l'économie française*; Crouzet (1966), *Angleterre et France au XVIII^e siècle*; Hobsbawm (1999), *Industry and Empire*; Hobsbawm (1962), *The Age of Revolution*; Braudel et al. (1970–1982), *Histoire économique et sociale*; Cullen (2000), *La crise économique*; Legay (2010), *Capitalisme, crises de trésorerie*; Legay et al. (2009), *Retour sur les origines financières*; González Enciso (2016), *War, Power and the Economy*.

not only of the hitherto unexploited resources into the global capital, the concept of resources was also enlarged and made to encompass new domains, namely, culture, knowledge, the environment, and, above all, social relations. The history of the concept of resource(s) is, indeed, a history of expansion, from the internal resource to economic (*i.e.*, external) resources, and then to many diverse fields. Ben Fine (b. 1948) has termed this invasion of other disciplines as “economic imperialism”, and has diagnosed a conceptual reduction that was harmful to the disciplines concerned.⁴⁴ In parallel, Marshall Sahlins (b. 1930) spoke, in 2013, of “zombie economic ideas that refuse to die”,⁴⁵ which poison our non-ethnocentric appreciation of social systems. He even claims: “Economics, as constituted, is an anti-anthropology.”⁴⁶ However, whether the situation is as critical as Ben Fine and Marshall Sahlins diagnose is a question which this short chapter does not aspire to answer. Nonetheless, it still provides some particulars which throw a critical light on this trend.

Furthermore, to pose the question of resources historically in the early twenty-first century might be no accident. For one, academia has become more and more enmeshed in economic networks since the 1980s and 1990s. Sheila Slaughter (b. 1945) and Gary Rhoads (b. 1955) claim, for instance, that universities have entered the age of “academic capitalism”.⁴⁷ The implications of this scientific trend thus remain uncertain.⁴⁸

Acceptance of economical thinking may lead to the imposition of methodical individualism, rational choice theory, and the logic of the market onto domains that do not necessarily rely on economic relations, at least in pre-capitalist societies.⁴⁹ For example, if a social field such as culture is economically-dependent in our system—and, in this perspective, seems explainable by highly restrictive economic models—was it systematically the case in the past? This problem is especially thorny when dealing with

44 See Fine et al. (2009), *From Economic Imperialism*; see, also, Lazear (2000), *Economic Imperialism*.

45 Sahlins (1974), *On the Culture of Material Values* 163, and also 164: “Problem is, of course, with the commodification of everything, thus mystifying cultural facts as pecuniary values, the notion that the cultural order is the effect of people’s economizing, rather than the means thereof, became the native bourgeois common sense as well as its social science.”

46 Sahlins (1974), *On the Culture of Material Values*, 167.

47 Slaughter et al. (2004), *Academic Capitalism and the New Economy*. See, also, Radder (2010), *The Commodification of Academic Research*.

48 Compare the quotations collected in Fine et al. (2009), *From Economic Imperialism*, 14–15.

49 Guerreau (1990), *Politica/derecho/economía/religiòn*; Godelier (1972), *Rationality and Irrationality*.

non- or pre-capitalist societies, which did not separate what we nowadays call resources, and especially *natural* resources, from other conceptual or even social fields.⁵⁰ For instance, the extension of the term to Medieval Europe or late imperial China is difficult, since there is no straightforward correspondence to any of these notions. As shown above, the term “resource” emerged only late in the Middle Ages, namely, in the twelfth century, and, for several centuries, denoted an inner force to overcome a crisis.

1. The Overlaps between “Capital” and “Resources”

Most dictionaries of sociology, history or philosophy⁵¹ do not contain an entry on “resource(s)”. It could refer to the so-called “factors of production”, or it could constitute the object of the recent research field of resource economics. Most of the time, the former capture fairly well what common sense understands by the term. Classical economists, such as Adam Smith or David Ricardo, distinguished three factors of production: a) land; b) labour; and c) capital.⁵² Recently, the interest in natural resources has been growing, in the form of resource economics, which commonly distinguishes between different types of resources, to wit: a) current reserves (known resources, which can be profitably extracted); b) potential reserves (known resources, which could only be extracted at higher prices); and c) resource endowment (all the resources on the earth). Furthermore, exhaustible resources, which do not replenish themselves, are set apart from recyclable resources.⁵³ Natural resources have also been labelled “natural capital”.⁵⁴

Some influential research sets natural resources clearly apart from capital, defined as equipment to produce goods.⁵⁵ However, there is a consid-

50 Descola (2011), *L'écologie des autres*, 55–56.

51 See fn 2.

52 Smith (1776), *The Wealth of Nations*, Book I, Chapter 6: “Of the component Parts of the Price of Commodities”: “In every society the price of every commodity finally resolves itself into someone or other, or all of those three parts; and in every improved society, all the three enter more or less, as component parts, into the price of the far greater part of commodities. In the price of corn, for example, one part pays the rent of the landlord, another pays the wages or maintenance of the labourers and labouring cattle employed in producing it, and the third pays the profit of the farmer. These three parts seem either immediately or ultimately to make up the whole price of corn.”

53 See Tietenberg (1984), *Environmental and Natural Resource Economics*, 120–21.

54 Schumacher (2011), *Small is Beautiful*, 3–4.

55 Meadows et al. (1993), *Beyond the Limits*.

erable overlap between the concepts of “capital” and “resources”, especially since some authors apparently use the terms often interchangeably.⁵⁶ Even though the terms “capital” and “resources” are, of course, not equivalent, the latter is rather flexible. The progressive extension of the term “capital” during the past decades to both humans and social relations also means, we contend, that these are treated as economic resources. In the following, we would like to focus on three central aspects: human, social, and natural capital.

2. Human Capital and Human Resources

The theory of human capital came to the fore in the late 1950s and early 1960s (see Figure 5 below). Jacob Mincer (1922–2006) and, in particular, Theodore Schultz (1902–1998) and Gary S. Becker (1930–2014) contributed to its rise. Schultz published the first textbook on this subject in 1963, but it rose to public prominence only in the early 1970s. A flood of articles on the topic, and several textbooks and anthologies were published from that point.⁵⁷ The basic idea of human capital theory is surprisingly simple: it is roughly conceived as the sum of the knowledge, attributes and habits that someone can use to perform specific tasks. Thereby, human capital is perceived as an investment made on someone or on a group of persons, which could presumably produce value in the end or long term. For example, an investment in higher education may result in higher wages. Individuals, families, institutions, firms and even states are then considered as capitalist elements that are interested in maximising their rate(s) of return on investments. From this perspective, for instance, a rational person first calculates the investment necessary for schooling, meaning the loss of time which could be spent wage earning and the necessary expenditure, such as schoolbooks, stationery, fares for commuting, *etc.* A rational state will also calculate the costs for investments in schools relative to the expected rates of return before deciding upon a certain policy.⁵⁸

With this theory in mind, the passage from the “human capital” to the “human resource” becomes easier. Since persons or human groups are

56 See Schultz (1961), *Investment in Human Capital*, 3; Field (2008), *Social Capital*, 1, Fine (2010), *Theories of Social Capital*, 30, 43.

57 See Becker (1964), *Human Capital*; Schultz (1961), *Investment in Human Capital*. For an overview, see Blaug (1976), *The Empirical Status of Human Capital*.

58 See Becker (1964), *Human Capital*; Schultz (1961), *Investment in Human Capital*.

considered as investments that should be managed, it becomes possible to perceive them as “resources” that could be used to produce value under certain conditions. A simple examination of the chronological evolution of the two syntagms (“human resources”/“human capital”) clearly shows that they are strongly correlated, with a strong increase after WWII:

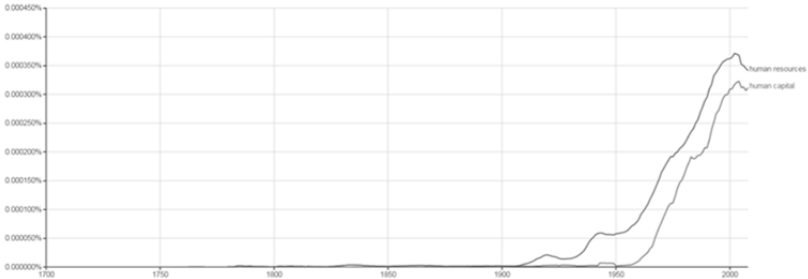


Figure 10: *Corpus Google Books “English. Frequencies for “human resources” and “human capital”, 1700–2002 (smoothing of 3)*

However, the theory of human capital has not been unchallenged. For instance, in 1975, Samuel Bowles [b. 1939-] and Herbert Gintis [b. 1940-] claimed that human capital theory was the last step of neoclassical economic theory in eliminating the concept of class from economic analysis.⁵⁹ This is mirrored by Ben Fine’s (b. 1948) commentary that social capital theory succeeded in eschewing all categories, such as class, gender, ethnicity and globalisation, which allow for critical reflection.⁶⁰ Moreover, Stephen Steinberg (b.1940) stated that human capital theory served reactionary and racist agendas.⁶¹ By abstracting this from its context, it engaged in correlating education and culture with economic success, while it failed in specifying education and culture as independent variables. According to Steinberg, it thus not only ended up in explaining economic success by economic success, but it also went one step further: economic success was rooted in cultural backgrounds taken to be essences. For instance, the economic success of American Jews allegedly flourished in the fertility of Jewish culture, whereas the poverty of many blacks in America was alleged-

59 Bowles et al. (1975), *The Problem with Human Capital Theory*, 74. For the impact of this criticism see Blaug (1987), *The Economics of Education*.

60 Fine (2010), *Theories of Social Capital*, 126. Compare Bowles et al. (1975), *The Problem with Human Capital Theory*, 82.

61 Steinberg (1985), *Human Capital*.

ly caused by their cultural background, for instance, in slavery.⁶² Thus, Bowles, Gintis and Steinberg all found that human capital theory was conceptually impoverished because it abstracted from categories which were vital to critical social analysis. Moreover, not only is “every worker now treated as capitalist”,⁶³ but every person’s reasoning and planning on culture and education is assimilated to rational choice models. According to Bowles and Gintis, this reduction also served reactionary and even racist agendas.

3. How about Social Capital?

A considerable amount of debate about the term “social capital” has taken place in recent years, although the term had already been used in the early twentieth century by the philosopher and psychologist John Dewey (1859–1952) and an educator from West Virginia, called Lyda J. Hanifan (1879–1932), who is now credited for its invention.⁶⁴ Despite James Farr’s claims to the discovery of a continuous history of social capital dating at least back to Karl Marx (1818–1883), who would—ironically—become the “patron saint”⁶⁵ of contemporary neo-liberalism, Ben Fine’s argument that social capital emerged in the 1990s—or at least totally changed in terms of meaning at that time—seems to be much more plausible.⁶⁶ Again, a quick look at the chronological development of the syntagma “social capital” in the Google Books database shows a massive take-off around the 1990s (Figure 11).

62 Steinberg (1985), *Human Capital*.

63 Bowles et al. (1975), *The Problem with Human Capital Theory*, 74. This is expressed explicitly by Schultz (1961), *Investment in Human Capital*, 3.

64 Putnam (2000), *Bowling Alone*; Farr (2004), *Social Capital*.

65 Farr (2004), *Social Capital*, 25.

66 Farr (2004), *Social Capital*, 25; Fine (2007), *Eleven Hypotheses*; Fine (2010), *Theories of Social Capital*, 13 f. On the Farr-Fine controversy, see Fine (2007), *Eleven Hypotheses*; Farr (2007), *In Search of Social Capital*.

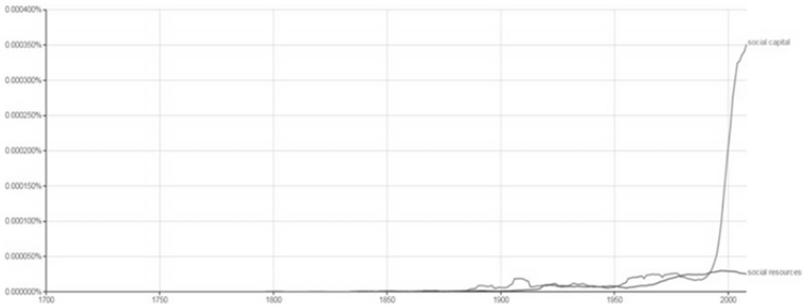


Figure 11: *Corpus Google Books “English”*. Frequencies for “social capital” and “social resources”, 1700–2002 (smoothing of 3)

In some ways, the theory of social capital is a successor to that of human capital.⁶⁷ Chronologically speaking, this is at least what Figures 5 and 6 show, with a few decades between the rise of the two concepts. Thus, “social capital” could be considered as an extension of the concept of “capital” to a broader social field. In comparison, the concept of “social resources” has remained thin, probably because of the dominance of “social capital”.

In contrast to the notion of human capital, the theory of social capital escaped the rather narrow bounds of rational choice theory.⁶⁸ According to Robert Putnam, social capital embraces social relations which have value, that is to say, which contribute positively to production. Putnam comments that this is close to a civic virtue.⁶⁹ It is an important asset of society which indicates a general tendency of deterioration or amelioration, and his main objective was to amass evidence to prove the following point: that social capital in America has declined since the 1960s and was thus also responsible for the declining growth rates and the quality of life in general in these years.⁷⁰ Putnam’s theory of social capital has solicited severe criticism. Ben Fine, for instance, has compared Putnam to Ronald McDonald fostering the McDonaldisation of social science.⁷¹ More to the point, Fine makes the criticism that, on the one hand, the definition of social capital is vague and too permissive, while, on the other, it figures in reductive corre-

67 Field (2008), *Social Capital*, 3–4.

68 Field (2008), *Social Capital*, 23–24, 36; Fine (2010), *Theories of Social Capital*, 158.

69 Putnam (2000), *Bowling Alone*, 18–19, see also, Field (2008), *Social Capital*, 32 ff.

70 Field (2008), *Social Capital*, Chapter 19.

71 Fine (2010), *Theories of Social Capital*, 161.

lations which are presented as causal relationships, without taking other contextual variables into account. The toolkit for analysis is thus deprived of several important social concepts, such as class or gender, and social capital theory falls back onto a neoliberal set of categories, idealising the rational individual and connecting the ideal market to the rise of democracy.⁷² Moreover, Steven Durlauf [b. 1958–] has highlighted several important methodological shortcomings in Putnam’s argument, and was sceptical about the allegedly benign function of social capital.⁷³ Thus, the impact of social capital theory resulted in a gross reduction of genuinely social concepts, such as class, power relations, and gender.

4. Nature between Resources and Capital

Another field in which the concept of “resources” has been extensively used is that of “natural resources”. Resource scarcity and environment protection gained a lot of popularity in the 1960s and 1970s. After the famous Brundtland Report of 1987,⁷⁴ the term “sustainable development” passed into scientific, popular and policy discourses. Its main aim was to combine economic growth with the protection of the environment, that is, to merge and extend the free market to nature and resources. In contrast to the report, *The Limits to Growth* by the Club of Rome, which conceptualised environmental risks in relation to resource scarcities and stressed the importance of limits, the Brundtland Commission stressed growth, the importance of technology, and the alleviation of living standards. Sustainable development was then defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.⁷⁵ Its aim is to sustain the natural stock of resources or the “critical natural capital”. One of the main ideas of the Brundtland Commission was to combine the ideas of economic growth while preserving the amount of critical natural capital.⁷⁶ It thus continued a tradition of economic thinking, which goes back to Lionel Robbins [1898–1984], who defined economics in the early 1930s as *the science analysing the allocation of*

72 Fine (2010), *Theories of Social Capital*, 23 ff., 42 ff., 158, 176 ff.

73 Durlauf (2002), *Bowling Alone*.

74 Brundtland Commission (1987), *Our Common Future*.

75 Brundtland Commission (1987), *Our Common Future*, 41.

76 For a business perspective on environmental protection, see Schmidheiny (1992), *Changing Course*.

scarce resources between competing ends. Despite critiques and alternative approaches, the mind-set of the neoclassical economy still dominates the approaches to sustainable development.⁷⁷

The neoclassical authors' approach treats the "environment" like a commodity in order to analyse it like other commodities. They claim that the environment is undervalued and thus exploited without paying any fees.⁷⁸ Environmental protection thus mainly consists in bestowing the right price on the environment.⁷⁹ Neoclassical economists develop supply-and-demand curves of the environment, relying again on methodological individualism and the assumption of an economically rational person operating in a competitive market.⁸⁰ This does not mean, however, that the neoclassical approach relies upon a notion of minimal government. On the contrary, the government influences the market by imposing taxes or providing subsidies.⁸¹ Be that as it may, the important consequence of this approach for the argument presented here is that the whole environment is turned into a cluster of commodities with prices attached. This means that the environment enters the capitalist logic not by being exploited, but by being left to itself, for instance, in order to guarantee biodiversity.⁸² The enormous development of the notion of "natural resources" is probably a result of this social shift. According to our survey, this rise starts during in the early twentieth century, probably in direct link with the First World War, but is also because of the increasing interest in the conservation of nature since the 1970s.⁸³

The first and most intuitive critique of this approach is that large parts of the environment are not a commodity like potatoes or soap. For instance, part of it is not owned in any straightforward sense, and, in contrast to real markets, individuals do not express preferences about the environment, which could be used as a basis for constructing supply and demand curves.⁸⁴ Secondly, and most importantly, the anthropologist Arturo Escobar (b. 1952) argued that the sustainability discourse operates in fa-

77 Jacobs (1994), *The Limits to Neoclassicism*, 67.

78 Jacobs (1994), *The Limits to Neoclassicism*, 69; McCauley (2006), *Selling out on Nature*, Redclift (1987), *Sustainable Development*. See, in particular, Schmidheiny (1992), *Changing Course*, 14–33.

79 Jacobs (1994), *The Limits to Neoclassicism*, 70.

80 Jacobs (1994), *The Limits to Neoclassicism*, 71.

81 Jacobs (1994), *The Limits to Neoclassicism*, 68.

82 Escobar (1996), *Construction Nature*, 47.

83 See, for example, Pinchot (1908), *The Conservation of Natural Resources*.

84 Jacobs (1994), *The Limits to Neoclassicism*, 74–78.

vour of the first world, which thus tries to impose parsimony and a decrease in population growth on the third world.⁸⁵ In sum, the discourses on human, social and natural capital show that economics encroached on other disciplines, sociology in particular, and that, in all three cases, this trend has resulted in a neglect of social issues.

IV. Concluding Reflections

Before concluding, the limits of our study should be underlined once again. To sketch the development and semantic changes of “resource(s)” over roughly 2,000 years, in order to discuss the current developments within the human and social sciences critically, is, to say the least, a tall order. In inquiring quantitatively into the term “resource(s)”, we should also chart the development of associated terms, and, in order to do this, we relied on non-homogenous data-sets which leave many questions open. As historians outside their comfort zones, probing into contemporary economics and social theory is a necessary, but ambitious, task. Despite all these difficulties, we hope that this effort shows the deep interest of a history of the concept of resource. In this perspective, this contribution is also conceived as a call for future reflections on the topic.

This chapter proposes two working hypotheses, which should be tested and detailed by latter research. First, the notion of “resources”, as we know it today, emerged in the eighteenth century and matured over the following two centuries. By the twentieth century, it became predominant in economics from where it spread first to the social and then to the human sciences. This might correlate with the rise of industrial capitalism in the eighteenth and nineteenth centuries, and the growing dominance of economic approaches to many aspects of social life and nature in the second half of the twentieth century. Second, this economic encroachment into the human sciences fosters the appearance that nearly all aspects of our life world are within the grasp of methodological individualism, be it moral values, educational choices, friends and family, or the protection of the environment. This also means that these domains allegedly fall within the scope of economic rationality to the detriment of many contextually relevant aspects, in particular power, hierarchies and cultural representations.

⁸⁵ Escobar (1996), *Construction Nature*.

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