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Research article

No Resources, but a lot of Skill: A German Political Myth and its History[1]

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Abstract

While during the 19th century Germany was characterized by the formula "land of poets and thinkers." after WWI another phrase and self-characterization became popular: Germany was framed as a country that compensated with science its lack of resources. This self-description passed more or less unaltered through the Weimar Republic, the NS-State and still is very prominent in present political discourse. Its sources, parallels and political implications are analysed in this essay. The technical achievements of, for example, Haber and Bosch to make a strategically important raw material available in any quantity from "mere air" was seen as a way out of the predicament that foreign powers could block access to important substances at any time. This finds its philosophical counterpart in Arnold Gehlen's thesis of the deficiency of human beings that can be compensated by technology and by way of institutions. The notion of the resource-poor nation that relies on the inventiveness of its engineers finally results in a focus on applied science and technology.

Keywords: History of chemistry; Techno-politics; Political narratives; Material resources

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[1] The text is a completely revised and expanded version of Soentgen, 2014.

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Научная статья

Без ресурсов, но с уменьями: Немецкий политический миф и его история[2]

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Аннотация
Если в XIX веке Германия характеризовалась формулой “страна поэтов и мыслителей”, то после Первой мировой войны стала популярной другая формулировка и самохарактеристика: Германия была представлена как страна, которая компенсировала недостаток ресурсов наукой. Это самоописание прошло более или менее неизменным через всю дальнейшую историю и до сих пор занимает видное место в современном политическом дискурсе. В этом эссе анализируются его источники, параллели и политические последствия. Технические достижения, например, Габера и Боша, позволившие сделать стратегически важное сырье доступным в любом количестве из “простого воздуха”, рассматривались как выход из затруднительного положения, когда иностранные державы могли в любой момент перекрыть доступ к важным веществам. Это находит свой философский аналог в тезисе Арнольда Гелена о недостатках человеческих существ, которые можно компенсировать с помощью технологий и институтов. Представление о бедной ресурсами нации, которая полагается на изобретательность своих инженеров, в конечном итоге приводит к концентрации внимания на прикладной науке и технологии.

Ключевые слова: История химии; Технополитика; Политические нарративы; Материальные ресурсы

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[2] Текст представляет собой полностью переработанную и расширенную версию статьи Soentgen, 2014

Resources are in Germany by no means just a technical-economic topic with ecological overtones. The intensity with which the stock market, publicists, but especially politicians react to discussions of scarcity, especially of high-tech raw materials, cannot be adequately explained by referring to a supposed scarcity that actually exists 'in the real world.' Ten years ago already, a study on the scarcity of "rare earths" – a certain group of elements that is particularly needed in high-tech industries – came to the conclusion that nobody knows exactly, just how scarce these materials really are (Zepf, 2013, pp. 114-117). Incorrectly, the group name „rare earths" suggests a kind of natural scarcity and obscures the fact that scarcity must be relativized at least twice, namely in relation to the availability of other goods and in relation to current or projected economic demand.

The topic of "raw materials" has been discussed in Germany for at least 100 years within the framework of a myth, without the consideration of which the current discourse and its particularities can hardly be understood. In this context, a myth is understood as a traditional narrative that serves a political, metaphysical or even religious function, i.e. it serves to explain or also legitimise.

The discourse on raw materials in Germany has a mythical dimension in quite this way, it is not as technical or sober as it appears. By way of the oft-varied formula of a country poor in raw materials whose only wealth or capital is its brains, knowledge, or know-how, the myth helps project a powerful self-image that has been telling Germans for a while who they actually are in contrast to others. This narrative scheme is particularly popular among politicians who talk about the economy and education, also among entrepreneurs and application-oriented researchers. In 2009, for example, the chairman of the board of the German Aerospace Center (DLR) declared: "a resource-poor country must invest in brains, invest in technologies" (Jung, 2009). This was to justify why his centre was sticking to plans for a moon mission despite the financial crisis. There is similar talk elsewhere. Wherever innovation conferences are held in the country, wherever an industrial development is launched, or new funding initiatives celebrated for the cooperation between business and science, this formula will be heard. It always sounds innocent and fresh, unspent, and plausible.

However, the formula has a history of around one hundred years, which resonates strongly in the current political talks of the "scarcity of raw materials." In it, as in other effective myths, error and truth mix in a strange way.[3]. For on the one hand, Germany is by no means poor in resources or even raw materials, certainly not in comparison to other countries of similar size. In a dictum directed at the ore deposits of the old German Empire, economist and historian Werner Sombart stated: "The lands of the German crown were the Mexico and Peru of the earth before the discovery of America" (Sombart, 1916/1987, p. 519, see also Rüger, 1939, p. 3 or Deutschlands heimlicher Reichtum, 2023). Even after two world wars, Germany was until recently the world's largest producer of lignite, only recently overtaken by China. It has enormous deposits of potash salt, no shortage of important building materials such as sand, gravel, or limestone, also has considerable metal and uranium deposits and is particularly well endowed

[3] On political myths in Germany, see Münkler, 2009, pp. 9-30; the myth examined here is missing in Münkler's collection.

ecologically with fertile soils, water, rivers and forests, not to mention the aesthetics of its cultural landscapes, some of which are still preserved here and there today.

German iron ore and especially coal deposits were central prerequisites for the emergence of German steel-making the German chemical industry. Without the abundance of ecological resources, Germany would never have become a densely populated country. Without its enormous fossil mineral resources it would never have risen to become the leading industrial nation in Europe. There is a shortage of resources only in the case of oil and a few metals or minerals. On the whole, the supposedly self-evident description of Germany as a resource-poor country is a myth that is not backed up by facts.

This myth has its roots in the decades after 1918. At that time, the lost world war was often explained by the legend of the stab in the back. Equally powerful, however, were explanations that pointed to the blockade of key raw materials, especially oil. The geologist Ferdinand Friedensburg quotes the *communis opinio* when he writes in his 1939 book "*Das Erdöl im Weltkrieg* [Oil in the World War]": "numerous weighty voices in the camp of Germany's opponents have attributed the overwhelming final success to the superiority that the Entente possessed over the Central Powers in the supply of mineral oil" (Friedensburg, 1939, p. 121).

The concern of being cut off by a blockade from raw materials that are essential to warfare was already being ventilated in Germany in the 19th century. Although France's blockade attempt in the Franco-German War of 1870/1871 was unsuccessful, the blockade was considered a potential risk in a war on two fronts (Fehr, 2009, p. 59). Nevertheless, the precautionary measures taken by the German Empire until 1914 remained rather modest and proved largely ineffective during the war. A short military conflict had been expected and, as the war progressed, the German Empire found itself in a dire situation of increasing scarcity and shortages. In the publications of the time, attempts were discussed to make up for almost all imported goods through domestic materials, mostly with little success.

The solution was modeled on the example of saltpetre which was of central military importance as an explosive charge for mines and as a propellant charge for ammunition. This substance, which was as indispensable for warfare as steel was for weapons production, could be supplied in sufficient quantities despite the blockade. Saltpetre was made technically available via ammonia thanks to Fritz Haber's invention, which was further developed into a large-scale industrial process by Carl Bosch and his team. Now, the German Reich was no longer dependent on saltpetre supplies from Chile or India. As early as 1913, as Sandro Fehr was able to prove on the basis of a discovery in the BASF company archive, a contract was concluded between the state explosives and powder factories on the one hand and BASF on the other. In this contract the latter guaranteed to deliver a certain quantity of nitric acid to the state explosives producers every month "in the event of mobilisation" (Fehr, 2009, p. 62, see also Fehr, 2015).

After the war the technical achievement of Haber and Bosch to make a strategically important raw material available in any quantity from "mere air" (albeit with the help of fossil energy such as coal or natural gas) was seen as a way out of the predicament that foreign powers could block access to important substances at any time. This achievement

is everywhere present in the literature of the 1920s and 1930s: "it will remain unforgotten to anyone who experienced the World War with any consciousness how German technology in particular conjured nitrogen for the needs of the army as well as agriculture into our hands by completely new means from the air" (Weule, 1922, p. 60). Similarly, the Swedish Nobel Prize winner Svante Arrhenius summarised the general opinion in 1921 when he wrote: "One has often ... heard that it was the schoolmaster who won the 1870 war against France, – now it is the chemist who turned the advantage in Germany's favour in the first year of the war. Without his help, Germany, cut off from all saltpetre-producing countries, would have been crippled for lack of munitions after only the first three months of the campaign" (Arrhenius, 1922, p. v). In the literature on raw materials, the Haber-Bosch process was soon joined by the synthesis of rubber from "coal and lime" by Fritz Hofmann, the invention of synthetic fibres that replaced cotton, but also, in retrospect, the invention of beet sugar by the Berlin chemist Andreas S. Marggraf and Franz Achard in the late 18th century.

The journalist and writer Anton Zischka (1942) bundled such success stories and gave them the punchy title "Inventors Break the Blockade." This was the title of his 1937 book, which deserves to be singled out from the plethora of similar titles from the 1920s and 1930s because of its immense, not only national, but international circulation (see Weber, 1999). Books of this kind were promoted by National Socialist cultural policy, but also arose spontaneously and had already been published before Hitler came to power. At the behest of Fritz Todt, Zischka's work became mandatory reading in German schools and the myth he transported became a definitive part of the self-image of what was now National Socialist Germany. It thus stood alongside the better-known racist myths and complemented the doctrine of a people without '*Lebensraum* [living space].'

The narrative was now mostly this: Due to the victorious powers of the world war, Germany was already cut off from important raw materials during the war, but even more so afterwards. The war opponents have no shortage of raw materials of all kinds due to their extensive colonial empires, where cruelty reigns. But German inventors, especially German chemists, through their self-sacrificing work, found ways to produce those substances in any quantity from very simple basic materials available in Germany. This would liberate first of all Germany, but then would free from the chains of the monopolists also the whole, enslaved world. Progress, prosperity, and peace for the whole world are the goals of those scientists whose only desire is to serve humanity with their research and free the poor and suppressed victims of colonialisation. This primarily refers primarily to chemists Industrial chemistry was, after all, very influential in the Nazi Reich, with some managers and chemists involved in the Holocaust (see Soentgen, 2017 on the industrial projects of IG Farben in Auschwitz, ,see also Soentgen, 2019, pp. 131-150 and Maier, 2015).

Max Hessenland (1938), professor of chemical technology in Königsberg, which was Prussian at the time, sums up this view of history in the preface to his book "*Deutschlands Kampf um Rohstoffe* ["Germany's Battle for Raw Materials"]:

> There is an old saying that goes: 'Necessity is the mother of invention'. This saying has never been so true of any people as it has been of the German people. Since the beginning of the war, and perhaps even more so since the harsh Versailles

> dictate, the need has become so great that only the German inventive spirit can come to the rescue. Deprived of all colonies and foreign raw materials, we have claimed a colonial empire of our own, which is not recorded on the atlas and which no one can snatch from us. It is the vast empire of science and technology. (...) We now have the land of unlimited possibilities within the borders of our own fatherland. In this infinite colonial empire, the laboratories are, as it were, the gardens and plant nurseries in which, by the expert hand of the researcher, new species are bred, nurtured and cared for, often over years of laborious trials, until they become strong enough to be transplanted into the plantations, i.e. the factories." (p. 9-10)

As examples of such successes, he mentions synthetic dyes such as indigo, synthetic saltpetre (Haber-Bosch process), artificial silk and synthetic petrol.

From such descriptions it becomes clear how in the formula "no raw materials, but brains" the national self-image is formed in contrast to the European neighbours France and especially England which is despised as a "trader nation." Those "traders" walk over corpses, as dramatized, for example, in a 1938 German book "*Blutgummi* [blood rubber]" by Karl Fischer. In contrast, Germany's path via chemical synthesis is not only an economic necessity, but is, according to the self-representation, supported by deeply humanistic values.

In the four-year plans of the National Socialist government, self-sufficiency was implemented as a political goal. It served to prepare for war. In the propaganda of the Nazi newspaper *Völkischer Beobachter* this self-image is further bundled: "We are poor in raw materials, and that is why we are the ones who are bringing up a new age of technical and chemical development" (quoted from Berndt, 1938, p. 219).

After 1945, in the supposed "zero hour" of a new beginning, racism and the "*Lebensraum* [Space for Life]" doctrine were officially condemned and removed from the treasure-chest of national myths as best they could. Very few now spoke and wrote of a people without space. The doctrine of resource-poor country, however, survived, not only through the books of Anton Zischka or Aloys Schenzinger which continued to find thousands of readers in revised new editions (Schneider, 2004). As much as the year 1945 signifies a *caesura* in German history, it must be pointed out that there were also numerous continuities.

If Werner Abelshauser's (2004) statement that "German history since 1945 is above all economic history" (p. 11) is correct, and if it is true that the "West German Federal Republic ... long resembled a successful economy in search of its political raison d'être" (p. 11), then the peaceful, purely economic formula „no raw materials, but brains" fits this perfectly. For this formula, there was no "zero hour," no "collapse" or *caesura*. There is something immediately obvious about it. It finds its philosophical counterpart in Arnold Gehlen's thesis, disseminated since 1940, that the 'human being,' compared to animals, is a "deficient being" (Gehlen, 1966, pp. 20, 33, 83) that can only maintain itself with the help of technology and by way of institutions. Although this philosophical formula has older predecessors – Gehlen refers especially to Johann Gottfried Herder – it is expanded in Gehlen's work in such a way that it has questionable political implications, for example, the warning against damaging existing institutions (for a criticism of this, see Hagemann-

White, 1973). In any case, however, the narrative of the resource-poor country contains practical implications in political discourse, namely the promotion of applied science and technology. In this, it becomes evident how it joins up with the older self-definition of Germany as a "land of poets and thinkers," which goes back to the early 19th century and which characterizes Germany not as a mere technological, but as a cultural nation.

Exposing the political-cultural dimension of the resource issue has consequences for the understanding and evaluation of current discourse on the question of resources. This discourse must be questioned just as critically as the formula of the resource-poor country itself. Raw materials are not scarce per se. The naturalisation of scarcity has ideological purposes. It conceals the economic and power-political interests that motivate the interest in *certain* raw materials. We have to ask: which raw materials are scarce for whom in relation to which projects?

In other respects as well, the formula of a country poor in raw materials should be questioned. Not only because it inappropriately diminishes the ecological, geographical and geological prerequisites of Germany's economic power. But also because in this self-image intellectual activity is reduced to applied research. The well-known characterisation of the land of the poets and thinkers may sound enraptured and romantic. The more modern self-characterisation, however, is a programme for intellectual shrinkage. It ties intellectual activity to economic goals, which are not questioned further, but are taken to be natural. Is there no more drive in present day Germany to continue to be a cultural nation? In any case, the formula from the 19th century had a broader horizon than the novel popular self-image of a people of clever engineers who compensate their alleged lack of resources with inventivness.

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