

Prosperity and Identity: European Networks in *Signal* Magazine. An Argument used to promote the Nazi Project for the Continent's Unification

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1. Introduction

Soon after the outbreak of the Second World War, German authorities mobilized unprecedented means for foreign influence, especially through the diffusion of newspapers and magazines throughout Europe and beyond. It was in this context that the bi-monthly magazine *Signal* was launched in April 1940, which drew inspiration from the attractive format of the recently created magazines *Life* (1936) and *Match* (1938), and used the extensive means at its disposal to promote a positive image of Germa-

ny through “soft” propaganda.¹ Between 1940 and 1945, its circulation rose to 2.5 million in 25 languages in neutral, occupied, and friendly countries (but not in Germany, even though the “matrix” translated into other languages was drafted in Berlin), with France being a leading country. The magazine addressed a wide audience and generally devoted approximately half of its contributions to reporting on the war and politics, supplemented by social and cultural topics with more or less neutral ideological content.

These subjects were often broached from a European perspective likely to attract the reader, especially in France, which offered particularly fertile ground for this approach: “The European ideal is deeply rooted in France. [...] This ideology plays in our favor,” Abetz noted in 1941.² The French-language version was even more “European” than the German original, as between late 1942 and the end of the magazine’s diffusion in France in the summer of 1944, it offered specially conceived articles for the French public, with reflections on subjects with a French-German or European dimension in lieu of the more German-centric articles of the “matrix.”³ Europe’s presence in *Signal* evolved over time, and it was only in the spring of 1941 that the topic started gaining quantitative importance (in texts, images, and advertisements).⁴ After the start of the war against the USSR, articles on culture and “the reorganization of the European eco-

1 See Aslangul, Claire: “*Signal* et la France: ‘vendre’ par l’image le rapprochement franco-allemand sous l’Occupation,” in: Aslangul-Rallo, Claire / Krapoth, Stéphanie (eds.): *Les relations franco-allemandes en perspective: sources, méthodes et temporalités pour une approche des représentations depuis 1870*, Besançon 2016, p. 259 – 318.

2 In a June 1941 report to Ribbentrop, cited by Bruneteau, Bernard: “*L’Europe nouvelle*” de Hitler. *Une illusion des intellectuels de la France de Vichy*, Monaco 2003, p. 17.

3 Especially a dozen articles on the LVF (Legion of French Volunteers Against Bolshevism), and a long article by René Vallet, “L’idée européenne chez les hommes d’État et les penseurs français” (The Idea of Europe Among French Statesmen and Thinkers), in: *Signal* 22 (1943). See Aslangul, Claire: “Le magazine *Signal* (1940 – 1945). Propagande ‘universelle’ ou adaptation à des publics hétérogènes? L’exemple de la version francophone”, in: *Matériaux pour l’histoire de notre temps* 1 (2020), p. 56 – 67.

4 See Aslangul, Claire: “Les publicités dans le magazine *Signal* (1940 – 1945) entre promotion commerciale et propagande politique: apports d’une analyse quantitative”, in: Aslangul, Claire / Zunino, Bérénice (eds.): *Die Presse und ihre Bilder / La presse et ses images*, Berlin/Bern 2021.

conomic area”⁵ were supplemented by contributions on Europe as a community of values, culture, and race. The topic of a “crusade against Bolshevism,” conducted under the aegis of Germany by “volunteers” from all countries, experienced a resurgence after the defeat of Stalingrad in February 1943. *Signal* engaged in outrageous dramatization, claiming that the conflict’s outcome could determine whether Europe thrived or became permanently annihilated.

These articles with a European dimension contrasted the projects of the “former world”, such as Paneurope and the “corpse” of the LN, with the future vision of a peaceful and prosperous “new community of nations,”⁶ one that reserved a special role for transportation, energy, and communication networks. The latter enabled the exchange and free movement of goods,⁷ persons, and ideas, and were presented as drivers of the continent’s beneficial unification. These articles effectively contributed to a propagandist strategy seeking to falsify the reality of the national socialist project, with which they were nevertheless directly associated, namely the maximal exploitation of the continent’s resources for the benefit of the German Reich.⁸

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- 5 The title of Walther Funk’s famous speech on July 25, 1940 (*Die wirtschaftliche Neuordnung Europas, Rede vor Vertretern der deutschen und ausländischen Presse*), cited in the February 1941 article by Diether Heumann, “L’or est mort. Pourquoi l’or a-t-il passé de vie à trépas !” (Gold Is Dead: Why Gold Went From Life to Death!), in: *Signal* 4 (1941) (February): 8. *Signal* appeared bi-monthly beginning in April 1940, with sequential numbering per year, from 1 to 17 in 1940, and then 1 to 24 in 1941, 1942, and 1943; it appeared less regularly in 1944, with only 19 issues being published that year; in 1945 there were five issues for the German edition, and only four for the French edition (from January to March).
- 6 Von Oertzen, F.W.: “Société des Nations? Communauté des Nations. Ce qui est impossible aujourd’hui sera possible à l’avenir” (League of Nations? Community of Nations: What is Impossible Today Will Be Possible in the Future), in: *Signal* 13 (1941) (July): 8 – 11. See also Clauss, Max: “Le mauvais chemin de la Paneurope” (The Wrong Road of Paneurope), in: *Signal* 17 (1940), p. 4 – 5.
- 7 An eloquent article shows, through the use of an anecdote, how much customs duties increased the cost of an unremarkable product such as a watch, and concluded: “Unified Europe freed of these customs borders will become a single market, offering tremendous possibilities to sell its products,” in: *Signal* 15 (1943) (August): 23. Anonymous “(Le nouvel aspect du monde: l’avenir de l’Europe) Soederstroem achète une montre” (The New Aspect of the World: Europe’s Future — Soederstroem Buys a Watch).
- 8 See for example “Sitzung im Reichswirtschaftsministerium: Neuaufbau der europäischen Wirtschaft,” July 22, 1940 (*Quellen zur Neuordnung Europas 1*,

While the topic of networks was present throughout the magazine's publication, it became the focus of a series of dedicated articles between the fall of 1941 and the summer of 1942. In May 1941, an article by Lehnau announced "the publication of a new series in which certain issues of interest to all of Europe will be discussed", based on concrete examples of real productions — not "utopias but actual facts."⁹ Between September 1941 and July 1942, ten articles in this vein appeared at infrequent intervals, on average one article every two issues. They all evoked the topic of networks in more or less detailed fashion. Study of this corpus reveals the dual interest of networks for Nazi propagandists. First, this topic of apolitical belonging offered readers a positive and concrete vision, with the evocation of tangible results, coupled with prospects for economic prosperity and the construction of a lasting understanding between peoples. Second, the presentation of past and present German realizations in matters of infrastructure, as well as descriptions of its opponent's failures and shortcomings in the matter, were used to legitimize the Third Reich taking over "leadership of Europe."¹⁰

2. *An Ideal Subject for "Positive Propaganda"*

2.1 The Propagandistic Usefulness of Networks in the Context of "the European Continent's Unification" in 1941-1942

The publication of a series of articles on networks was in keeping with the pro-European editorial line defined in January 1941 by editor-in-chief Medefind, who emphasized subjects "of interest to a wide readership", "a

source 14, S. 7 – 11 available on the portal "Online Academy - the authentic records of the Nuremberg War Crimes Tribunal" <<http://www.profit-over-life.org/books/books.php?book=37>>), in addition to the different projects presented in Neulen, Hans Werner: *Europa und das Dritte Reich. Einigungsbestrebungen im deutschen Machtbereich 1939 – 1945*, München 1987.

- 9 Lehnau (pen name for Walther Kiaulehn): „L'Europe sera un jardin luxuriant“ (Europe Will Be A Lush Garden), *Signal* 10 (1941) (May), p. 20 – 22 and p. 27, here 20.
- 10 Fischer, Rudolf: „Qui peut diriger l'Europe?“ (Who Can Lead Europe?), in: *Signal* 11 (1941) (Juni), p. 22 – 27.

foreign audience in particular.”¹¹ This option was reinforced in April 1941 by the Minister of Propaganda Joseph Goebbels’s desire to underscore “the most attractive sides of human life” in propaganda publications.¹² Publication as a series was not implemented until September, with the decisive impetus for doing so seemingly coming from the initiation of Operation Barbarossa in the summer of 1941: plans to create an actual self-sufficient European economic area began to take shape after military successes in the West,¹³ and the French defeat in particular¹⁴; beginning in June 1941, the East’s raw materials, agricultural reserves, and industrial prospects, already presented as “immeasurable”¹⁵ during the German-Soviet pact, seemed within reach. The start of the offensive against the USSR was, for that matter, perceived and presented in *Signal* as the moment when the endeavor to unify the European continent began.¹⁶

Propagandists now insisted on completing ideological and political mobilization (the “crusade against Bolshevism”) by using a more attractive component for the foreign audience. According to the recommendations of Karl Megerle,¹⁷ the journalist and propaganda specialist for Joachim von

11 Rutz, Rainer: “*Signal*.” *Eine deutsche Auslandsillustrierte als Propagandainstrument im Zweiten Weltkrieg*, Essen 2007, p. 253, 279, citing Medefind’s notes, 28.1.1941, AA PA Presseabt. Lfd. Nr. 55 II.

12 Goebbels’s diary, entry for April 30, 1941, cited in Rutz, “*Signal*”, p. 279.

13 An article from June 1940 shows the beginning of the economic area’s realization: “the Balkans [...] represent an economic whole, leaning most naturally toward Greater Germany,” with “new interdependence” and an “economic symbiosis” of sorts: Anonymous: „L’Allemagne et les Balkans” (Germany and the Balkans), in: *Signal* 5 (1940) (Juni), p. 34 – 35.

14 The article Anonymous: „Hier – aujourd’hui – demain. Trois chapitres d’économie européenne” (Yesterday—Today—Tomorrow: Three Chapters from the European Economy), in: *Signal* 23/24 (1942) (December), p. 50 – 65 retrospectively looks back at this turning point, and points out that: “It was after the collapse of France that the broad outlines of the great European area emerged” (63).

15 Anonymous: „La porte s’ouvre sur l’Est” (The Door Opens onto the East), in: *Signal* 7 (1940) (Juli), p. 42 – 43.

16 See Wirsing, Giselher: „La naissance du soldat européen” (The Birth of the European Soldier), in: *Signal* 12 (1943), p. 8, 11, 13: “Something has existed since June 22, 1941 that had disappeared for centuries: the European soldier. [...] [The] appearance of the European soldier coincides with Europe’s birth. [...] A shared destiny is the guarantor of the future happiness and abundance in which all peoples will participate as part of a unified continent.”

17 Megerle, Karl: „Positive Presse- und Propagandathemen“, September 27, 1941, in: *Quellen zur Neuordnung Europas 1*, source 14, p. 40 – 43. Megerle was also

Ribbentrop's Ministry of Foreign Affairs, a "positive propaganda [...] chiefly concerned with Europe's future" was essential; this would involve "building enduring peace and recognizing a shared destiny" with Germany playing the role of "protector" for European peoples destined for "collaboration," in addition to the "conservation and regeneration of Western culture" and "the creation of a great European economic area with an organic division of labor based on technical planning and the most modern transportation," thereby leading to a "Europe of prosperity." In the words of Bruneteau, who aptly describes the European idea's ability to "enchant" influential members of the French intelligentsia of all stripes¹⁸ — its economic component in particular — it was the time of the "hymn to the 'great space.'"¹⁹

It was precisely from this program — editorial in nature for *Signal*, and corresponding to the general direction of policy—from which the articles appearing between the fall of 1941 and the summer of 1942 seemingly stemmed, evoking trans-European networks including railway infrastructure,²⁰ roads,²¹ air traffic,²² inland navigation,²³ wireless communica-

an active contributor to the magazine *Berlin-Rom-Tokio*, another important German press organ abroad; see Longerich, Peter: *Propagandisten im Krieg. Die Presseabteilung des Auswärtigen Amtes unter Ribbentrop*, München 1987, S. 79.

18 Bruneteau: *L'Europe nouvelle*, p. 70.

19 Ebd., p. 10.

20 Kapeller, Ludwig: „Le trafic international dans l'Europe sans frontières. (La solution future: voyages d'agrément et trains de luxe à la portée des travailleurs)” (International Traffic in Borderless Europe: The Future Solution — Affordable Leisure Travel and Luxury Trains for Workers), drawings by R. Hainisch, in: *Signal* 20 (1941) (October), p. 41 – 45.

21 Anonymous: „Plus de routes droites ! Une nouvelle situation sociale pour l'Europe: conservateur des sites” (No More Straight Roads! A New Social Situation for the European: The Preserver of Sites), in: *Signal* 20 (1941) (October), p. 24/25, drawings by Manfred Schmidt.

22 Kapeller, Ludwig: „,Le 'train aérien', express de l'avenir. L'Europe, centre du trafic aérien mondial (Le développement de l'aviation civile allemande depuis ses débuts jusqu'à l'époque actuelle)” (The "Air Train," The Express of the Future: Europe, The Center of Global Air Traffic—The Development of German Civil Aviation from its Beginnings to the Present), drawings by R. Hainisch, in: *Signal* 23 – 24 (1941) (Dezember), p. 53 – 55 and 58; and Kapeller, Ludwig: „L'Europe, centre de la circulation aérienne mondiale. Un voyage par avion dans l'Europe de demain” (Europe, The Center of Global Air Traffic: A Journey by Airplane in the Europe of Tomorrow), drawings by R. Hainisch, in: *Signal* 1 (1942) (Januar), p. 41 – 45.

tions,²⁴ and meteorological stations on the European continent,²⁵ along with methods for the allocation²⁶ and control²⁷ of energy. Eight of them were signed by Ludwig Kapeller (who was probably the author of the ninth one as well), the popular journalist and long-time contributor to the general interest magazines of the publisher Ullstein (which had been Ary-anized in the meantime), as well as the author of novels of detective fiction and a specialist on radio, whose impact he theorized in influential publications.²⁸ With the exception of one article vilifying utopian enemy projects such as “heating Siberia” by “domesticating the Gulf Stream,”²⁹ his contributions conveyed an optimistic vision evoking concrete, practical, and technical economic aspects that perform the “invaluable function of depoliticizing the European ‘question.’”³⁰ Like the exhibition “La France européenne” (European France, opened on June 1, 1941 at the Grand Palais), which sought to present the subject “in the most captivating

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- 23 Ka. (Kapeller, Ludwig): „En bateau à travers l’Europe. A propos de canaux et de projets” (By Boat Through Europe: Regarding Canals and Projects), in: *Signal* 13 (1942) (July), p. 35 – 36.
- 24 Kapeller, Ludwig: „L’Europe vous parle! Le passé de la T.S.F. et son développement à venir” (This is Europe Talking! The Past and Future Development of Wireless Telegraphy), drawings by Rodolphe, in: *Signal* 6 (1942) (March), p. 42 – 45.
- 25 Kapeller, Ludwig: „Le temps qu’il fait en Europe” (The Weather in Europe), drawings by Manfred Schmidt, in: *Signal* 3 (1942) (February), p. 40 – 43; and Ludwig, Kapeller, Ludwig: „Le temps sur le continent” (The Weather on the Continent), drawings by Hainisch, *Signal* 4 (1942) (February), p. 41 – 43.
- 26 Anonymous: „Nouvelles énergies pour l’Europe. Un problème d’aujourd’hui et de demain” (New Energies for Europe: A Problem for Today and Tomorrow), drawings by R. Hainisch, in: *Signal* 18 (1941) (September), p. 40 – 45, Kapeller is probably the author.
- 27 Kapeller, Ludwig: „On voudrait domestiquer le Gulf-Stream!” (They Want to Tame the Gulf Stream!), sketch by Hans Liska, in: *Signal* 7 (1942) (April), p. 23 – 27.
- 28 See Bendig, Volker: *Die populärwissenschaftliche Zeitschrift Koralle im Ullstein und Deutschen Verlag 1925 – 1944*, Ph.D. diss., Ludwig-Maximilians-Universität, München 2014, S. 194. It should be noted that *Signal* presented itself as the “illustrated supplement” for the highly popular *Berliner Illustrierte Zeitung (BIZ)*, and was published by *Deutscher Verlag*, which was created by the Aryanization of the publisher Ullstein.
- 29 Kapeller: On voudrait domestiquer le Gulf-Stream!
- 30 Bruneteau: L’Europe nouvelle, p. 66 ff.

manner possible,”³¹ Kapeller’s articles complemented the many others that were highly political in nature.

This attempt to remain close to the reader, which pushed the ideological dimension of the Nazi European project to the background, used an attractive layout and always placed the articles in the second half of the volume dedicated primarily to “apolitical” subjects (III. 1). The popularization of technical subjects was first rate, with incredibly thorough maps and explanatory diagrams breaking up the text of these long and meticulous articles (up to 4.25 pages, or 1/10th of the publication’s overall volume). They featured lively descriptions, with little caricatures or amusing drawings in color or in red, black, and white; charming anecdotes and details describe, for instance, the modernity and “full comfort” of mass air travel (“two millions travelers today with Lufthansa alone”), with “an ashtray and reading lamp on tray tables,” as well as and a “comely ‘stewardess’” who will bring you a glass of beer or a typewriter — “our radiotelegraph operator is at your disposal should you want to transmit a telegram.”³²



III. 1: “L’Europe, centre de la circulation aérienne mondiale” (Europe, The Center of Global Air Traffic), in: *Signal* 1 (1942) (January): p. 41–45, here p. 40–41.

31 Notat, Léo: „L’exposition de la France européenne”, in: *La Gerbe* 29 (1941), cited in Bruneteau: *L’Europe nouvelle*, p. 85.

32 Kapeller: *L’Europe. Centre de la circulation aérienne*, p. 41–42.

2.2 Networks as Drivers of Resource Exchange in the Service of Future Prosperity

Lehnau's article had already announced in May 1941 that transportation infrastructure was essential to "transform[ing] the heart of the continent into a vast flourishing garden," and emphasized the great wealth of "products that our tables could enjoy if Europe intensified its exchange of ideas and products." He already saw

on the horizon, above the battlefields, the emerging vision of a future Europe transformed into a great garden, which through its talent for organization, love of nature, and strength of thought could and should become a paradise at the center of the world.³³

This "vision" took very concrete manner in Kapeller's articles. Networks emerged as an essential way of compensating—to the benefit of all—for the productive shortfalls of certain European states,³⁴ on a continent marked by "airtight partitions [that] isolate the countries of a fragmented Europe."³⁵ In the field of energy for instance, one could "generously compensate for deficits by way of exchange, and distribute surplus energy according to needs. The high frequency cable [...] has quickly and without traffic created a state of equilibrium in Europe"; a "European electrical network" should therefore be created, and the "collection points of various countries linked"³⁶ in order to do so (Ill. 2). What was true for energy also applied to goods: thanks to rail transport, "the European of the future would be neither mediocre nor starving," for there would be a "distribution of these resources" and of the "work enabling their exploitation."³⁷

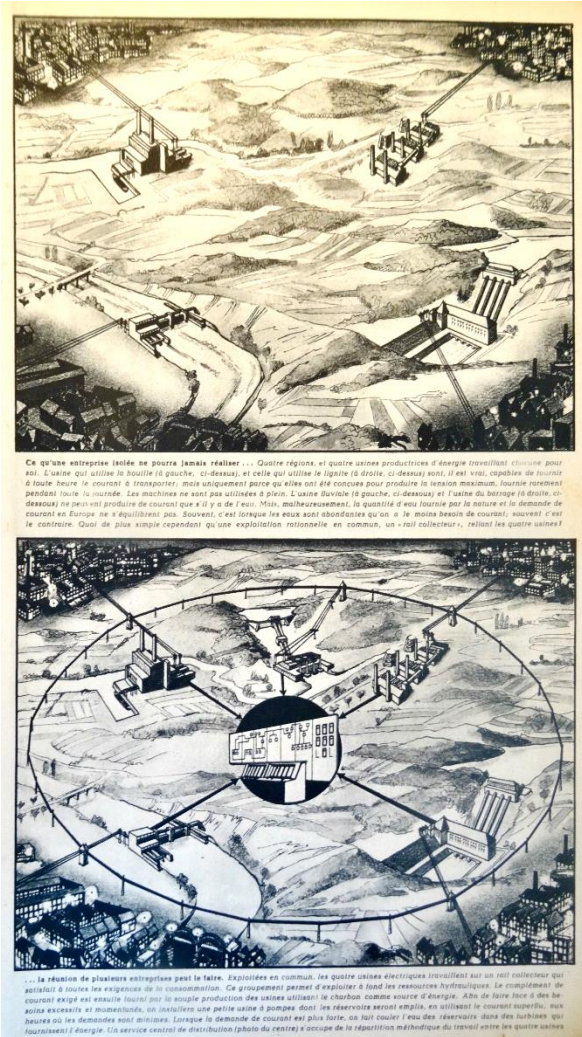
33 Lehnau: *L'Europe sera un jardin luxuriant*, p. 20.

34 Kapeller: *En bateau à travers l'Europe*, p. 35 – 36.

35 Anonymous: *Nouvelles énergies pour l'Europe*, p. 40.

36 *Ibid.*, p. 43f.

37 Kapeller: *Le trafic international*, p. 44.



Ill. 2: “What one company alone could never produce... the confluence of multiple companies can”, Anonymous: “Nouvelles énergies,” in: *Signal* 18 (1941) (September): p. 40 – 45, here p. 43.

The prosperity presented in Kapeller's articles—generating exchange and thereby economic well-being, with a concern for just distribution—was based on the idea of a “shared rational exploitation” of complementarity as part of a “reasonable program based on the continent's general interest.”³⁸ However, the rhetoric of the articles on networks also played greatly on the power of dreams; the persuasive nature of these articles was based on their capacity to project the reader beyond the painful present toward a future full of promises,³⁹ and it is not surprising that most of the articles were at least partly written in the future tense. Here is a representative but by no means isolated example:

Yesterday, dream; tomorrow, no doubt, reality: the channeling of the Upper Rhine into the heart of the Alps. [...] These projects [for canals] have long been under study, and the new Europe will carry them out, for today it is convinced of one thing: it is fighting for both its security and well-being for centuries to come, and that everything it endeavors today can only be of benefit to future generations.⁴⁰

By expanding this European project to include a global dimension,⁴¹ Kapeller also indicated that for future generations,

our globe will become too small [...] just as Europe no longer can satisfy the ambitious creative energy of our aviation pioneers, those who create and plan global air traffic, with Europe at the center. And we Europeans will all be proud one day that we dared to ‘start’ toward a new Europe.⁴²

2.3 Networks, Drivers of “European Identity” through the Movement of Persons and Ideas

As we saw in last final quotation, the seeds of the European continent's unification also gave rise to the figure of “the European,” the member of a

38 Anonymous: *Nouvelles énergies*, p. 40/43.

39 Here we see the appearance of a Nazi sociotechnical imaginary for Europe. On the notion of “sociotechnical imaginaries,” see Jasanoff, Sheila / Kim, Sang Hyun (ed.): *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago 2015. I would like to thank Léonard Laborie for this bibliographical reference.

40 Kapeller: *En bateau à travers l'Europe*, p. 35f.

41 The global project was that of a “new global economy of large complementary spaces,” as presented, for example, in the article by Prof. Dr. Hunke: “Le monde demande des produits et non des devises” (The World Wants Products Not Currency), in: *Signal 4* (1940) (Juni), p. 35.

42 Kapeller: *L'Europe centre de la circulation aérienne*, p. 44/45.

community of belonging built on collaboration and exchange. This topic appeared frequently in Kapeller's articles, which emphasized the movement of goods as well as persons, which is to say relations between humans, for one day:

Romanian barges from the Danube will move alongside those from the Spree, boatmen from the Rhine will visit their colleagues on the barges of the Dnieper, those from the Rhône will give accordion concerts on the barges of the Elbe. It will be in these internal ports that the continent's peoples will get to know one another, and the traffic of merchandise will be accompanied by the exchange of thought, goods, and cultures.⁴³

The struggle against the shared Bolshevik enemy surely contributed — “blood spilled together unites” — to the nascent sense of shared destiny and a “European consciousness.”⁴⁴ However, it was especially the growing movement of persons — soldiers and workers — during the war that would drive an “emerging personal knowledge” that could serve as the foundation for “future harmony.”⁴⁵ Thanks to the “mixing of millions of people,” each one can “have an idea of is happening with their neighbor in Europe.”⁴⁶ Migrations would also bring about a beneficial acculturation, especially with respect to integrating populations from the East destined to rejoin Europe⁴⁷; given that “the immense spaces of the East [...] expect the plane to bring about their spiritual and economic attachment to Europe,”⁴⁸ the key issue was to turn the “fertile lands that military operations have captured in the continent's East, Ukraine in particular,” into “the breadbasket for all of Europe.”⁴⁹

43 Kapeller: *En bateau à travers l'Europe*, p. 36.

44 Wirsing: *La naissance du soldat européen*.

45 Seiler, Anton: „La Relève débouree les crânes” (La Relève Has Opened Minds) [La Relève was a system in which French workers were exchanged for French POWs], in: *Signal 22* (1943) (November), p. 38. On this subject see especially the special issue of *Comparativ. Zeitschrift für Globalgeschichte und vergleichende Gesellschaftsforschung 28 1* (2018), hrsg. v. Barbara Lambauer and Christian Wenkel, on the topic “Entstehung und Entwicklung transnationaler Kommunikationsräume in Europa zu Kriegszeiten, 1914 – 1945.”

46 Wirsing, Giselher: „L'Europe sera-t-elle pauvre ?”, in: *Signal 15* (1943) (August), p. 8/11.

47 See Anonymous: „Nazalija. Fille de l'Ukraine”, in: *Signal 24* (1943) (Dezember), p. 42/43.

48 Kapeller: *L'Europe centre de la circulation aérienne*, p. 44/45.

49 Anonymous: *Hier – aujourd'hui – demain*, p. 60 – 65.

In addition to the exchange of goods and movement of persons, the immaterial exchanges made possible by telecommunication networks were presented as drivers for the sense of interdependence among European countries, which need one another to, among other things, make effective use of meteorological data.⁵⁰ Wireless telegraphy networks would create a vast space for cultural and “spiritual” sharing: the continent’s radio network, an “instrument of harmony among peoples”, had already transformed Europe into “a large audience hall where one could hear those great Europeans who had left their mark on human culture,”⁵¹ with music playing a leading role among the productions that constitute a “European cultural community.”⁵² The tone becomes messianic toward the end of the article, and announces the projection of a self-aware “Europe” toward the exterior:

A day will come when [...] Europe will become self-aware and will create its “great European broadcasting station,” which will be a radiophonic representative before the court of the whole world; a day will come when the call to the whole world will ring out through the microphone: “This is Europe talking.” Then the world will understand that Europe has been and is the cradle of human culture, and wants to remain so.

If networks enabled both material and immaterial contact — thereby creating a “vital European community space”⁵³ that is the bearer of an identity — they were presented as the initial result of a natural need to come together. Here we see the continent-wide application of a model inspired by Friedrich List,⁵⁴ one that was certainly relevant in the construction of the German nation-state: the need for exchange prompted the construction of (railway) networks, which in turn helped move beyond particularism and

50 Kapeller: Le temps qu’il fait en Europe.

51 Kapeller: L’Europe vous parle, p. 45.

52 See Burrin, Philippe: *La France à l’heure allemande: 1940 – 1944*, Paris 1995, p. 302.

53 To echo the expression used on a number of occasions, for instance in the article Anonymous: „Ni Roosevelt, ni Staline. L’Europe reste maîtresse de sa destinée” (Neither Roosevelt Nor Stalin: Europe Remains the Master of Her Destiny), in: *Signal 7* (1943) (April 1943, French edition only), p. 25.

54 The subject, for that matter, of a long portrait that subsequently appeared in *Signal*: Anonymous: „Ses projets se réalisent aujourd’hui. Un européen voici cent ans: Friedrich List. Friedrich List à l’écran dans ‘la route infinie’” (His Projects are Being Realized Today: A European 100 Years Ago: Friedrich List: Friedrich List on the Screen in “The Infinite Road”), in: *Signal 5* (1943) (März 1943), p. 30/31.

toward political unification (Kapeller formulated it by describing “the importance of a network methodically built to produce the union of Germany”).⁵⁵

This dialectic allowed Kapeller to ultimately present nascent European unification as the result of a process initiated “from below” (and not by a dominant Germany), and as a response to the various needs of the protagonists (and not as the maximal exploitation of the continent’s resources for the benefit of the Third Reich):

while the egotism of capitalist powers and the short-term ideas of small states [...] tore at the framework uniting European nations, exchanges between people and the circulation of trains between all countries repaired this tissue, reconnecting the thread [...] well before statesmen ever imagined what Europe could become.⁵⁶

Networks were thus central to a subtle argument that masked Germany’s real objectives, and presented it not as a tyrant, but as a benevolent body for coordinating “natural” interests, a humble coordinator of a “large network of solidary interests, in the image of fruitful cooperation.”⁵⁷

3. *Networks and the Legitimization of Germany’s “Leadership of Europe”*

3.1 A Proven Organizing Power

The recurring argument that these articles on networks used to explain why Germany could and must assume the natural leadership of European unification⁵⁸ was the emphasis placed on its organizational talents, which had proved worthy in the past and allowed it not only to develop its internal networks, but to also make European nations cooperate among themselves. Kapeller also offered a reminder of everything Germany had accomplished for “the development of civil aviation [...] from its beginnings to the present,” notably with “Central Europe’s first regular air connection between Vienna and Kiev” in 1918. He stressed that “from the beginning, Germany has endeavored to instill collaboration among European nations

55 Kapeller: *Le trafic international*, p. 42.

56 *Ibid.*, p. 41.

57 Lorch, Wilhem: „Huit extraits de presse et ce qu’ils cachent” (Eight Press Excerpts and What They Hide), in: *Signal* 16 (1943) (August), p. 36/37.

58 See the article cited in note 10.

in developing air travel,” with “a service [...] combining within a single group German, Danish, and Dutch companies” in 1919. Mention was also made of the spirit of innovation, whose “daring conceptions embraced the entire continent, and whose ultimate goal was to make Europe the center for global air traffic.”⁵⁹

Germany’s pioneering role in organizing railroad networks across the entire continent should spark the “admiration” of “today’s European,” for it was beginning in the nineteenth century that the “Union of German Railway Administration [...] established the methods for a traffic that benefits Europe”:

At the beginning of the World War, this Union included 90 companies, and its network extended across 11,300 kilometers, including 19 railways in Austria-Hungary, 5 in Holland and Luxembourg, 2 in Belgium, one in Russia, and the railroads of the Romanian state. The railroads of Denmark, Sweden, Norway, and Switzerland joined in 1929, and in 1932 the Union could proudly call itself the “Union of Central European Railway Administration.” It was this organization that planned traffic in Europe and laid the groundwork for the international conventions [...] that became applicable across the entire European continent.⁶⁰

The coordination of European actors was not the only condition for the emergence of continent-wide networks, for according to Kapeller, Germany had also thought out the connections between transport networks thanks to the effectiveness of its

administration [which] was [...] the first in Europe to arrange for its postal mailings to travel be airmail; it even went so far as instituting a home pick-up and drop-off service performed by employees on motorcycles.⁶¹

In pursuing these efforts, Hitler’s Germany had allowed,

through [its] wise and prudent administration, for the equitable division of merchandise transportation by road and rail in recent years,” and with respect to “competition on river pathways,” “the Reich once again paved the way, combining under one hand the administrations for both railways and water transport.”⁶²

The technical superiority visible in the realization of networks was another argument used to legitimize political and economic domination. In the intercontinental connections developed during the interwar period, and men-

59 Kapeller: *Le ‘train aérien*, p. 58 und 55.

60 Kapeller: *Le trafic international*, p. 42/43.

61 Kapeller: *Le ‘train aérien*, p. 55. The same argument is made in Kapeller, *L’Europe, centre de la circulation aérienne*, p. 42.

62 Kapeller: *Le trafic international*, p. 44.

tioned in the article “le train aérien” (The Aerial Train), Kapeller asserted that “German technical skill once again triumphed” with the production of “an airfield in the middle of the Atlantic.” The description made liberal use of superlatives:

the transoceanic line of 13,500 kilometers [...], the world’s longest. The planes serving it flew an average of 153 kilometers per hour, another record within a record. [...] It is therefore justified to say that the entrepreneurial spirit and inventive genius of German aviation pioneers had ultimately resolved the problems of transatlantic connections.⁶³

With regard to wireless telegraphy, Kapeller observed that “Europe’s first [radio] concert” in 1920 was the work of a certain Schwarzkopf at the “central broadcasting station of the Reich’s postal service,” and that “soon Europe would grow accustomed, each Sunday, to the concerts of the Königswusterhausen.”⁶⁴

The articles often stressed the formidable success of the past, proof of the country’s skill, which was also present in the field of road construction:

when it comes to creating a new Europe, the experienced acquired by the defenders of German sites will be highly appreciated, experience that is essential in the struggle against Europe’s transformation into a sterile steppe.⁶⁵

The present — that of an economic power and powerful political organization — also provided Germany with the means to achieve its ambitions. Emphasis was placed on the construction of networks, which include “installation costs [...] [that were] exceedingly high,” and call for “exceptional measures. They leave no place for the petty interests of particular individuals. The general interest is crucially important”; it is therefore imperative to leave behind the bygone conceptions “of the narrow-minded, those who support the fragmentation of Europe into little states.”⁶⁶ Dr. Todt was presented as an example of those who promoted and carried out this transition: “the creator of the *autostrades* [highways] and of the ‘Siegfried line’ [...] a far-sighted and energetic administrator,” he “shows all of Eu-

63 Kapeller: Le ‘train aérien’, p. 58.

64 Kapeller: L’Europe vous parle, p. 42.

65 Anonymous: Plus de routes droites, p. 25. This specter of *Versteppung* (“steppification”) is related to the period’s imaginary that described the landscapes of the East as “models” of desolation; see for instance Kapeller’s use of it in his article, “Le ‘train aérien,’” cited above.

66 Anonymous: Nouvelles énergies, p. 42.

rope the path to follow.”⁶⁷ Germany was also presented as showing the way for navigable routes: while waiting for the war’s end

to carry out Europe’s centuries-old dream, a Suez canal of sorts for the continent, a river route that would connect the Atlantic to the Black Sea, Adolf Hitler announced the project, in a law dated May 11, 1938, for the rapid creation of this connection by channeling the Danube past Vienna and up to the Reich’s border.⁶⁸

The representations that *Signal* wanted to diffuse to its readership were best reflected in the metaphor of the orchestra conductor,⁶⁹ whose “understanding and authoritarian” presence was needed to “direct the voices and bring them into harmony.” This metaphor appeared in Kapeller’s article on wireless telegraphy.⁷⁰ The International Broadcasting Union created by broadcasting companies proved unable to tame the “confusion of the waves”: “most European radio stations seek to lie and excite people. Instead of serving as a link, [...] radio [in the 1930s] only served to create new gulfs between peoples” until the Nazis took charge with the “shortwave receiver in 1933, diffusing German news in foreign languages” in order to “address listeners abroad in their own language.” This image of the benevolent coordinator/reconciler/harmonizer implicitly pervaded the other articles on Europe, which strove to show that “the peoples of Europe are genuinely expecting the victor to totally reorganize the general conditions of existence and their projects.”⁷¹

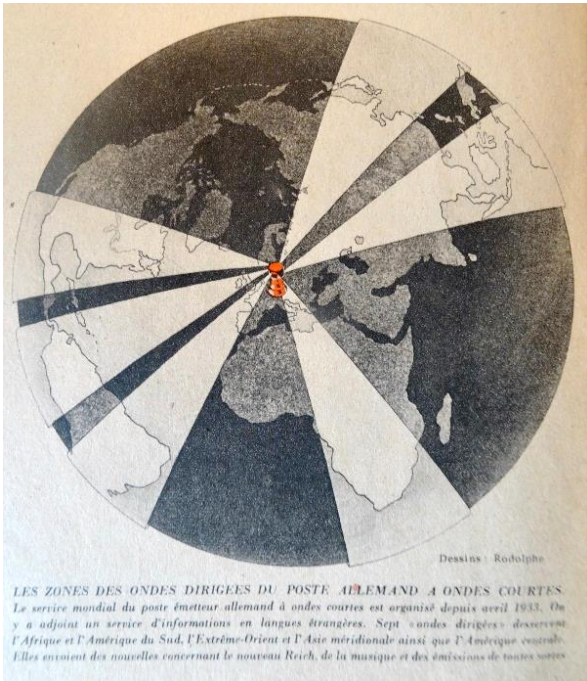
67 Ibid., p. 43.

68 Kapeller: En bateau à travers l’Europe, p. 36.

69 An archetypal figure that appeared regularly in *Signal*.

70 Kapeller: L’Europe vous parle, p. 42.

71 Clauss, Max: „1940. Décision européenne. L’Allemagne a débarrassé le continent de la guerre” (1940. European Decision. Germany Rid the Continent of War), in: *Signal* 15 (1940) (November), p. 4/5, 37.



Ill. 3: “L’Europe vous parle” (This is Europe Talking), in: *Signal 6* (1942) (March): p. 42 – 45, here p. 44.

Being behind “most of the technical progress [...] and improvements in the administrative field,”⁷² with a leader and political system able to make quick decisions and coordinate effectively — as well as the financial and technical means needed to create costly networks — Germany naturally must assume the leadership of Europe. This pro-German propaganda, which used a “virtue device,” was coupled with a propaganda effort denigrating the enemy, which tried to act as a “poison device,”⁷³ and was meant to ultimately garner support for the Reich’s ideas.

72 Kapeller: *Le trafic international*, p. 44.

73 “Virtue device” (promoting a person, idea, or party by associating it with “good” words and symbols) and “poison device” (the opposite, associating it with symbols of evil or detested values) is the terminology used by Clyde Miller, who was among the group of American scientists revolving around the Institute for Propaganda Analysis (1937 – 1942). See Bernard Huygue, François: *Maîtres du faire croire. De la propagande à l’influence*, Paris 2008, p. 60.

3.2 Contrasting Enemy Networks

In conformity with *Signal's* Manichean strategy, the legitimization of German hegemony was also based on discrediting the enemy, with the issue of networks offering numerous arguments in this respect. The systematic denigration of adversaries was aimed at the Soviet enemy in particular.⁷⁴ Reports on the USSR presented the state of “Soviet roads” (Ill. 4) and compared them with the exemplary constructions of Hitler’s Germany,⁷⁵ thereby giving the editors very concrete elements to justify the civilizing mission directed toward the peoples of the East (knowing that the “new and self-aware Europe will absorb [...] the great spaces of the East, which will have to be initiated in European culture and civilization”).⁷⁶ Kapeller’s articles forcefully developed arguments found elsewhere in *Signal*, which pointed out that the “means of transportation are not even at the level of those found in Europe 50 years ago.”⁷⁷ Kapeller the observer, who contributed to the “Central Europe’s first airmail line” in 1918, scornfully related how while flying over Russia he saw “the famous Vienna-Kiev, which when everything went well, took forty hours to make its journey,” “crawl[ing] miserably through the forest” and “mournful steppes.”⁷⁸

74 On the USSR’s image in *Signal*, see Saur, Sébastien: “*Signal*” et l’Union soviétique 1940 – 1944, Parçay-sur-Vienne 2004.

75 These were abundantly present right from the launch of *Signal*, for instance in June 1940 when “the Inca road” — made possible through “mandatory labor service and constant cooperation of all efforts” — was described as a “precursor of the Reich’s highways.” See Uberlohde-Doesing, Heinrich: „La 8e merveille du monde. Les routes interminables des Incas” (The Eighth Wonder of the World: The Neverending Roads of the Incas), in: *Signal* 4 (1940) (Juni), p. 23 – 25, 34.

76 Kapeller: Le trafic international, p. 44.

77 Graf, Engelbert: „Des espaces sans fin. La configuration géographique de l’Europe orientale” (Endless Spaces: The Geographical Configuration of Eastern Europe), in : *Signal* 1 (1942) (Januar), p. 8.

78 Kapeller: Le ‘train aérien’, p. 54.



Ill. 4: “Comment nous avons pris d’assaut Kichinev” (How We Took Kichinev by Storm), in: *Signal* 17 (1941) (September): p. 12 – 17, here p. 16/17.

England was primarily attacked on another front, being designated as a selfish, petty, and cowardly power jealous of German success, and completely anti-European in its approach to networks. For instance, in his remarks on the development of air networks, Kapeller described, for the period succeeding the Treaty of Versailles (especially targeting England), how enemies restricted “the German spirit of initiative,”⁷⁹ and how at the same time the English “allowed Lufthansa and Air France to assume the risks of flights over the Atlantic.”⁸⁰ With respect to railways, England “could have joined the European network, but scornfully [...] conserved its attitude of splendid isolation,” and “sabotaged” various European projects.⁸¹ For air networks, “collaboration has been established between various companies,” whereas “Imperial Airways remains in its ivory tower.”⁸² While the “organization [of the] meteorological service is a European undertaking.”

79 Ibid., p. 55.

80 Kapeller: L’Europe, centre de la circulation aérienne, p. 41/42.

81 Kapeller: Le trafic international, p. 43.

82 Kapeller: L’Europe, centre de la circulation aérienne, p. 41/42.

at a meteorological congress in Friedrichshafen, the English delegate declared with a haughty smile that his compatriots preferred not to participate in the meteorological service of Europe [rather] than renounce their habit of measuring temperature in degrees Fahrenheit... [...] England also persisted in its 'splendid isolation' [in English] in the field of meteorology, as it did in the European conventions for railways and aviation.⁸³

Another kind of rhetoric was used for the American enemy, which was simultaneously discredited and presented as a danger for Europe. In an article from its series on Europe and large-scale network and infrastructure projects, Kapeller exposed the ineptitude of American projects to tame the Gulf Stream, which reflect the "bluff of American science" seeking to deprive Europe of "the central heating carried by the distant conduits of the Gulf-Stream." "The American E. F. Gagott declared that 'The Gulf Stream belongs to us!' and with a straight face asserted that it is possible, for the benefit of America, to capture this current vital for life in Europe just as it exits the Gulf of Mexico."⁸⁴ In an article from the same period, but not signed by Kapeller, ridicule was heaped on the American project to connect the "USA" and the "UdSSR" [sic] using the ice road through Alaska,⁸⁵ in an effort to supply their "Bolshevik friends" with "war materiel" to the detriment of Europe caught between the two powers.

83 Kapeller: *Le temps qu'il fait en Europe*, p. 42/43.

84 Kapeller: *On voudrait domestiquer le Gulf-Stream*, p. 26.

85 Anonymous: „Le grand plan de Roosevelt: la route de glace par l'Alaska" (Roosevelt's Great Plan: The Ice Road Via Alaska), in: *Signal 11* (1942) (Juni), p. 4/5.



Ill. 5: “Le grand plan de Roosevelt: la route de glace par l’Alaska” (Roosevelt’s Great Plan: The Ice Road Via Alaska), in: *Signal* 11 (1942) (June): p. 4/5.

American networks in particular were represented by highly specific metaphors, first with evocations of “the dollar’s imperialism extend[ing] across the globe, like the tentacles of a giant octopus,”⁸⁶ and then by representing “the air network encircling the globe”⁸⁷ like a spider web (Ill. 6). Repeating codes used in anti-Semitic productions,⁸⁸ these images proposed an implicit parallel between supposed Jewish domination and “the United States coldly building its power,”⁸⁹ striving to obtain “a monopoly

86 Johann, A. E.: „Roosevelt, empereur du monde ?” (Roosevelt, Emperor of the World?), in: *Signal* 18 (1941) (September), p. 4/5, 33/34.

87 Anonymous: „Bases aériennes et suprématie mondiale” (Airbases and Global Supremacy), drawings by R. Hainisch, in: *Signal* 9 (1943) (Mai), p. 4 – 6.

88 See Aslangul, Claire: „Faire peur, faire ‘vrai’: *Der ewige Jude*. Objectifs, procédés et paradoxes d’un ‘documentaire’ antisémite,” in: *ILCEA. Revue de l’Institut des langues et cultures d’Europe, Amérique, Afrique, Asie et Australie* 23 (2015). URL: <https://ilcea.revues.org/3402>. Also see the examples proposed by Joël Kottek, “Qu’est-ce qu’une caricature antisémite? Essai d’explication historique et politique,” available at: <https://isgap.org/flashpoint/quest-ce-quune-caricature-antisemite-essai-dexplication-historique-et-politique/> (accessed on August 4, 2020).

89 Anonymous: Bases aériennes et suprématie mondiale.

an organicist perspective demonstrating that the editorial board of *Signal* had embraced the concepts and language used in decision-making circles,⁹² Europe was conceived of as a living organism that must develop according to the principles of a “vital order,”⁹³ all of whose organs are dependent on one another:

Railways form the circulatory system of Europe; telephone and telegraph cables represent the nervous system; the thin lines of high-frequency currents stretching in bold arcs throughout the country depict its system of tendons: it is they that transmit energy. [...] The energy sources and consumption needs, driven by all of these systems, like the human body, appear to swing and balance themselves in harmonious proportions.⁹⁴

lohde-Doesing, *La 8e merveille du monde*, p. 34, which evokes “roads that, like arteries, crisscross the Empire’s immense body.”

92 See for example Bauer, Raimund: “‘Auch die neue europäische Wirtschaft muß organisch wachsen’. Walther Funks Rede ‘Die wirtschaftliche Neuordnung Europas’ vom 25. Juli 1940 im Kontext zeitgenössischer Europavorstellungen,” in: *Themenportal Europäische Geschichte* (2016): <www.europa.clio-online.de/essay/id/fdae-1669>.

93 References to the “natural” or “biological order” were present everywhere, especially in: Anonymous “Plus de routes droites!”

94 Anonymous: *Nouvelles énergies*, p. 41.

In *Signal*, trans-European networks were “symbol[s] of modernity and agent[s] of openness,” performing a clear function of “symbolic integration”; they were especially deployed as “sign[s] of technological and economic collaboration,”⁹⁵ basically functioning as *proof by example* of the feasibility of European collaboration. They represented a concrete model for potential future cooperation in all fields, for they helped overcome fragmentation, particularism, and differing policies: “from the beginning, European traffic was [...] based on mutual confidence, a confidence of harmony that had never before been present in the political field.”⁹⁶ Earlier trans-European realizations, which were the result of real cooperation in various domains, in addition to major investment by German authorities in networks on German soil (train, post, canals, telephone, air connections)—which helped to build Germany and again make it central to the (Central) European economy after 1918⁹⁷—were ably staged and used, helping to sustain for *Signal*’s readers the “mechanisms of illusion”⁹⁸ garnering support for the “new Europe” project of numerous intellectuals.

It is difficult to assess the actual effectiveness of this propagandistic use of networks, or the general impact that *Signal*’s European rhetoric had on its readership. The articles on the subject, especially those by Kapeller aiming for closeness and support, clearly offered an attractive front through their didactic and entertaining form, as well as their content. In keeping with the continent’s unification as a process, in which economic and human exchange preceded institutional and political organization, the reader of the time could see the almost “natural” legacy and accomplishments of earlier reflections and initiatives, just as today’s reader can recognize the beginnings of the “functionalist” conception of Europe that led to the ECSC/CECA. Yet it is important to be clear that this was indeed the Nazi vision of History that way being diffused, with its rhetoric of a Euro-

95 Paraphrasing what Bruneteau: “L’Europe nouvelle”, p. 107, said about the highways connecting Eastern Europe to Western Europe. On the integrating function of the “Reich’s autostrada,” which took on the dimension of a “myth,” and which we can imagine the propagandists projected throughout all of Europe, see Reichel, Peter: *Der schöne Schein des Dritten Reiches. Faszination und Gewalt des Faschismus*, Frankfurt 1993, S. 280 ff.

96 Kapeller: Le trafic international, p. 43.

97 See for example Schröter, Harm: „The German Long Distance Telephone Network as a Large Technical System, 1919 – 1939, and its Spin-offs for the Integration of Europe,” in: Caron, François / Erker, Paul / Fischer, Wolfram: *Innovations in the European Economy between the Wars*, Berlin 1995, p. 83 – 105.

98 Bruneteau: “L’Europe nouvelle”, p. 77.

pean body in need of regeneration, and its opposition to the networks of others, replete with deadly spider webs and tentacles.

5. References

- Aslangul, Claire: „Le magazine *Signal* (1940 – 1945). Propagande ‘universelle’ ou adaptation à des publics hétérogènes? L’exemple de la version francophone,” in: *Matériaux pour l’histoire de notre temps* 1 (2020).
- Aslangul, Claire: „*Signal* et la France: ‘vendre’ par l’image le rapprochement franco-allemand sous l’Occupation,” in: Aslangul-Rallo, Claire / Krapoth, Stéphanie (eds.): *Les relations franco-allemandes en perspective: sources, méthodes et temporalités pour une approche des représentations depuis 1870*, Besançon 2016, p. 259 – 318.
- Aslangul, Claire: „Faire peur, faire ‘vrai’: *Der ewige Jude*. Objectifs, procédés et paradoxes d’un ‘documentaire’ antisémite”, in: *ILCEA. Revue de l’Institut des langues et cultures d’Europe, Amérique, Afrique, Asie et Australie* 23, Grenoble 2015. URL: <https://ilcea.revues.org/3402>.
- Kotek, Joël: „Qu’est-ce qu’une caricature antisémite? Essai d’explication historique et politique,” available at: <https://isgap.org/flashpoint/quest-ce-quune-caricature-antisemite-essai-dexplication-historique-et-politique/> (accessed on August 4, 2020).
- Aslangul, Claire: „Les publicités dans le magazine *Signal* (1940 – 1945) entre promotion commerciale et propagande politique: apports d’une analyse quantitative,” in: Aslangul, Claire / Zunino, Bérénice (ed.): *Die Presse und ihre Bilder / La presse et ses images*, Berlin/Bern 2021.
- Bauer, Raimund: „Auch die neue europäische Wirtschaft muß organisch wachsen’. Walther Funks Rede ‘Die wirtschaftliche Neuordnung Europas’ vom 25. Juli 1940 im Kontext zeitgenössischer Europavorstellungen”, in: *Themenportal Europäische Geschichte* (2016): <www.europa.clio-online.de/essay/id/fdae-1669>.
- Bendig, Volker: *Die populärwissenschaftliche Zeitschrift Koralle im Ullstein und Deutschen Verlag 1925-1944*, Ph.D. diss., Ludwig-Maximilians-Universität München 2014.
- Bruneteau, Bernard: “*L’Europe nouvelle*” de Hitler. *Une illusion des intellectuels de la France de Vichy*, Monaco 2003.
- Burrin, Philippe: *La France à l’heure allemande: 1940-1944*, Paris 1995.
- Huygue, François-Bernard: *Maîtres du faire croire. De la propagande à l’influence*, Paris 2008.
- Jasanoff, Sheila / Hyun Kim, Sang (ed): *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago 2015.
- Longerich, Peter: *Propagandisten im Krieg. Die Presseabteilung des Auswärtigen Amtes unter Ribbentrop*, München 1987.
- Neulen, Hans Werner: *Europa und das Dritte Reich. Einigungsbestrebungen im deutschen Machtbereich 1939 – 1945*, München 1987.

Reichel, Peter: *Der schöne Schein des Dritten Reiches. Faszination und Gewalt des Faschismus*, Frankfurt 1993.

Rutz, Rainer: „Signal.” *Eine deutsche Auslandsillustrierte als Propagandainstrument im Zweiten Weltkrieg*, Essen 2007.

Saur, Sébastien: *“Signal” et l’Union soviétique 1940 – 1944*, Parçay-sur-Vienne 2004.

Schröter, Harm: „The German Long Distance Telephone Network as a Large Technical System, 1919 –1939, and its Spin-offs for the Integration of Europe,” in Caron, François / Erker, Paul / Fischer, Wolfram (eds.): *Innovations in the European Economy between the Wars*, Berlin 1995, p. 83 – 105.