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# What a housewife should know: popularising electric devices in the Barcelona of the nineteen-thirties

## Résumé
Dans les pays développés, l'électrification des foyers a été une étape de la modernisation, aboutissant dès le début des années 1930 à une présence de l'électricité dans tous les domaines de la vie quotidienne. Dans le cas de l'Espagne, ce ne fut toutefois pas le cas avant la fin des années 1950. Les raisons de ce décalage sont diverses : entre autres, une position géographique périphérique, un marché fragmenté ou une distribution hétérogène de l'approvisionnement en énergie sur le territoire espagnol. Néanmoins, certaines initiatives ont été lancées dans les zones les plus peuplées comme Barcelone, où les salles d'exposition d'électroménagers ont commencé à apparaître dans les centres-villes. Cet article analyse l'une des initiatives de popularisation des appareils électriques les plus marquantes, la revue spécialisée *Electricidad Industrial y Doméstica* (Électricité domestique et industrielle), lancée par un groupe indépendant de professionnels entre 1930 et 1933. L'objectif d'*Electricidad Industrial y Doméstica* était de populariser et d'enseigner l'usage des appareils électroménagers et de l'éclairage électrique. Le contenu comprenait des avis d'experts sur les nouveaux appareils et des conseils sur leur bonne utilisation, des traductions d'articles étrangers concernant des nouveautés et des applications inattendues, des réponses aux questions formulées par les lecteurs et des bandes dessinées sur les appareils. L'un des objectifs explicites était d'expliquer «ce que les femmes doivent savoir sur l'électricité». Même si les femmes étaient ainsi placées au poste de commande des installations électriques à la maison, l'électricité n'en perpétua pas moins leur position subordonnée, cantonnées aux tâches domestiques dans une société qui restait profondément patriarcale.

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## INTRODUCTION

1 Spain's electricity consumption increased continuously in the years preceding the Civil War. The consumption in 1931 was almost 35% higher than in 1927, while 1934 was more than 58% higher than in 1927 and 16% higher than in 1931.[1] However, the electrification process was far from being homogeneous. Catalonia was one of the most electrified areas of the country, and around 1930 it is considered that the industry was electrified.[2] The large hydroelectric plants of the Pyrenees were in operation, and some thermal plants were running in the Barcelona area.[3] The tramway and the first subway lines, both operated with electricity, spread their tentacles all over the city. Barcelona and its surroundings had an established and operating electricity network, and electricity illuminated the houses at night in this area.

2 In the aftermath of the Barcelona International Exhibition of 1929, electric lighting flourished in the city. Some companies launched several initiatives to increase both the number of subscribers and the consumption of existing subscribers: showrooms, neon lights in public spaces, press announcements or demonstration trucks, among others.[4] However, despite the increase in aggregate consumption and being the most electrified area in Spain, Catalonia's household consumption was still far from that of the countries pioneering household electrical appliances.[5] If we add to this delay the effects of the Spanish Civil War and the tough post-war period,[6] it follows that the social and economic changes that electric devices could introduce in domestic life did not have a significant impact until the mid-1950s.

3 The literature, the cinema and the people's memory describe life in Spanish cities in the 1940s and 1950s as having electric light and radio, but no electric refrigerators or vacuum cleaners, and without any of the small electrical appliances that had been available for twenty years. This article explores the first attempt to popularize electricity for domestic uses in Spain, which was suddenly interrupted by the civil war before it achieved its objectives.

4 The paper is structured in three sections. In the first one, we will discuss how life in an electrified home is envisioned by the influencers who analysed the situation and established the framework of the popularization initiatives. The following section will analyse one of these initiatives in depth, the journal *Electricidad Industrial y Doméstica* (Industrial and Domestic Electricity), published in Barcelona between 1931 and 1933. Finally, the last section before the conclusions analyses how the journal contents try to make women feel key players while placing them in a subsidiary role.

1 The average annual consumption per inhabitant was estimated at 92 kWh in 1927, at 125 kWh in 1931 and 146 kWh in 1934. Jordi Maluquer de Motes, "Cataluña y el País Vasco en la Industria Eléctrica Española, 1901-1935", in Manuel Gonzalez Portillo et al (eds.), *Industrialización y Nacionalismos: análisis comparativo* (Bellaterra: Servei de Publicacions de la Universitat Autònoma de Barcelona, 1985), 242.

2 Jordi Maluquer de Motes, "L'électricité, facteur de développement économique en Espagne: 1900-1936", in Fabienne Cardot (ed.), *1880-1980. Un siècle d'électricité dans le monde* (Paris: Presses Universitaires de France, 1986), 63.

3 According to Alayo, by the end of 1930, Power Companies had built 12 large hydroelectric plants in Catalonia. By 1936, 15 had been built, and 48 remained to be made. However, only 29% of the available power was in operation, and even then, there was a surplus. There was also a surplus of energy during the hours of low industrial consumption. Joan Carles Alayo, *L'electricitat a Catalunya. De 1875 a 1935* (Lleida: Pagès Editors, 2007), 865.

4 To know about strategies related to lighting, see Jordi Ferran Boleda and Agustí Nieto-Galan, "The city of electric light: Experts and users at the 1929 international exhibition, and beyond", in Agustí Nieto-Galan and Oliver Hochadel (eds.), *Barcelona, an Urban History of Science and Modernity, 1888-1929* (Oxon: Routledge, 2016), 223-244.

5 Sintes Olives indicated that the average annual consumption of Spanish households was between 100 and 300 kWh, far from the consumption volume of the most advanced countries such as the United States (between 500 and 600 kWh) and even further from the average consumption of a fully electrified household (between 6,000 and 8,000 kWh). Francisco F. Sintes Olives, *La electrificación del hogar doméstico* (Madrid: Espasa-Calpe, S.A., 1934), 13. The source did not identify the year of the data he mentioned.

6 Mercè Tatjer Mir, "La industria de material y aparatos eléctricos en Barcelona, 1981-1970", in Miriam H. Zaar, Magno Vasconcelos P. J., and Horacio Capel (eds.), *La electricidad y el territorio. Historia y futuro* (Barcelona: Universidad de Barcelona, Geocrítica, 2017), 9.

## THE EXPERTS' ANALYSIS

5 "In general, Spanish Electrical Companies have not given modern and rational publicity the relevance it deserves until now." This sentence opens the last section of the chapter about Electrical Advertising in an in-depth book about the Electrical Industry situation in Spain published in 1933 by Francisco Sintes Olives and Francisco Vidal Burdills.[7] The study compared several strategies that foreign companies, specifically from the United States, used to increase electricity consumption and electric devices' sales, with the one carried out in Spain.

6 Francisco F. Sintes Olives,[8] an engineer and lecturer, and Francisco Vidal Burdills,[9] a lawyer working in the electric industry were two of the experts leading popularization initiatives on domestic electrification. From their perspective and as members of the electricity sector, the home was ideal for increasing electricity consumption once lighting-related initiatives had started and were working reasonably well. They replicated the model developed in countries like the United States, Switzerland and Germany, where this electrified home model represented the highest comfort level. They even dared to theorize about what an electric home should be like, quantifying both the number of appliances a household should have and the increase in consumption that their installation and use would entail.[10] According to their estimations, a fully electrified household would have a twenty-fold increase in electricity consumption compared with a household using electricity only for lighting. Such a scenario would represent an extraordinary opportunity for the electricity companies, even if it required a readjustment of the prices to ensure that a significant number of families could bear this cost. The Power Companies would welcome any increase in consumption that would better return on their investments.

7 Although they do not provide accurate or contrasted data, Sintes Olives and Vidal Burdills believe that there were many households with an acceptable level of electrification in some Spanish cities, which they estimate to be around ten electrical appliances.[11] Nor do they make explicit what these ten devices are. Furthermore, they did not clarify either how the economic level influenced the incorporation of electricity in the home, although the appliances' price may give us some clues, as we will see below. Experts believed that the main reason for not achieving the "maximum" comfort that the "fully-electrified home" could provide was the lack of information. For this reason, popularization campaigns were crucial to increasing devices' sales and electricity consumption.

7 Francisco F. Sintes Olives and Francisco Vidal Burdils, *La industria Eléctrica en España. Estudio económico-legal de la producción y consumo de electricidad y de material eléctrico* (Barcelona: Muntaner y Simón, 1933), 838.

8 Francisco Faustino Sintes Olives (n1900) was an engineer, a lecturer on the Escola Industrial and the Universitat Autònoma de Barcelona (the University of Barcelona during the Second Republic period).

9 Francisco Vidal Burdils (1901-1955) was a lawyer and publicist working on the company *Fuerzas Eléctricas de Catalunya, S.A.*

10 They described two stages in the process of electrification. The first stage, the "half-electrified home," had seven electrical appliances (lighting, iron, sewing machine, vacuum cleaner, heated pillow, bread toaster and fan). The second stage was the "fully-electrified home," which they set at 20 electrical appliances ("a maxim that is, in a way, the quintessence of domestic electrification"), despite recognizing the difficulties of reaching these figures. The second stage list expanded those in the first one with the following ones: coffee maker, stove, washing machine, pot, massage machine, hairdryer, dishwasher, foot-warming pad, curling irons for hair, fridge, stove, oven and water heater. It seems that they chose the appliances on each list to cover a wide range of domestic tasks rather than an honest assessment of the processes of incorporating these appliances in the home. Otherwise, it is not clear what would be the reason for including in the first list elements such as the sewing machine or the vacuum cleaner, which are much more expensive and therefore more challenging to incorporate than, for instance, electrical kitchen utensils. Sintes Olives and Vidal Burdills, *La industria eléctrica en España*, 722 (cf. note 7).

11 Differences between urban and rural environments were huge in terms of socio-economic development and consumption patterns, and lifestyles. Javier Tusell, *Historia de España en el siglo XX*. Vol. II (Madrid: Taurus, 1999), 5. In 1930, Spain's rural population was 62.9% of the total population. Xavier Tafunell, "Urbanización y vivienda", in Albert Carreras and Xavier Tafunell (eds.), *Estadísticas históricas de España. Siglos XIX-XX* (Bilbao: Fundación BBVA, 2005), 486.

8 We do not have enough data to determine who the potential customers of these electric devices were. Besides, there are no statistics on the distribution of electrical appliances in Catalonia in the first half of the twentieth century.[12] However, indirect sources provide some context. For instance, an advertisement mentions that more than four thousand water heaters were already installed in Barcelona in May 1929.[13] In the same way, an ad for General Motors' *Frigidaire* reported about six thousand refrigerators in operation in Spain in 1934.[14] In both cases, these figures represented a negligible proportion of households.[15]

9 Without further information, the prices can also explain the population segment to which each device was addressed. According to the advertisements published in the conservative newspaper *La Vanguardia*, it was possible to buy an iron from 7 Pesetas (28 December 1930, 35); a fan from 22.5 Pesetas (14 June 1931, 31); or a heater from 45 Pesetas (17 November 1929, 37). A light bulb, the cheapest electric appliance, could be found for 2 Pesetas (10 May 1932, 35). In contrast, a refrigerator could easily reach prices close to 1,000 Pesetas (25 May 1935, 38). Considering that the basic wage of a textile worker in Catalonia in 1935 was between 37 and 41 pesetas a week,[16] we can infer that beyond lighting or ironing, the target of the information campaign about electrical appliances was the medium-high class.

10 Obsessed with the need to establish a handbook of advertising for the Power Companies, Sintes Olives and Vidal Burdills suggested that young women be sales agents. They pointed out two reasons: they could convince the women of the use of electric devices easily, and they would receive lower salaries than the male salesmen. As we will see in the following sections, women were the target of most advertisement messages. Newspapers or magazines delivered generic ideas such as "Electricity means comfort,"[17] or more focused ideas such as "the comfort in their home is the most vehement yearning of all family mothers eager to contemplate the joy, well-being and health of their family."[18] Therefore, electricity had to become women's yearning. As for the discourse experts delivered, women would want to obtain electrical appliances because electricity was synonymous with prosperity, made life pleasant, and facilitated housework. A splendid summary of what this policy of diffusion of electricity meant was one of the leading slogans of the time: "Electrify your house. Make it home."[19]

## THE JOURNAL ELECTRICIDAD INDUSTRIAL Y DOMÉSTICA

11 Despite the complaints about the lack of efforts to educate users about the benefits of domestic appliances discussed in the previous section, some relevant initiatives did take place. For example, some of the power companies introduced spaces devoted to electrical appliances in their lighting showrooms and some manuals,

12 A paper on *EID* considered the iron, the heater and the fans as the most widespread appliances in domestic use. Bozal, A., "La electricidad en el hogar moderno", *Progreso Eléctrico*, nº 33, 1933, 3. Capel considers that the iron and the fan were introduced to homes in the 1920s, the radio and the hairdryer in the early 1930s and the vacuum cleaner and the refrigerator in the mid-1930s. Horacio Capel "La electricidad en Cataluña, una historia por hacer", in Horacio Capel (eds.), *Las Tres Chimeneas. Implantación industrial, cambio tecnológico y transformación de un espacio urbano barcelonés* (Barcelona: FECSA, 1994), vol. 3, 165-216. Tatjer has the same problem in her analysis of the introduction of washing machines. Mercè Tatjer Mir, "La electricidad en el lavado de la ropa doméstica y colectiva. Un lento proceso desde las lavadoras manuales hasta la difusión de las lavadoras eléctricas: Barcelona 1880-1990", in Horacio Capel and Miriam H. Zaar, *La electricidad y la transformación de la vida urbana y social* (Barcelona: Universidad de Barcelona/Geocrítica, 2019), 444-459.

13 Advertisement for water heaters "IRIS" published in *La Vanguardia*, in May 16th, 1929, 10.

14 Advertisement for"Frigidaire" refrigerators published in *La Vanguardia*, in 23 November 1934, 1.

15 The estimated number of urban dwellings in Barcelona's province in 1930 was 353,000, and in Spain in 1930 was 2,644,700. Tafunell, "Urbanización y vivienda", 490 (cf. note 11).

16 Montserrat Llonch Casanovas, "Jornada, salarios y costes labores en el sector textil catalán (1891-1936)", *Revista de Historia Industrial*, 26, 2004, 101-139.

17 Advertisement, *Progreso Eléctrico*, nº 29, 1932, 12.

18 Francisco Vidal Burdills, "El confort en el hogar por la electricidad", *Electricidad Industrial y Doméstica*, nº 2, 1930, 4.

19 J. A. Corcovan, "Electrifique su casa. Conviértala en hogar", *Electricidad Industrial y Doméstica*, nº 3, 1930, 22.

Electricidad Industrial y Doméstica

Revista Mensual dedicada al fomento de la Electricidad en el hogar, la Industria y el Comercio

Subscripción: 6 Ptas. año | Redacción y Administración: Aragón, 60, pral., 2.ª - Teléf. 31994 - Barcelona | N.º 13 | 1.º de Agosto de 1931

Cálculo teórico del consumo de los aparatos utilizadores de fluido eléctrico

COSAS DE HOY

**Figure 1**: Cover of the journal *Electricidad Industrial y Doméstica*. Source: *Electricidad Industrial y Doméstica*, nº 13, 1931, cover.

books, magazines and pamphlets praising the electric home that started to emerge appeared. In addition, broadcast conference series emphasized the message in an attempt to reach a wider audience.

12 One of the best examples of the strategies used to promote the benefit of electricity among domestic users is the journal *Electricidad Industrial y Doméstica* (Domestic and industrial electricity) (EID). Launched in Barcelona in 1930, the magazine was an independent initiative created with no support from the local Electric Companies even though they shared the same objectives (Figure 1). Several EID articles pointed out that the journal could impact electricity consumption positively and encouraged investing in it by employing advertisements.[20] As a consequence of its success, Companies participated in journal distribution, and some of them used to buy copies each month to distribute the journal for free among their customers.[21] Through these networks of complicity, the magazine distributed almost 30,000 copies per month.[22]

The journal aimed "to increase electricity consumption through its use in the common housework."[23] EID contributors were indeed heterogeneous: from university professors to lawyers; from engineers to salespeople. Also, consumers participated with articles and letters. The diversity of contents ranges from news on the opening of a showroom in Barcelona to news of unexpected uses of a particular appliance. From a recipe elaborated with an electric oven to the precise technical description of an electric kitchen. In some cases, it is difficult to discern whether what we read is a corporate advertisement, the unconditional support of an electric devices fanatic, an instruction manual, a scientific popularization article or a domestic educational textbook. 13

Considering the references made in the articles regarding questions from readers and the calls for reader participation, the editors intended to involve the public in the magazine's contents. For example, as part of a new format, a competition was launched among readers to change the title. The prize was a fan. The new title was *Progreso Eléctrico* (PD) (Electric Progress), the magazine's name from September 1931 onwards. As reported in the notice announcing the new title, two people agreed on the proposal.[24] The link between electricity and progress, which the editors did not dare to include in the original title, emerged some time later at the readers' suggestion. 14

*Electricidad Industrial y Doméstica*, nº 2, 1930, 22.

**21** "Una labor intensa", *Electricidad Industrial y Doméstica*, nº 3, 1930, 3.

**22** "La Transformación de nuestra revista", *Electricidad Industrial y Doméstica*, nº 7, 1931, 1.

**23** "El éxito de nuestro primer número", 22 (cf. note 20).

**24** "Redacción", *Electricidad Industrial y Doméstica*, nº 13, 1931, 7.

**20** "Cooperación Necesaria", *Electricidad Industrial y Doméstica*, nº 2, 1930, 2; "El éxito de nuestro primer número",

15 *Electricidad Industrial y Doméstica* participated in the tradition developed in the first stages of electrification that connected electricity and modernity.[25] Its discourse insisted that the home had been apart from these advances until then, and it was time to change things. Electricity was like a goddess that promises a spectacular future, predicting applications that would take nearly 70 years to become available: "our newspaper will be published in our home, and news will be known in any remote place immediately after being published."[26] All these messages were technologically optimistic and left no space to criticize electricity's ability to improve the users' quality of life.

16 Whereas modernity came along with an optimistic message with limited interest in technological contents, the journal also focused on electricity efficiency and economy. In contrast to what Sintes Olives and Vidal Burdills thought, the magazine's editors focused on the cost of the devices and the electricity supply making it difficult to achieve a rapid and massive expansion. Consequently, much effort was devoted to changing the perception of the high cost of the electricity supply. The journal explained technical terms such as kilowatt or kilowatt/hour and introduced some examples of particular costs, such as ironing for two hours (0,20 pesetas) or preparing two cups of coffee (0,02 pesetas).[27] It was a way to convince potential users that electricity was affordable. Power companies also adopted this strategy, which had a clear gender bias: for instance, when addressing the women, such costs were compared to the price of the sandwiches for a party;[28] while when addressing the men, the comparison was against the cost of a newspaper, a pack of cigarettes or a box of matches.[29]

17 In terms of number and content, one author rises above all the others. Manuel Vidal Español published a monthly section in EID entitled *"Las aplicaciones domésticas de la electricidad"* (Electricity domestic uses). Vidal Español worked as an engineer in a Power Company, but he was highly regarded as a popularizer because of his radio talks. From the mid-1920s, he participated in electricity popularization activities through the Catalan Lighting Committee, a community of experts who had carried out numerous initiatives to promote electric lighting in factories, workshops, schools and different public spaces.[30] His articles on EID introduced irons, fridges, food processors and heaters, among others.[31]

18 *La mujer y el hogar* (Women and the home), a specific section, targeted women and tried to balance the magazine's objective with the editors' view of women's interests. Their ultimate goal was not hidden as they were "convinced of the fact that the introduction of domestic technologies in the home required women, because

25 Shelley W. Cordulack, "A Franco-American Battle of Beams. Electricity and the Selling of Modernity", *Journal of Design History*, 18, 2, 2005, 147-166.

26 "¿Qué debe esperarse aún de la electricidad?", *Electricidad Industrial y Doméstica*, nº 12, 1931, 1.

27 Francisco F. Sintes Olives, "Coste de entretenimiento de los aparatos eléctricos de uso domestico", *Progreso Eléctrico*, nº 19, 1932, 7.

28 A brochure from the Spanish Lighting Association (Asociación Española de Luminotecnia) compared the cost of home lighting during a party (300 W, around 0.63 pesetas) versus the value of the different dishes that might be served (31.50 pesetas). It concluded that having the house well illuminated during the party would cost the same as one of the sandwiches served. *La luz en casa racionalmente empleada proporciona alegría, bienestar, belleza y economía* (Madrid: AEL, Gráficas Reunidas, S.A., 1933), 2.

29 The number 2 of EID explained the contents of a promotional card published by an electric company. It compares the price of *La Vanguardia* (0.10 pesetas), the cigarettes (0.40 pesetas) and the matches (0.5 pesetas) with the cost of one day home lighting (0.40 pesetas) "Tarjetas", *Electricidad Industrial y Doméstica*, nº 2, 1930, 24.

30 Around the Comité we could find most of the experts working on electricity popularization during this period, included Vidal Español, Sintes Olives and Vidal Budills. They started working on the Barcelona International Exhibition of 1929 and remained active until the Civil War.

31 Among others, Manuel Vidal Español published the next articles: "El motor de cocina", *Electricidad Industrial y Doméstica*, nº 12, 1931, 3-5; "Cuidados que requieren las instalaciones y aparatos", *Progreso Eléctrico*, nº 15, 1931, 4-6; "Hornillos y cocinas", *Progreso Eléctrico*, nº 19, 1932, 1-3; "Como funcionan las neveres", *Progreso Eléctrico*, nº 22, 1932, 3-4; "El calefactor de agua por acumulación", *Progreso Eléctrico*, nº 26, 1932, 2-3; "La plancha eléctrica servidor indiscutible del hogar", *Progreso Eléctrico*, nº 39, 1933, 3-4.

women were the ones who, actually thinking of themselves, must do their best to modernize domestic practices."[32] Therefore, the section included articles about decoration based on electrical lighting and appliances for women's hygiene and beauty. However, it also included some articles not related to electricity, such as fashion or perfume subjects. The publishers offered a considerable sum of 15 pesetas per article to those women who submitted proposals for publication.[33]

19 There are some remarkable aspects in the articles women authored. An example is an article entitled *"La dulce vida del hogar"* (The Sweet Life in the Home), which defends the use of household appliances to eliminate the need for domestic servants.[34] The author used the first person to explain how cooking, cleaning, washing clothes or ironing "are now a child's game" thanks to the electrical kitchen, the electric iron or the vacuum cleaner. To her, electricity took the role of "Fairy Godmother," an argument previously used in documents promoting electrical lighting linked to the French tradition of *La Fée Électricité*.[35] Also, for the social standards of that time, having a woman explaining the time required to prepare a rump steak or a fish in an electric oven was assumed to be much more credible.[36]

20 The efforts to reach out to female users were significant but with hidden agendas. As a result, the magazine's pages include technical notions, price considerations, and precautions to remember. Also, scenarios presenting women's future including more free time, better health for their families and more aesthetic beauty for themselves. We will see this in the following section.

## WHAT THE HOUSEWIFE MUST KNOW

This section steals the title of the article *"Lo que la señora de la casa debe conocer"* signed by Ernest Greenwood, a National Electric Light Association (NELA) member.[37] Although we do not know if it is a translation or an exceptional collaboration for the magazine, we would like to emphasize that criteria established in North America are taken into account in this matter. The article highlights some points related to understanding the electrical magnitudes and appliances that women should know about to deal with electricity use scenarios. First, it referred to the need to know the electrical vocabulary. Then, to illustrate this need, it stated that users bought electricity in kilowatt-hours and, therefore, they should know the relationship between this magnitude and an electrical appliance that has its power expressed in watts. 21

The article also discussed the possibilities and limitations of the domestic electricity system. Inadequate facilities limited the possibilities of introducing more devices. The article encouraged the housewives to get to know the electrical installation capacity of their homes to appropriately decide on the lighting and the appliances to install, knowing the circuit's distribution in the house. In addition, the housewives had to identify the reasons for service interruption, if it was caused by a power company outage, a malfunction of an appliance, or an overload of the system. For this reason, they should know how a fuse works and how to replace it if necessary. 22

Women should also know how meters work and how much electricity they are using at any given moment for monitoring consumption. Existing regulations allowed consumers to complain if the meter took readings with errors over 5%. 23

32 "Proyectos", *Progreso Eléctrico*, nº 15, 1931, 5.

33 Id.

34 Cecilia Artigas, "La dulce vida del hogar", *Electricidad Industrial y Doméstica*, nº 4, 1930, 8-9. Cecilia Artigas published some articles in the magazine, but unfortunately, we do not know anything about her.

35 A promotional document published shortly earlier due to an exhibition about electric lighting explicitly stated the Fairy Godmother and electricity identification. L. Splendor, *Alegrías de la Luz. Un cuento de invierno* (Madrid: AEL, Gráficas Reunidas, S.A., Novela Luminosa, 1, 1930).

36 Nuria Millet, "El hogar moderno", *Progreso Eléctrico*, nº 21, 1932, 13.

37 Ernest Greenwood, "Lo que la señora de la casa debe conocer", *Progreso Eléctrico*, nº 16, 1931, 8. (It was published again on the number 37, August, 33, 4). NELA was a national United States trade association, the forerunner of the Edison Electrical Institute.

Consequently, the housewives needed to know how to do a precise reading to calculate their consumption for a given period to compare it with the actual consumption of the different household appliances used.[38] The purpose of this kind of article was to allow readers to quickly become familiar with the new concepts and "talk about their volts, ohms and amps, as today they [already] talk about meters, litres and kilograms."[39]

24 In this discourse, women cannot express their views about the knowledge that the experts assumed they needed. Experts decided what knowledge was relevant to make decisions about new devices. Women played the role of an expert on electrical devices in the home, knowing, for instance, if it was possible to connect more devices in their home installation or if it should be upgraded due to lack of capacity. However, they could not decide to buy an appliance, as this was the responsibility of their husbands, although they were actively involved in this process. In this sense, a text published by the manager of the sales promotion department of General Electric Co is very eloquent. It described the formula to achieve success in door-to-door sales of electrical appliances:

> "The house owner is the one who will ordinarily receive the salesperson She will be the first to listen to his explanations; he should not lose sight of the fact that she is the one who benefits most from the installation [of the appliances]. However, you will want to check with the rest of the family before you make (the sale) no matter how enthusiastic she is about the electric service."[40]

25 The salesperson, mainly a salesman, had to convince the housewife in order to put her on his side, but the woman was not in charge of the purchase decision. Therefore, the text continued by advising the salesman to return to the home at dusk, at dinner time when he would find the whole family, that is, the husband, to whom the woman would have already given a prior explanation of the advantages of the product. Men had the leading role due to society's patriarchal structure, which assigned them the final decision of the purchase. For this reason, salesmen transferred to women the task of convincing their husbands of the benefits of electricity.

26 Promotional features also reflected such gender bias. Men appeared in advertisement images, but they were never displayed using the devices in the home, unlike women. Men did not appear managing such housework devices as vacuum cleaners, irons or kitchens, but they appeared in the fan's role (Figure 2). In the case of refrigerators, a man could appear eating or drinking something that the fridge had been cooling. These men used the appliances without making any effort. They were not used for any active tasks. A paradigmatic case is that of the water heater, for which male users were represented benefiting from their function, for example, by taking a bath, while female users were portrayed using the hot water for washing dishes or caring for children. In contrast, they tended to be


**Figure 2**: Westinghouse's advertisement. Source: *Electricidad Industrial y Doméstica*, nº 11, 1931, 7.

**38** Francisco F. Sintes Olives, "La lectura de los contadores eléctricos al alcance de todos", *Electricidad Industrial y Doméstica*, nº 11, 1931, 1.

**39** Manuel Vidal Español, "Las aplicaciones domésticas de la electricidad. Algo sobre las unidades electricas más corrientes". *Electricidad Industrial y Doméstica*, nº 9, 1931, 3.

**40** Corcovan, "Electrifique su casa", 2 (cf. note 19).


**Figure 3**: Public Demonstration of Appliance Utilities (Barcelona, 1934). Source: Arxiu Nacional de Catalunya [National Archive of Catalonia]. Collection: Fuerzas Eléctricas de Cataluña (FECSA) [Electric Forces of Catalonia]

depicted when the couple was in the exhibition room attending the salesman's explanations. [41]

27 Experts took advantage of the housewife's role by strategically defining them as the home experts on electricity because this was beneficial for their interest. They also suggested instructing and employing ladies to make door-to-door sales or to conduct demonstrations.[42] Unfortunately, data on such promotional activities is minimal, although most advertisements for electrical appliances referred to such demonstrations in the companies' showrooms. Nevertheless, as shown in Figure 3, the proposal was taken into account in at least one case. In the showroom of the *Compañía Barcelonesa de Electricidad, S.A.,* located in the central *Plaça de Catalunya* in Barcelona, a woman carried out the demonstrations of some of the domestic appliances.

The popularization discourse became educational when it entered the kitchen. New electrical appliances need detailed explanations because they change the way of cooking. Claiming a so-called attraction of women for the kitchen, "in contrast to the other heavy household tasks that they did not like to perform, all women felt comfortable with cooking,"[43] the experts made this a personal challenge. If the woman who cooks felt like experimenting or looking for new tastes, it would be easy to convince her to buy the new appliances that would allow her to achieve new textures or new challenges. Some magazines considered the modern kitchen as a pleasant place to work.[44] Thus, for such a 28

**41** Some of the advertisements published the reference for an exhibition room. It appealed to the consumer to go to the shop to see the running demonstration of the device.

**42** Sintes Olives and Vidal Burdills, *La industria eléctrica en España*, 821, (cf. note 7).

**43** Manuel Vidal Español, "Las aplicaciones domésticas de la electricidad. Los utensilios y la electricidad." *Progreso Eléctrico*, nº 24, 1932, 2.

**44** An illustration of such publications is the report published in the illustrated magazine *D'ací i d'allà*, in which there were pictures of some famous actresses and singers cooking. The story had the title "Four stars in the kitchen" and included a highlighted subtitle: "Will the modern kitchen stop being the temple where youth and beauty are sacrificed?" "Quatre estels a la cuina", *D'ací i d'allà*, Vol. 20, nº 160, 1931, 138.

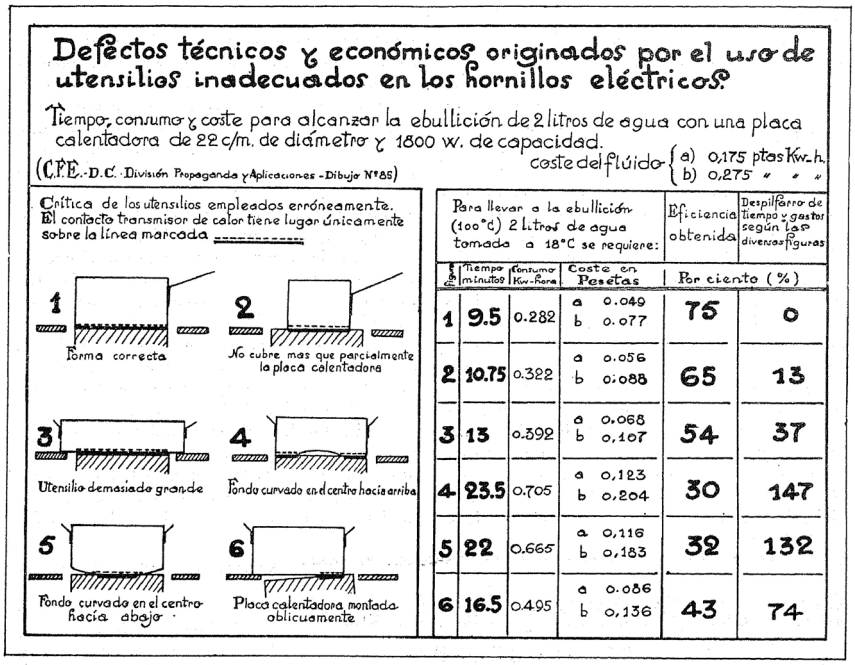


**Figure 4**: Technical and economic deficiencies caused by the use of inappropriate equipment on electric cookers. Source: Manuel Vidal Español, "Las aplicaciones domésticas de la electricidad. Los utensilios y la cocina eléctrica". *Progreso Eléctrico*, nº 24, 1932, p. 3.

discourse, cooking ceased to be a sacrifice and became a hobby, as the new appliances eliminated any associated inconvenience or difficulty. The electrical kitchen turned cooking into pleasure, so cooking time was no longer work time but leisure time for housewives.

29 EID emphasized security aspects such as the absence of gas leaks or fire risks and cleanliness to promote the kitchen electrification. In addition, the journal provided advice on the kind of electrical kitchen most appropriate for different family sizes or explained practical tips, like turning off the power before finishing the cooking to profit from the residual heat of the electric stovetop.[45] The article entitled *"Los utensilios y la cocina eléctrica"* (The utensils and the electric stove) explained that the recipients for cooking on an electric stove had to have the same diameter as the burners, and they had to be flat to increase the contact surface between the recipient and the burner.[46] Figure 4, included in the article, was the drawing number 58 of the advertising and applications division of the *Compañía de Fluído Eléctrico*, the department that the author of the article, Manuel Vidal Español, headed.[47]

30 The article introduced the benefits of electricity in terms of efficiency, but electricity benefits appeared concerning the food quality in other cases. The ease of adjusting the temperature in both the hotplates and the ovens granted excellent results, but also, slow cooking meant better conservation of nutrients and improved the food appearance.[48] In short, a more significant benefit for the family. Compared with coal or wood-burning stoves, the simplicity and safety of use should encourage mothers to "let their daughters use the electric oven for their first cooking trials. They will not expose them

45 F. Volta, "La cocina eléctrica", *Electricidad Industrial y Doméstica*, nº 5-6, 1931, 6.

46 Vidal Español, "Los utensilios y la electricidad", (cf. note 43).

47 Even though the collection of drawings has not been conserved and it is not possible to define the goal of such collection, the fact that Vidal Español regularly collaborated with the journal and conducted numerous scientific popularization activities, we can assume that this Power Company valued electrical education.

48 Ángel Bozal Roman, "Algunas ventajas de la cocina eléctrica", *Progreso Eléctrico*, nº 30, 1933, 5.


**Figure 5**: Advertisement of the *Compañía Barcelonesa de Electricidad*. Source: Elecricidad Industrial y Doméstica, nº 5-6, 1931, back cover.

to burns or dirt."[49] In doing so, they were able to pass on the responsibility for cooking tasks to the new generations of women from a very young age, with total ease, as shown in the iconography of advertising (Figure 5).

31 The association between electric cooking and user-friendliness also had consequences for the processes that took place in the kitchen. The heat was uniform, not subjected to changes in intensity, and therefore stirring or moving the food was no longer an aleatory process. These actions could be systematized, making explicit the times at which each manipulation had to be conducted, eliminating the result's uncertainties.[50] The standardization of cooking processes can be understood as a form of mechanization of the kitchen.

Depicting the kitchen as a place for pleasure was probably the most sophisticated example of manipulating women in the strategy of popularising electrical appliances. In the cases we will see below, it was clear how a housewife ought to be a good housewife in a man's eyes and how electrical appliances might help them achieve this goal. The experts required the perfect housewife who took care of the family's health, kept the household clean and looked beautiful. The aim of the articles is none other than to create a sense of guilt feelings in women who do not use electrical appliances to reach these objectives.[51] 32

The risk of illness in children after eating unsafe food made the mother irresponsible if she neglected to provide an electric refrigerator in her home. Likewise, those who did not use hoovers to clean the dust were encouraging the transmission of disease. Combining all these messages aimed to create the idea that electricity and new electrical appliances were necessary, and lack of them would inevitably lead to a deterioration of family life. 33

All in all, the electrified house proposed by EID had a solution for every home task, always simpler, cleaner, faster and less traumatic for women than any available alternative, which therefore provided women with free time. However, the experts were not honest because they compared two different standards. The advent of electricity was accompanied by significantly higher standards for food quality, cleanliness and health, with results impossible to achieve manually or with more traditional 34

**49** Advertisement, *Electricidad Industrial y Dométicа*, nº 12, 1931, 4.

**50** "La cocina eléctrica", *Electricidad Industrial y doméstica*, nº 9, 1931, 3.

**51** These kinds of psychological strategies aimed at blaming mothers and wives if their kitchen is not safe enough, if the house is not clean enough, or if the clothes are not in excellent wearable condition, started to be used in the United States after the First World War. Pamela W. Lurito, "The message was electric", *IEEE SPECTRUM*, 21, 9, 1984, 92.

technologies. The use of electricity facilitated many tasks and improved results, but it also generated new tasks[52] without a significant decrease in the time devoted to them.[53]

35 The "Women and the Home" section introduced before included articles demonstrating how to improve hygiene and personal care with electrical appliances. In the Spanish case, to be "better housewives"[54] looking more beautiful, not because of a personal desire, more as a way of satisfying their husbands. Electricity could also help them to this end. Beauty is described as a woman's obsession, and electricity is her best friend to achieve it. The new devices shaped their bodies, working on the muscular fibres and eliminating the excessive fat,[55] and facilitating the curling or drying of the hair.[56] The case of ultraviolet lamps was especially significant. They allowed them to get a tan, inducing all their friends to think that they had been to the beach or the mountains.[57] Women would use them both for aesthetics and medical reasons. However, they could also be beneficial to children for medical reasons, used as growth stimulants for vulnerable children or directly as a treatment to fight rickets.[58] Because of that, women who did not use these products would be bad wives and bad mothers. Again, experts became the necessary allies of the electric appliances seller in generating such a pang of guilt among women.

36 The underlying idea was that women should devote themselves to the time saved by using electrical appliances for the household chores. The journal tried to catch women's attention while, at the same time, contributing to stereotyping them by reinforcing the idea of the lady of the house. The same idea appeared in advertising, as we can see in Figure 6. The woman became, thanks to electrical appliances, an idle queen. The message is aimed at the upper social strata, where women were expected not to do any paid work outside the home.[59] Unlike other contexts,[60] we have no evidence of feminist movements opposing such discourses.

52 Ellen Lupton, *Mechanical Brides: Women and Machines from Home to Office* (New York: Cooper-Hewitt National Museum of Design, Smithsonian Institution, and Princeton Architectural Press, 1993), 15.

53 MacKenzie and Wajcman consider that working time has remained constant. Donald Mackenzie and Judy Wajcman, "Introductory Essay", in Donald Mackenzie and Judy Wajcman (eds.), *The Social Shaping of Technology* (Milton Keynes: Open University Press, 1985), 2-25. Cowan believes that the time of dedication had not decreased; on the contrary, it had increased. Ruth S. Cowan, *More Work for Women. The Ironies of Household Technology from the Open Hearth to the Microwave* (London: Free Association Books, 1989). On the other hand, Worden believes that the reason it would have risen is that they increased the standards that are in place for the family. Suzette A Worden, "Powerful Women: Electricity in the Home, 1919-1940", in Judy Attfield and Pat Kirkham (eds.), *A view from the Interior. Feminism, Women and Design* (London: The Women's Press, 1989), 131-150. Bowden and Offer considered the problem was that tasks until that time were done out of the house, paying for a service, from the introduction of electrical appliances were made in the home. Sue Bowden and Avner Offer, "Household appliances and the use of time: the United States and Britain since the 1920s", *Economic History Review*, XLVII, 4, 1994, 725-748. Also, in the Worden line and the washing machine's specific case, they point out that although the device reduced the time spent washing clothes simultaneously, it made it easier to clean more often.

54 Sue Bowden Sue. and Avner Offer, "The Technological Revolution That Never Was. Gender, Class, and the Diffusion of Household Appliances in Interwar England", in Victoria De Grazia and Ellen Furloughf (eds.), The sex of Things: gender and consumption in historical perspective (Berkeley: University of California Press, 1996), 268.

55 Lola Argüelles, "La bellesa y la electricidad", *Electricidad Industrial y Doméstica*, nº 2, 1930, 13.

56 Octavia, "Tenacillas y calienta tenacillas eléctricas", *Progreso Eléctrico*, nº 16, 1931, 5.

57 "La electricidad en el tocador". *Progreso Eléctrico*, nº 26, 1932, 14.

58 "Los niños, en la casa, tanto en invierno como en verano, necesitan el sol. La lámpara de luz solar reemplaza a aquel. En las frías mañanas de invierno, un poquito de 'sol casero' es como una bendición de Dios" ["Children in the house, both in winter and summer, need the sun. The sun lamp replaces the sun. On cold winter mornings, a little bit of 'home sun' is like a blessing from God"]. Cecilia Artigas, "El sol en casa", *Progreso Eléctrico*, nº 15, 1931, 9.

59 In this sense, the process of household electrification in Spain differed significantly from that in Germany, where married middle-class women freed from household chores were encouraged to work outside the home. Mary Nolan, "'Housework Made Easy': The Taylorized Housewife in Weimar Germany's Rationalized Economy", *Feminist Studies*, 16, 3, 1990, 550.

60 Laurel D. Graham, "Domesticating Efficiency: Lilliam Gilbreth's Scientific Management of Homemakers, 1924-1930", *Sings*, 24, 3, 1999, 634.


**Figure 6**: Advertisement of the *Cooperativa de Fluido Eléctrico* Showroom. Source: *Elecricidad Industrial y Doméstica*, nº9, 1931, 4.

## CONCLUSION

37 Figure 7 is an excellent summary of the message of the journal *Electricidad Industrial y Doméstica*. As Nye points out,[61] electricity still suggested radical changes in the 1930s because the protagonists had the memory of pre-electric times. The joke compared the neatness, simplicity, ease of use and joy of a family that used electrical equipment with the dirt and moodiness of a family that, 20 years earlier, did not use it. The character most benefited by the electric devices was the woman as if breakfast in the 1930s had been prepared alone. Not only did electricity not enter the home in the

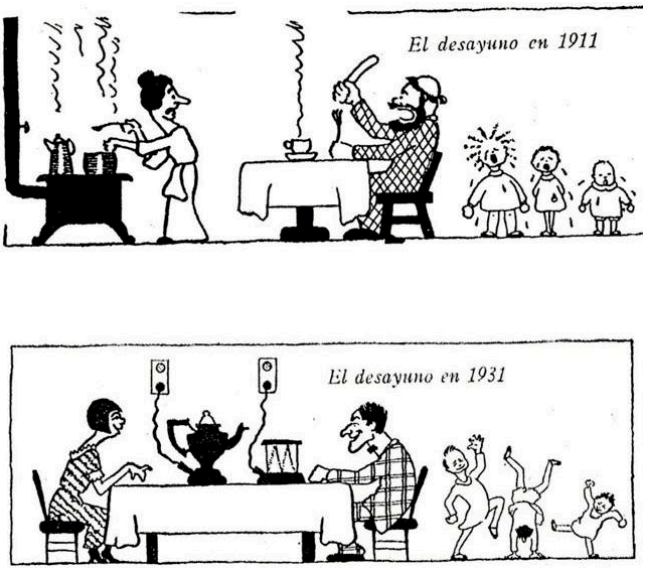


**Figure 7**: Cartoon. Source: *Progreso Eléctrico*, nº 17, 1931, 3.

way shown in the image, but the actual situation was the opposite for many women. As it happened in the countries the experts tried to imitate, the wealthy classes' women who could afford to buy many appliances moved from managing the service staff to taking care of the manual tasks by themselves.[62] They ceased to be managers and became workers who handle modern, efficient and clean tools.

Spanish experts introducing electric devices in 38
the 1930' showed a firm commitment to increasing home technology. We found no trace of the discourse of industrialization proposed in interwar Germany – with outsourcing of the household chores – or collectivization of these as in the Swedish model. Instead, the model was the US. In their discourse, we recognize the same ideology Landström describes regarding the emergence of domestic technologies into the United States homes.[63] Perhaps because the advertising model was American, as part of the offer was, the experts aimed to turn the home

61 David E. Nye, "Electrifying America: Social Meanings of a New Technology, 1880-1940" (Cambridge: The Mit Press, 1990), 337.

62 Ruth S. Cowan, "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century", *Technology and Culture*, 17, 1, 1976, 12; Worden, "Powerful women" (cf. note 53), 139

63 Catharina Landström, "National Strategies: The Gendered Appropriation of Household Technology", in Mikael Hard and Andrew Jamison (eds.), *The intellectual appropriation of technology: discourses on modernity, 1900-1930* (Cambridge: The MIT Press, 1998), 163-188.

into a miniature factory where most processes were machined thanks to household electrical appliances.

39 Expert educational work done through journals such as *Electricidad Industrial y Doméstica* represented an exciting attempt to import modern domestic mechanization into a peripheral society. Their efforts to introduce electrical magnitudes, tariffs, caution in the use of equipment, and other technical contents, constituted a corpus of knowledge that should make a significant contribution to making electricity and the use of electricity in the home an ordinary everyday event.

40 The research conducted from the journal's contents illustrates how modernization determined a happy future where both men and women enjoy home electrification benefits. To achieve this objective, the magazine used half-truths and false promises of free time and intended to create a guilty feeling in women who did not use electrical appliances. In such an imagined future, gender roles at home would remain unchanged, and women would carry out all the household chores, and they would be happy to do them with the help of the new devices. Therefore, even though we cannot consider its contents as a novelty compared to other countries, we should consider them in intensity and duration. Also, we can highlight the inclusion of some female voices in an intensely sexist society, if only to obtain notoriety in the group of upper-class housewives.

41 At the beginning of the 1930s, there were numerous refrigerator showrooms in cities such as Barcelona, even though most of the population could not afford them. It is difficult to say if the reason because this did not substantially affect adoption, was that the experts failed to show electricity as a necessity, the lack of a joined strategy of power companies, the high price of the devices and the service or the particularly turbulent period the country experienced in those years. However, most of the population stayed away from these innovations. Probably it was a combination of all those factors. After the Civil War, the foreign origin of most of the appliances was an insurmountable barrier. Post-war testimonies record refrigerators' arrival, washing machines, and the first household appliances in Barcelona in the 1960s, when the Spanish economy started to recover from the Civil War's impact.[64] The experts' enthusiasm for explaining the benefits of using electrical appliances in the home did not substantially affect adoption. The mechanization did not have time to prosper, but the home's gender role distribution was a success. The Spanish Civil War and a long post-war period stopped any attempt to popularize electrical appliances, and Francoism subordinated women's roles in all public and private spheres. Twenty-five years later, some of the same people that explained the benefits of electricity in the thirties repeated the same arguments in the fifties, another popularization history that deserves to be explained.

64 Raymond Carr, *España 1808-2008*. Edited and revised by Juan Pablo Fusi (Madrid: Arial, 2009. Original: Spain 1808-1975. Oxford: Claredon, 1982).

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