

Naming streets for physicians: "l'affaire Carrel".

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ABSTRACT In the 1970s, Paris and many other French cities named streets in honor of Alexis Carrel, the French physician, scientist, and Nobel laureate. Controversy erupted in the 1990s, when Carrel's right-wing political views were espoused by the National Front party. Honors such as street names require not only respected contributions to society, but also high standards of personal conduct. Paris has recently followed the lead of other French cities and has voted to remove Carrel's name from its streets.

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THE NAMES OF STREETS SAY MUCH about a nation. London's King's Road brings to mind the troubled monarchy in Great Britain, Main Street suggests plainspoken Americans, and boulevard Pasteur in Paris indicates the respect of the French for "savants" (Alter and Testard-Vaillant 1997). This tradition of naming streets for savants in Paris is not new. In 1895, the Paris correspondent of *The Chemist and Druggist*, commenting on the proposed change in the name of boulevard de Vaugirard to boulevard Pasteur, noted that a rue Pasteur already existed and that 21 other streets of Paris were named for chemists (One hundred years ago 1995). In 1909, William Osler wrote a series of travel notes for the *Journal of the American Medical Association* reflecting on his experiences during a year's leave from his post as Regis Professor of Medicine at Oxford. In an article entitled "Impressions of Paris," he reported his regrets in leaving Paris and wrote that he was sorry not to be a member of the Faculty of Medicine, able to put "Medecin des Hopitaux" after his name. He observes the great respect for "medical men" in France:

Asked my strongest single impression made on me here, I should reply: "The extraordinary reverence of the French." The history of science is writ large in the city; in monuments, in buildings dedicated to illustrious dead and in streets called by their names. There are more statues to medical men in Paris than in Great Britain and the United States put together. (Osler 1909)

Since Osler's visit, Paris has continued to name streets for "medical men"; more than 150 are named for physicians or medical scientists (Brabibant, Mirot, and Le Moel 1965). This is the history of one such street, rue Alexis Carrel, in the 15th arrondissement. In 1974, Paris named a street in honor of Carrel, the third Frenchman to win the Nobel Prize for Physiology or Medicine. Paris was not alone in recognizing Carrel. After the celebration of the centennial of Carrel's birth in 1973, more than two dozen French cities, including Strasbourg, Limoges, and Montpellier, named streets in his honor, and Lyon, Carrel's birthplace, named its Faculty of Medicine for its Nobel Prize-winning graduate.

It is safe to say that in the 1970s, few French citizens remembered much about Carrel, partly because he had lived most of his adult life abroad and partly because of France's desire to "forget" activities of certain of its citizens during the German occupation of France. Carrel left France when he was 31, and with the exception of military service with the French army during the First

World War, returned to France only in 1941, when he was 68 years old. Three years later, he died in his apartment on the avenue de Breteuil. A plaque affixed to the facade of the building notes Carrel's residence.

In 1991, the general ignorance about Carrel came to an abrupt end in what might be called "l'affaire Carrel." At that time, the ultra-right National Front party, led by a former paratrooper, Jean-Marie Le Pen, argued in strident tones for radically limiting the freedom of immigrants living in France and the right of immigrants to enter France. The Greens, the environmental party of the left, vigorously opposed Le Pen's racist attacks on foreigners. Bruno Megret, a militant of the National Front party, responded to the Greens' attack by citing the writings of Carrel, warning that immigrants fleeing Nazi persecution were polluting the French population (Reggiani 2002). Megret went on to call Carrel France's first true environmentalist. Like a bolt of lightning, Carrel's name shot to center stage of the political debate. His statements and writings--in particular his thoughts on the use of eugenics to maintain the purity of the human species--were reread and reconsidered. Carrel's thoughts were summarized in his best-selling book, *Man, the Unknown* (1935). The book, initially published in both English and French, was subsequently translated into many languages and drew international attention. At the end of 1935, the editor preparing the German edition wrote to Carrel to ask whether it was possible for him to mention in the final chapter that laws had recently been promulgated in Germany on the sterilization of men with hereditary diseases and castration of sexual criminals (Reggiani 2002). Carrel obliged, writing that "The German government has taken energetic measures against the propagation of the defective, the mentally diseased, and the criminals."

Who was this physician now at the center of a political debate? Carrel was born in 1873 in Lyon and was educated at home by his mother and subsequently in Jesuit schools. He then entered the Medical Faculty of Lyon and received his medical degree in 1900. Carrel was an outspoken critic of the liberal, anticlerical forces in academic circles. His belief in the power of religious faith, reflected in his early writings, described the medical miracles that he observed during a visit to Lourdes (Walker 1989). His position may have contributed to his failure to obtain a permanent position in Lyon. In 1904, he left France for North America. After a short stay in Canada, he entered the United States to work at the University of Chicago. There, by all accounts, he was recognized as a skillful vascular surgeon who was developing techniques for suturing blood vessels.

In 1906, Carrel was recruited to the recently established Rockefeller Institute for Medical Research in New York City. By 1910, Carrel had perfected his techniques for rejoining severed blood vessels and used them to demonstrate the long-term function of reimplanted organs. In contrast to autografts, he observed that, despite technical success, organs transplanted from one animal to another functioned for only a short time. Carrel identified the pathology of transplant rejection and even suggested that transplant rejection reflected a reaction of the host against the transplanted organ. The application of Carrel's surgical techniques to human organ transplantation seemed close at hand, and for this work Carrel was awarded the Nobel Prize for Physiology or Medicine in 1912. However, it would be more than 40 years before the discovery of immunosuppressive drugs to control the graft rejection would allow the promise of allogeneic organ transplantation to be realized.

In contrast to Carrel's early work on experimental surgery and transplantation and his work on the antiseptic treatment of battle wounds during his service

with French forces during the First World War, virtually all his activities in the last 27 years of his life, inside and outside the laboratory, engendered controversy. This appears to have resulted in large part from his doctrinal view of human existence mixed with a large dose of religious faith and an overwhelming belief that eugenics was the only means to maintain the purity of the human species.

In 1910, Carrel turned his attention to the study of isolated normal cells and developed techniques for growing them in culture. His most startling report was his claim that chick embryo fibroblasts appeared to grow in culture indefinitely (Carrel and Ebeling 1921). These results were interpreted as meaning that normal cells were immortal once freed of the constraints that led to the finite lifespan of the whole organism. Aging was, thus, a consequence of the complex organization of cells in tissues, and not an inherent property of the cells that made up the tissues.

At least in retrospect, however, there were reasons to be dubious of these claims. Carrel and Ebeling had written that the indefinite multiplication of chick embryo fibroblasts depended entirely on the addition of substances in chick embryonic juice. As frozen embryonic juice did not sustain the cultures, it is now considered very likely that viable fibroblasts present in the fresh embryonic juice were being continuously added to the cultures. Despite widespread interest in Carrel's findings, they have never been confirmed and are now believed to be erroneous if not fraudulent (Hayflick 1984).

However, "faith" in the immortality of normal cells grown in culture was slow to die at the Rockefeller Institute. In 1960, Hayflick and Moorhead submitted a paper to the *Journal of Experimental Medicine* offering powerful evidence that normal human fibroblasts in culture had a finite replicative life span. This journal had published Carrel's original article 40 years earlier and was not ready to countenance a different view. The editor, Peyton Rous, a colleague of Carrel at the Rockefeller Institute, wrote to the authors that it had been well established that normal cells grown in culture were immortal, and he suggested that a deficiency in the culture medium most likely explained the limited lifespan of the cultured cells observed by the authors (Hayflick 1984). Hayflick and Moorhead's paper was published the following year in *Experimental Cell Research* without revision (Hayflick and Moorhead 1961). The landmark paper became one of the most cited scientific articles of the 1960s, and its results have been confirmed for a variety of cell types in many independent laboratories.

Carrel's political activities in the 1930s provoked consternation, controversy, and condemnation well beyond the scientific community. At that time, Carrel had welcomed the aviator, Charles A. Lindbergh, into his laboratory to build a pump necessary to perfuse cultured organs that he hoped could be used for transplantation (Carrel and Lindbergh 1938). It turned out that Carrel and the young aviator shared many views. They both were impressed by the efficiency and organization of the Nazi leaders in rebuilding Germany, and railed against the "Bolsheviks and Jews" who were raising alarms against Nazi racism. In *Man, the Unknown*, Carrel praised the youth of Germany and Italy who were "driven by faith to sacrifice themselves for an ideal" (Reggiani 2002). Carrel associated his views with Hitler's policies and stated in the introduction to the 1939 American edition of *Man, the Unknown* that scientific knowledge would not bring about a new civilization unless combined with a new "faith" or "spiritual urge" to protect the human species from pollution by genetically unfit individuals (Reggiani 2002).

The purity of the human species, he argued, could be assured only by positive selection, encouraging reproduction of the genetically endowed, combined with negative selection, eliminating the genetically unfit. However, the most shocking and tragically prophetic sentence is found in the last chapter, "The Reconstitution of Man." Here Carrel suggests that unfit individuals and those who that had betrayed the public should be sent "to institutions where a supply of the appropriate gas would permit their disposal in a humane and economic fashion" (Carrel 1935, 305). In the mid-1930s, this suggestion might have been taken as hyperbole, but Carrel would live to see this suggestion become Nazi policy: the final solution. Not surprisingly, Carrel has been accused of being the father of the gas chambers.

Carrel retired from the Rockefeller Institute in 1939 and returned to Nazi-occupied France in 1941, where he was recruited by the Vichy government to direct the French Foundation for the Study of Human Problems (Reggiani 2002). In this position, he propagated his ideas of human eugenics, targeting in particular residents of France who had fled from Nazi persecution. After the Allied liberation of France in August 1944, Carrel was fired from this position, and returned to Paris where he died in November. Despite Carrel's racist ideas and his activities in the Vichy government, his name was largely "forgotten" for 45 years, while France was rebuilding and trying to forget the devastating "black days" of Nazi occupation during the Second World War.

However, when Carrel's name was injected into the political debate by the National Front in 1991, his views on eugenics were reconsidered, and a majority of the French concluded that Carrel's views brought more dishonor than his Nobel Prize brought honor to France. As a result, during the 1990s, his name was removed from streets in more than 20 French cities, and the Alexis Carrel Medical Faculty in Lyon was renamed in honor of Claude Bernard. However, rue Alexis Carrel remained in the French capital.

My interest in this story began in 1995, when I was handed an election brochure of Laurence Dumont, a socialist candidate who opposed the reelection of the Eduoard Balladur, former Prime Minister and right-wing Rassemblement pour la Republique (RPR) deputy of the 15th arrondissement. In the brochure, Dumont wrote that she would continue to battle against racism. This had a particular significance to residents of the 15th arrondissement, for it was here in 1942 that the roundup of Jews living in Paris was centered. Dumont wrote: "I have said many times that rue Alexis Carrel--physician, eugenicist, and first in France to suggest the use of gas chambers--should be 'debaptized.'" (Ironically, rue Alexis Carrel is only a few blocks from the monument to the "Jewish martyrs of the Vel d'Hiver." The Velodrome d'Hiver stadium had stood at the northern end of boulevard Garibaldi and was used as a detention center for Jews rounded up by the French gendarmes in July 1942, prior to their deportation to the Nazi death camps.) Balladur was re-elected, the Paris city hall remained in the hands of the center-right RPR party, and the idea of renaming rue Alexis Carrel died. Except for Paris, the name of Carrel was erased from streets throughout France. At the beginning of 2002, Paris remained the only city in France to have a street named for Alexis Carrel. But people had taken matters into their own hands. When I visited Paris in 2002, only two of the four street signs remained, the others having been ripped off the wall or defaced (Figure 1).

[Graphic omitted] [FIGURE 1 OMITTED]

While morally reprehensible persons can enlarge the field of knowledge and produce respected work, most believe that a country's honor requires a high

standard of personal conduct. This lesson is clearly drawn in a recent book on Robert Brasillach, another racist French intellectual and Nazi sympathizer (Kaplan 2000). Brasillach, a graduate of the prestigious Ecole Normal Superieur, was recognized as a talented writer, but he was a Nazi sympathizer and authored numerous virulent racist and anti-Semitic tracts during the German occupation of Paris. After the liberation of France in 1944, Brasillach was seized, tried for treason, convicted, and sentenced to death. De Gaulle, as leader of the provisional government, was asked to commute the death sentence. He refused this request, commenting that "talent confers responsibility." Like Brasillach, Alexis Carrel's irresponsible activities prior to and during the Second World War fell far short of the responsibility his talents demanded. One can argue the consequences of Carrel's actions, but his conduct cannot be viewed as worthy of a nation's honor.

Paris now has a socialist mayor, Bertrand Delanoë, who has already demonstrated his sensitivity to the significance of street names in the capital. Under his leadership, the street named in honor of Richepance, the general who brutally restored slavery to the French Island of Guadeloupe, has been renamed. The decisive defeat of the National Front during the second round of the presidential elections of June 2002 showed that the French overwhelmingly rejected the views espoused by Jean Marie Le Pen and Alexis Carrel. In the spring of 2002, Delanoë's city hall voted to remove Alexis Carrel's name from the street in the 15th arrondissement and rename it in honor of Jean Pierre-Bloch, a member of the French resistance during the Second World War, a minister in de Gaulle's government, and the president of the International League Against Racism and Anti-Semitism. The political leaders of Paris have acted in concert with the motto of the French republic, "Liberte, Egalite, Fraternite."

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This essay was written while the author was Professeur invite at the Institut Pasteur, Paris.

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photo: marc e weksler



FIGURE 1

*Street sign for rue Alexis Carrel, defaced by French citizens.*

SOURCE: PHOTO BY AUTHOR, 2002.