

Smooth Flow

Biological Efficiency and Streamline Design

Christina Cogdell

ABSTRACT

In this chapter, adapted from her book *Eugenic Design: Streamlining America in the 1930s* and reprinted here by permission of the University of Pennsylvania Press, Christina Cogdell examines the eugenic implications of contemporary discourses about biological efficiency in three areas: eugenicists' concerns for national efficiency (signified by a national, positive, eugenic differential birthrate); health reformers' and the general public's consternation over bodily constipation; and industrial designers' insistence on tapered, streamlined product designs. At first glance, these three areas appear unrelated, but in fact, all made manifest a similar rhetoric and group of ideas about national racial progress and the blockades that seemingly threatened it, which originated in the terminology and ideology of the eugenics movement.

For example, otherwise known as "civilized colon" because of its almost exclusive appearance in middle- and upper-class whites, constipation was seemingly threatening the demise of national productivity and intelligence. It was believed at the time that once feces stagnated in the colon, parasitic bacteria rapidly reproduced and released poisonous toxins into the bloodstream, causing symptoms ranging from lethargy to sexual disinterest to outright mental degeneracy. Eugenicists, too, feared "poison in the blood," although their concerns focused much more on the blood of the "national body." For just as waste that failed to progress through the colon supposedly released toxins into the blood, so, too, according to the eugenicists, was the national body being poisoned and national intelligence lowered by the introduction of the blood

of the “less evolved,” who seemingly reproduced as quickly as parasites in a “civilized” colon. As Henry Fairfield Osborn phrased it in a 1932 *Forum* article, the rapid reproduction of these “unfit” individuals served as “dragnets . . . on the progress of the ship of state” by slowing down the national economy through the cost of their care and dysgenically contributing to the national birthrate.

In the 1930s, industrial designers were not immune to this national concern for biological efficiency. Not only did they personally suffer from occasional internal blockage, they also metaphorically applied the concept to their designs. For example, in 1935, Egmont Arens promoted a national highway system as the cure for the country’s “communications constipation.” More revealing than this example of one designer’s concern, however, was the rise of streamlining itself as the style of the decade, for the primary theoretical goal of its promoters was the promotion of unhindered, efficient, forward evolutionary progress accomplished through the removal of “parasite drag.” By bringing all protrusions in their designs into line with a streamline curve, designers minimized the kinks and eddies that would physically or psychologically retard the efficient forward thrust of their designs. This chapter thus examines the goal of smooth flow as it permeated U.S. culture on a variety of levels, showing how the streamline style resonated with and reinforced contemporary concerns, many of which were overlaid with eugenic implications regarding enhanced fertility, intelligence, and power.

This age needs streamlined thinking to keep
pace with our streamlined machines.¹

DESIGNER EGMONT ARENS, in notes for
his speeches on streamlining in the
mid-1930s

In 1937, in an advertisement for a laxative, Petrolagar Laboratories, Inc., of Chicago, attempted to capitalize on the popularity of streamliner trains by invoking their promptness and regularity as the model for the ideal intestinal functioning of a modern urbanite (fig. 9.1).²

Caught up in “high speed living” that encouraged “unfavorable eating and working conditions” and contributed to “neglected habits,” commuting businessmen frequently suffered from “faulty elimination” and “chronic constipation.” Unlike the on-track, on-time regularity of the modern streamliner train, the contents of modern man’s intestinal tract typically ran late, if they arrived within the day at all. The educational advertisement therefore suggested seeing a physician who could prescribe the necessary changes to one’s schedule, diet, and exercise program, as well as the laxative Petrolagar, to restore regularity to one’s system.

GENTLE AIDS

To Regular Elimination

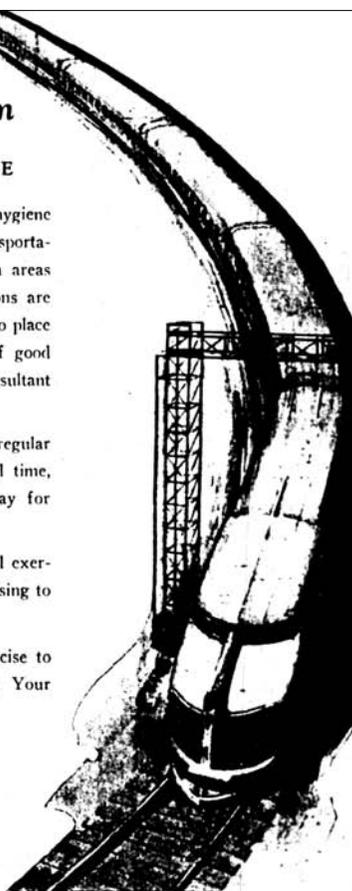
MAINTAINING A REGULAR SCHEDULE

IN THIS era of high speed living, our practice of daily hygiene is often forsaken to accommodate modern modes of transportation and communication. Especially in the metropolitan areas is this true, where unfavorable eating and working conditions are contributing factors to neglected habits. It is this inclination to place the value of time and convenience above the importance of good health that is largely responsible for faulty elimination and resultant chronic constipation.

THE bowel, like a modern railway train, must have a regular schedule of operation. There should be no delay. A fixed time, preferably soon after breakfast, should be allocated each day for bowel movement.

EQUALLY important to regular elimination are diet and exercise. You should have a particular time for eating and exercising to avoid indigestion and subsequent constipation.

CONSULT your physician for a proper diet and exercise to assist in establishing a regular habit time of bowel movement. Your



cooperation in following his advice is imperative if you are to build and maintain a strong healthy body.

THIS is the second of a series of educational advertisements on "Gentle Aids to Regular Elimination" by the makers of Petrolagar (an emulsion of pure mineral oil—65%—with agar-agar). Petrolagar, because it performs only a lubricating and softening function, is also a "gentle aid" to regular elimination. However, like diet or any other measure, Petrolagar should not be self prescribed. It is harmless, but certainly not a "cure-all." Best results in dealing with difficulties of the intestinal tract will invariably be obtained when a physician is given the opportunity to make a careful diagnosis and prescribe whatever measures fit the individual case. Another advertisement in this series will appear next month.

PETROLAGAR LABORATORIES, INC.
8134 McCormick Boulevard • Chicago, Ill.

Fig. 9.1. Laxative advertisement for Petrolagar Laboratories, Inc., Chicago, 1937.

In its use of the streamliner as a symbol for intestinal efficiency, the advertisement built on a metaphor popularized by health enthusiast John Harvey Kellogg throughout numerous publications, including his three-hundred-page book *The Itinerary of a Breakfast: A Popular Account of the Travels of a Breakfast through the Food Tube and of the Ten Gates and Several Stations through Which It Passes, Also of the Obstacles Which It Sometimes Meets* (1918, 1926). In this work, he described the “normal itinerary of a meal” passing through the “food tube,” otherwise referred to as the “alimentary subway.” “Train Late: Held at Stomach Station for 2 hours. Bowel Gate (No. 5) refused to open. Losing Time: Wreck at Colon Gate (No. 7). Ileocecal valve refuses to close, track obstructed with rubbish. 8 hours late. Losing Time: Collision with heavy train backing up. . . . Losing Time. . . . 35 hours late.” Finally, “train arrives at last, after clearing track with dynamite (castor oil), forty hours late.”³ Besides the visual imagery, the pun of track/tract, and the popularity of streamliner trains, what drew health-conscious individuals of the interwar period to such analogies? One answer surfaces when considering the broader cultural and ideological pursuit of “smooth flow,” a pursuit that conjoined notions of the efficiency of bodies and products with the eugenic idea known as “national efficiency.” Consider, for example, the conceptual similarities between these different loci—eugenics, constipation, and streamline design—of the concern for smooth flow.

Efficient living was a primary pursuit of eugenicists and progressives alike, many of whom based their life’s work and even their daily habits on its principles. Efficiency could be physical, concerned with minimizing the use of time or space in a daily routine, or economic, aimed at maximizing profits through reducing waste or adjusting work practices to increase worker health and productivity. It could be moral, tied to values of living simply so as to charitably share with others, or biological, measured in terms of bodily energy, function, and output and enhancing the chances of evolutionary success. Because of this wide range of potential applications, efficiency as pursued by eugenics supporters took several forms, shaping both the overall direction of the movement and the arguments used to win support for its causes.

The term *national efficiency* specifically referred to strategies of human management intended to maximize the nation’s resources in terms of labor productivity, economic expenditure, and its biological bequests to the future. The term *unfit* reflected this fundamental concern, as it was applied

to those deemed unable to positively contribute to the nation's economy as well as to its genetic inheritance. During the Depression, when funds were scarce, eugenic propaganda played on public concerns about national economic waste in order to strengthen acceptance for policies that would eliminate those who were "born to be a burden on the rest" (fig. 9.2).

One display used at state fairs featured red lights that flashed periodically to mark the intervals explained by the sign's text: how often a person was born in the United States, how frequently large amounts of tax dollars were wasted on the care of "defectives," and the comparatively slow rate at which "high grade" people who were "fit for leadership" arrived on the scene. Lectures at museums and local fairs in the 1930s, like the sermons delivered for the American Eugenics Society (AES) sermon contests of the late 1920s, described how the nation's blood "stream" was being "blocked" and "polluted" by an influx of undesirable genes from so-called degenerates, whose high rate of reproduction was supposedly flooding the nation with poisonous blood. This poison imposed a "drag" on the forward progress of the nation by threatening to halt the rise of national intelligence and by

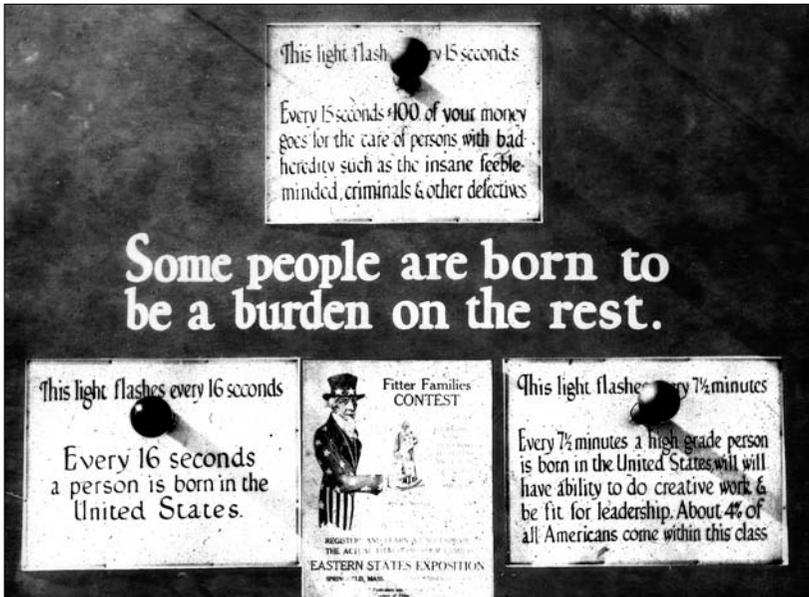


Fig. 9.2. "Some People Are Born to Be a Burden on the Rest," exhibition panel from a "fitter families" exhibit. Photo in the scrapbook of the American Eugenics Society, AES Papers. Courtesy of the American Philosophical Society.

draining state coffers of financial reserves—hence Henry Fairfield Osborn’s reference, in his address to the Third International Congress of Eugenics, to these “parasitic” individuals as “dragnets . . . on the progress of the ship of state.”⁴ Smooth flow could be restored to the nation’s evolutionary stream and political economy only by shifting the balance of the national birthrate from the dysgenic to the eugenic in the interest of national efficiency.

The outward concern for smooth flow on a national level extended inward as well, manifesting in the broad-based, early-twentieth-century revolt against constipation. Otherwise referred to as “civilized colon,” since the condition seemingly occurred only in “civilized” individuals due to their heightened rationality, weak physical condition, and business occupations, constipation was causing the American people to almost universally suffer “from a food blockade in the colon.” Instead of being merely an “inconvenience,” according to health reformers and eugenicists, these blockades posed “a menace to life and health” and were “one of the most prolific of all causes of disease.”⁵ Issue after issue of the *Saturday Evening Post* in the late 1920s and early 1930s contained advertisements for remedies for constipation and its accompanying symptoms, and the mundane prevalence of the malady was captured by Edward Hopper in his painting *Drug Store* (1927).⁶ From the 1910s onward, Americans consumed massive amounts of Kellogg’s breakfast cereals, Quaker Oats, laxatives, agar and paraffin, olive oil, and yeast in their pursuit of personal colonic efficiency. Some of the wealthier attended Kellogg’s Battle Creek Sanitarium for diagnosis; after they ingested a meal tinctured with bismuth, X-rays of their intestines revealed problem areas where the colon was prolapsed or kinked and thus blocked the flow (fig. 9.3). These “crippled” or “delinquent” colons were thought to cause “autointoxication,” a disease whereby “putrefactive poisons” and toxic ptomaines released by rapidly reproducing bacteria in slow-moving feces were absorbed into the bloodstream, causing “poison in the blood.”

Autointoxication was said to produce a plethora of negative symptoms, ranging from “chronic disease” to “premature senility.” One frequently experienced “headache, depression, skin problems, chronic fatigue, damage to the liver, kidneys and blood vessels.” More specifically, it was thought to cause “colitis, . . . gall stones, . . . neurasthenia, . . . paralysis, insomnia, . . . and even insanity.”⁷ Of these ills, those in the mental realm were some of the most feared, though others also offered significant cause for alarm. Ac-

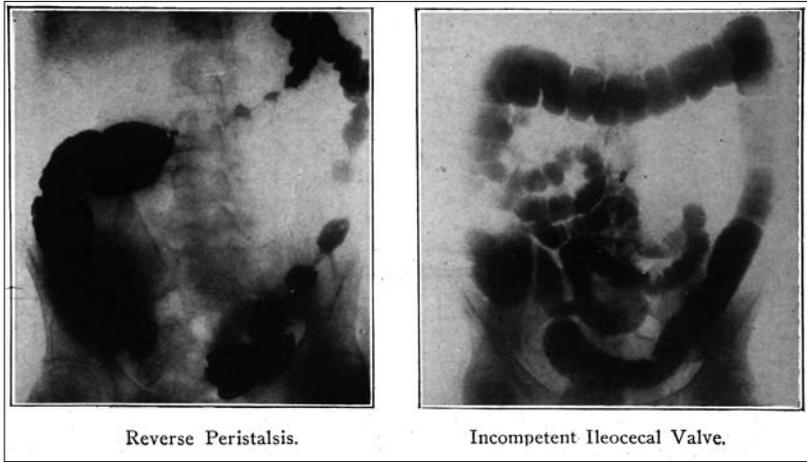


Fig. 9.3. Colon X-rays, in John Harvey Kellogg, *Itinerary of a Breakfast* (New York: Funk and Wagnalls, 1918, 1926), 125.

According to medical texts, these maladies arose, in large part, from the “inefficiency” of a blocked digestive tract. If one’s digestion were slow, the poisons constantly being produced unnecessarily and excessively overworked the other “poison-destroying” organs in the body, such as the kidneys and liver, causing their eventual collapse in addition to an overall generally “lowered bodily efficiency” that increased sickness and lessened productivity.⁸

Even more seriously, constipation was seen as stunting national evolutionary advancement by slowing the mental, moral, and racial progress of the nation. “Poison in the blood” not only increased mental lethargy and degeneracy, it also seemingly blurred the moral conscience of those under its influence. For example, the editor of *Health Culture* magazine, W. R. C. Latson, envisioned how the “food intoxication” caused by a feast including meat (he was a vegetarian) might “lead to acts of violence or immorality, at the memory of which the perpetrator looks in horror and amazement. The diner leaves the table intoxicated with a dozen poisons. A heated argument, a word too much, a moment of frenzy, a sudden blow; and the next morning he awakens to find himself a criminal.” Alternately, a hand could be “laid on his arm, a voice whispers in his ear; and he turns aside to follow the scarlet woman—the scarlet woman whose steps lead down to hell.”⁹ Ministers also emphasized the ungodliness that came from polluting one’s

body, the “Temple of the Holy Spirit,” by eating indigestible food or incompletely masticating it: “A man who through irregular or glutenous eating ruins his health, is not offering to God such a sacrifice.”¹⁰

Furthermore, in 1932, British doctor Ettie Hornibrook, in her book *Restoration Exercises for Women*, revealed that constipation was hindering “civilized” woman’s sexual desire, thus lessening the eugenic birthrate. In her opinion, prolonged constipation was the root cause of women’s frigidity, due to the position of the bowels in relation to the vaginal canal. Because the lack of sexual fulfillment was the primary cause of divorce and because divorce posed a chief reason for the declining “civilized” birthrate, she perceived the prevention of constipation in modern women to be one of the chief medical issues of the decade.¹¹ Because constipation was considered a damper on the productivity, sexual interest, mental clarity, and morality of the “fit,” no wonder it was claimed in a eugenics sermon that “the greatest problem, whether we think in terms of the physical, moral, or spiritual life, is the food problem. The decadence of the modern home, the tragedy of disease are great problems, but food is fundamental. All social progress is dependent upon this. Diet and evolution are inseparable.”¹²

Perhaps diet and evolution seemed so interrelated in part because of the multiple ideological parallels between concepts of national and bodily efficiency. Kellogg spoke of the “civilized colon” as a “poor cripple, maimed, misshapen, . . . infected, paralyzed, inefficient, incompetent,” descriptors that were commonly applied to the “unfit,” who, like the colon, were the site of waste in the national body.¹³ Through his word choice—in which he described the gustatory nerves at the entrance to the digestive system as regulators at “the inspector’s gate” that afforded “important and intelligent protection against injury from foreign substances not intended by nature to be taken into the body”—Kellogg compared the regulatory digestive function of the individual body to immigration officers at U.S. consulates and Ellis Island who probed the backgrounds of prospective immigrants to reject those whose blood they thought would pollute the bloodstream of the national body.¹⁴

The parallels between immigrants and waste continued inside each respective “body.” Internal bodily flow should only progress forward; once it backed up due to blockage, autointoxication began. Likewise, the nation’s genetic heritage and evolutionary progress were seemingly being blocked and poisoned by the inclusion of those of lesser evolutionary standing,

whose development had been obstructed or arrested or had even degenerated backward to its current “defective” state.¹⁵ Utilizing the principles of “colon hygiene,” however, one could purify the intake through dietary reform, sterilize bacteria-infested intestinal walls through the regular use of soapy enemas, and even resort to surgery to cut away obstructions to internal efficiency.¹⁶ Similarly, proponents of “race hygiene” closed the nation’s doors to immigration and turned to surgical sterilization to halt the rapid reproduction of those who were thought to be a hindrance to national efficiency. Thus, the causes, consequences, and cures of constipation became a site where the broader goals of smooth flow and national efficiency were telescoped downward and turned inward.

It was during this period of national obsession over bodily and national efficiency that streamline industrial design began. Designer Norman Bel Geddes’s illustration of the progress of various shapes in a flowing stream (fig. 9.4) can be interpreted as diagramming the concerns of all three.

The streamline form could roughly model: a graphic distribution of the “eugenical classification of the human stock” (consisting of a negligible percentage of persons of “genius” and “special skill” and 90 percent of persons of the “normal middle class,” with the goal of phasing out the remaining “socially inadequate” 10 percent); the shaping process that occurs in the intestines as a result of peristalsis; or the motion of a vehicle through a flowing stream, replete with eddies that Geddes said caused “parasite drag.”¹⁷ Design historians Ellen Lupton and J. Abbott Miller have gone so far as to interpret streamlining as an “excretory aesthetic” because the ideal streamlined form so closely resembles the products of bodily elimination and because, as the first major industrial design style, it encouraged the production of waste through planned obsolescence and the processes

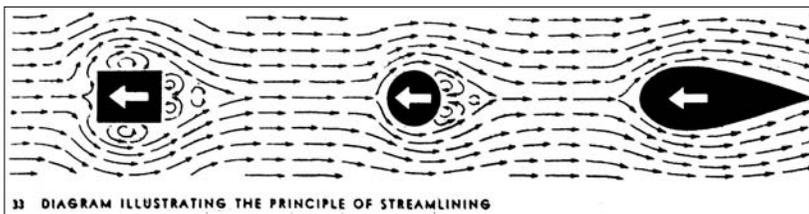


Fig. 9.4. Norman Bel Geddes, “Diagram Illustrating the Principle of Streamlining,” in *Horizons* (Boston: Little, Brown, 1932), 45. Courtesy of the Estate of Edith Lutyens Bel Geddes.

of consumer purchasing and discarding.¹⁸ Designer Raymond Loewy's evolution charts from 1934, which diagrammed changes in appearance over time of numerous goods from telephones to railcars, further elaborated the process of streamlining; as forms became more evolved *and* more streamlined, they became not only less ornamented, per Austrian architect Adolf Loos's proscription on ornament as "degenerate," but also less fussy and intricate as, according to Geddes's definition of streamlining, all projections were eliminated. Streamline designers, like eugenicists and health reformers, thus worked to restore smooth flow by eliminating the poisonous suction caused by "parasite drag" by bringing into line all disabling, outstanding features that were thought to hinder the forward evolutionary progress of their respective areas of reform.

Clearly, the pursuit of smooth flow permeated American culture on a variety of levels, from ideological notions of national efficiency and progress and eugenic beliefs about racial purity to individual concerns for colonic efficiency and streamline designers' obsession with the tapering curve. The style thus resonated with and reinforced these contemporary concerns, many of which were overlaid with eugenic implications regarding enhanced speed, intelligence, and power. Did streamline designers understand these implications and this resonance? Let us return to the advertisement for the laxative Petrolagar targeting the commuting businessman to examine more closely the correlations between streamlining and constipation.

By comparing the "civilized" colon with a streamliner, a highly popular symbol of modernity, the advertisement established an analogy that highlighted both the strengths and a key weakness of "civilized" man supposedly brought about through evolution. Although his highly evolved rationality had permitted the rapid developments in technology and cultural advance symbolized by the train, these developments seemingly had come at a cost to the modern body. His ever-increasing distance from nature, seemingly dictated by an evolutionary paradigm built on a philosophical split between mind and body, was exacerbated even further by a regimented business schedule that was not conducive to answering nature's call. He therefore had had to learn to apply his great rationality and self-control to restraining his own bodily urges, and in the process, he acquired the "crippled state of the colon" that was "an almost universal condition among civilized men and women."¹⁹ After breakfast, for example, instead of automatically going to the toilet and waiting, the businessman hurried to catch

a commuter train that carried him off to his day's work. Similarly, "the ideal of the college girl or the secretary is to go to bed late and then get up as near as possible to the time when she must check in at school or office. . . . Such girls might cure themselves of constipation if they would only get up a little earlier."²⁰

The sedentary urban lifestyle, "concentrated foodstuffs," lack of abdominal exercise and strength, and high amount of mental preoccupation all contributed to this "disease of civilization," which the "lesser evolved" seemingly never suffered from due to their presumed lack of rationality, self-consciousness, and inhibition.²¹ Offering a classic application of recapitulation theory and the evolutionary paradigm, Kellogg equated the "bowel habits" of "wild animals, wild men, healthy infants and idiots," all of whom, in their "natural" state, supposedly "lack the intelligence necessary to disturb their normal functions" and "have better sense than to interfere with the normal promptings of nature." The Japanese, however, according to many Westerners, including Kellogg, occupied a middle position on the evolutionary ladder, and accordingly, they still exhibited healthy "colon customs." Although they were "rapidly becoming sophisticated," they were "not yet so far away from the influence of their primitive life as to have become obtuse to their physical needs as are the people of the older civilizations."²²

As Kellogg's comments partially show, "lesser evolved" peoples did possess two bodily qualities desired by the "civilized": fertility and smooth internal flow (and, according to Nicole Rafter in this anthology, a third quality—sound dentition). Popular health writers and doctors, including Kellogg, Hornibrook, and others, thus thought that by emulating certain primitive practices, civilized humans could regain these lost qualities that were so crucial to maintaining their evolutionary edge. After visiting with the superintendent of the Bronx Zoo about the daily habits of the "higher apes" and inquiring about the "regularity" of the "feeble-minded" charges at Randall's Island, Kellogg determined that "three bowel movements a day, indeed, is the prevailing habit among primitive people and the higher apes," with chimpanzees and orangutans going as often as four to six times daily. Recommending that "we must choose our bills of fare from the coarse [vegetarian] products on which our primitive ancestors subsisted and on which our forest cousins still live," he warned that "one bowel movement a day is very marked constipation."²³

In another application of the idea of recapitulation, because “savages,” “semi-civilized people, and the peasantry of civilized nations” evacuated in a “crouching or squatting position,” Kellogg strongly suggested that “toilet seats should be low and should have a backward slope.” However, given the absence of these qualities in the “ordinary closet seat” of the 1920s, a “stool about eight inches high” could be placed in front of the seat in order to support the feet, so that one’s thighs on the abdomen could “compress the bowel.”²⁴ Hornibrook, in *Restoration Exercises for Women*, concurred, favoring the use of a stool to produce stool; in a humorous note in the text, Geddes, who gave this copy to his second wife, Frances Resor Waite, was unclear precisely which stool should be between eight and sixteen inches in size (fig. 9.5).

Additionally, the author promoted abdominal exercises that mimicked the primal swivel of the hips and rejected the jerky, machinelike motions that supposedly came so easily to civilized, white people. By restoring themselves to primitive regularity, modern man and woman would be assured not only of increased vitality and fertility (given Hornibrook’s belief in the link between constipation and sexual desire), but also of less likelihood of disease. A “speedy passage” through the bowels ensured that “any putrefactive bacteria chancing to enter the body would be swept through the colon before they had time to establish a footing.”²⁵

The lore on constipation surfaced in a multitude of popular venues. In addition to learning its woes from lectures and sermons on eugenics, a businessman such as designer Egmont Arens, who was aware of the line of “Harper Books for Business Men, Spring 1932,” could have chosen to read *Functional Disorders of the Large Intestine* by Jacob Buckstein or *Peptic Ulcer* by I. W. Held and A. A. Goldbloom.²⁶ If he happened to work for a large corporation such as U.S. Steel, the Sherwin-Williams Company, or others trying to promote the good health and productivity of their employees, he might have been given *How to Live: The Nation’s Foremost Health Book*. The book (prepared by Yale eugenicist Irving Fisher and Eugene Fisk under the Hygiene Reference Board of eugenicist Paul Popenoe’s Life Extension Institute) contained chapters with titles such as “The Danger of Hasty Eating” and “How To Relieve Constipation without Drugs,” in addition to “Heredity and Mate Choosing” and “Eugenics and Birth Control.”²⁷ In 1939 and 1940, a visitor to the New York World’s Fair could have studied the model of the human digestive process presented by the Deutsche

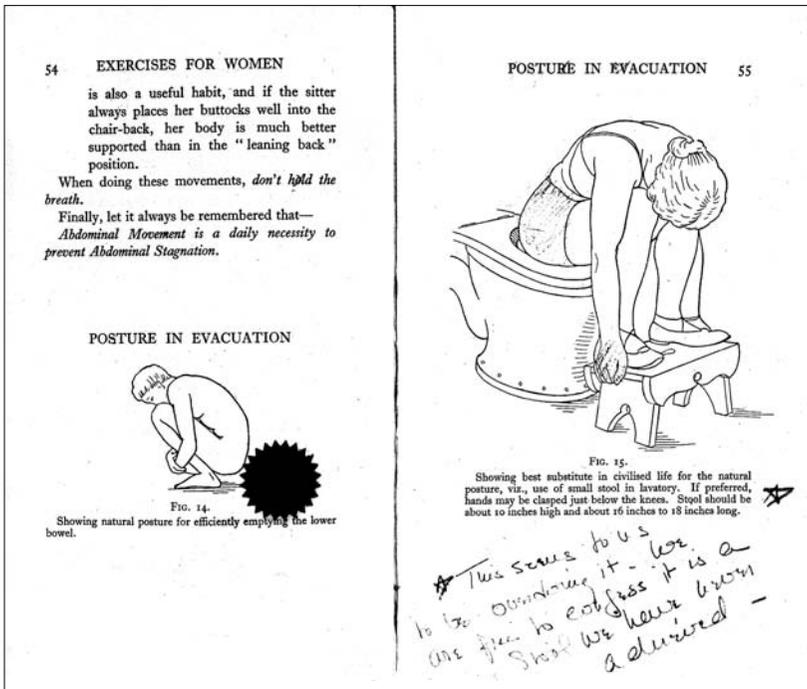


Fig. 9.5. Norman Bel Geddes's copy of Ettie A. Hornibrook's *Restoration Exercises for Women* (London: William Heinemann, 1932), 54–55. In Norman Bel Geddes Papers. Courtesy of the Harry Ransom Humanities Research Center and the Estate of Edith Lutyens Bel Geddes.

Hygiene Museum or toured the Saraka laxative exhibit at the Hall of Pharmacy. The latter contained a "new mechanical device," created by designer Donald Deskey, "consisting of turning disks and flashing lights" that showed "how peristalsis induces rhythmic flow of waste through the colon."²⁸

Furthermore, the metaphor of bodily efficiency was applied to one role that the profession of industrial design played during the Depression. Streamlining in product design was considered to be a lubricant to the national economy that restored regular economic flow. Articles and advertisements in trade magazines in the plastics industry, for example, claimed that companies that shifted from handmade ornamental molds to streamlined, machine-cut ones not only would save money through having less costly molds that took less material to fill but also would increase sales through the resultant lower pricing, as well as through the use of innovative colored materials and modern styling. As company after company made

this transition and saw sales increase, competitors were forced to follow suit, creating an abundance of commissions for industrial designers as well as a constantly increasing number of streamlined products. Furthermore, designers actively promoted the economic benefits of planned obsolescence, to the extent that having a new model each year became standard company procedure as a way to increase consumer desire and spark sales. Whether the rise of industrial design actually boosted the gross national product is debatable and difficult to prove historically, as historian Jeffrey Meikle has shown. Yet in the mid-1930s, some corporations undoubtedly did claim that redesign had, in fact, increased their sales, due in part to the elimination of waste in materials and production processes.²⁹

The familiarity of streamline designers with bodily process and metaphor, as suggested by the previous examples, is confirmed in their archives, almost all of which reveal that health, fitness, diet, and constipation were among their common concerns.³⁰ Although Raymond Loewy and Walter Dorwin Teague did not leave records of any of their digestive problems, both took pride in keeping fit and eating lightly; Loewy regularly had “an apple and saccharin-sweetened coffee” for lunch and indulged frequently in Turkish baths, ultraviolet rays, calisthenics, massages, and rubdowns at the elite New York Athletic Club.³¹ In 1926, Deskey’s wife wrote to his mother from Europe that “Donnie” was “sick at his stomach. . . . [T]he dear boy has suffered from one of those refined and discussable maladies this winter called chronic constipation and then he’s awfully careless about looking after himself and won’t take exercises in the morning as I’ve started to do, because we get none except a bit of walking to keep us in trim.” She lamented how hard he was working, sighing, “If he’d only follow my advice I think he’d be a lot better off, but this very condition makes him too tired and indolent to do the things he needs.”³²

Arens, however, struggled with his colon far more than the others on record. With his flat feet, “poor heart and ‘wind,’” he could not “stand violent exercise” and became overweight. From boyhood on, he had been “exceedingly constipated. . . . Constipation would cause pounding in his ears—lassitude, loss of energy, general malaise.” Even after visiting several doctors and trying “all kinds of cures . . . Bran—Japanese Seaweed—various gelatinous [*sic*] preparations . . . cod liver oil in beer,” and mineral oil taken through various orifices, “nothing worked” until he discovered that “Feen-a-mint—double dose—would liquefy” the bowel. In 1946, he re-

ceived advice from a doctor at the Johns Hopkins Hospital to take laxatives and enemas, made of two quarts of water and a teaspoonful of metaphorically poignant Ivory Soap flakes or oil, three times a week. He proceeded to do so for the next ten years and complained of “headache and nausea” if he only washed his lower colon and failed to go deeper. Sounding like an advertisement for Ivory Soap, he affirmatively declared, “The soapy water seems to get past the bottle neck.”³³

Although rarely ill, designer Henry Dreyfuss lived the life of a typical “civilized” businessman that was so frequently bemoaned by health reformers, with one exception: he abstained from alcohol. Breathing “only the barest minimum of fresh air necessary to sustain life” while constantly working in his office, loving “good food,” and getting “about as much exercise as a hibernating tortoise,” he resorted to diet fads such as the “Clark Gable” to trim down. This oscillating health pattern continued throughout his life. However, whenever he thought a friend was “thickening too much in the midriff,” “with a tactlessness he never display[ed] in business,” Dreyfuss would “send him a neatly-typed caloric regimen and a portable bath scale.” In his pathbreaking book on ergonomic design, *Designing for People* (1955), he thrice mentioned digestion, noting that one of the designer’s responsibilities was to lessen those things that impaired digestion. He set a formidable precedent with his sloping toilet seats, a design that matched Kellogg’s recommendations in *Itinerary of a Breakfast* (fig. 9.6).³⁴

Clearly realizing the demand for such a product in the sophisticated “modern” home, in the late 1930s with the help of medical doctor Janet Travell, Dreyfuss designed a “cleanlined” saddle-seat toilet classily named the “Criterion.” The toilet’s design dramatically enforced the “hygienic correct posture” during evacuation; the sloped seat angled backward, achieving the “natural” position every time.³⁵ Only a few years earlier, another designer had heeded Kellogg’s advice on toilet design by creating the “toi-lo-let,” which hung from the wall “lower than the normal toilet, thus creating an important aid in the relief of constipation. A new patented toilet seat registers the sitter’s weight.”³⁶ Various designs by Arens at that time also reflected his desire for smooth flow. Suggestively, given his personal experience, he designed a postwar bathroom that would break the “Bathroom Bottleneck” that many families experienced right before breakfast when everyone was getting ready for the day. His design facilitated



Fig. 9.6. Photograph of the Criterion Closet for Crane Company, ca. 1936, designed by Henry Dreyfuss (American, 1904–72). Henry Dreyfuss Collection, Cooper-Hewitt National Design Museum, Smithsonian Institution, Washington, DC. Gift of Henry Dreyfuss, 1972.

multiple people's use of the room at once by isolating the toilet and the shower in separate enclosures, for privacy.³⁷ Earlier, in 1935, he had promoted a national highway system as the cure for the nation's "communications constipation." According to Arens, the country was "cramped and paralyzed by an obsolete transportation system. There are no veins through which the blood of National Energy may flow sufficiently strong and fast to keep this great sprawling body nourished."³⁸ Other designers and clients

also expressed their need for smooth flow through streamlined styling. Expatriate Austrian architect Frederick Kiesler complained of the “constipated” spatial flow of certain floorplans, and Henry Luce (of *Time* and *Life* magazines) solicited Dreyfuss for suggestions on how to streamline the magazines’ layouts. The designer suggested making *Life* “easy and comfortable to read” in part by having the pictures lead “from one to the next by their arrangement, cropping and selection. Flow is the word.”³⁹

Dreyfuss’s apt statement captures equally well the concerns of eugenicists, health reformers, and designers. Both “civilized” bodies and the streamline style aimed for speed, regularity, and overall systematic efficiency. A body having these qualities was deemed “fit” and therefore eugenic. It could seemingly forestall disease, increase economic productivity and fertility, prevent mental degeneracy, and serve as a catalyst for national efficiency and racial progress. Like bodies, modern buildings and products were also classified according to their “fitness,” the level to which their forms suited their functions. Streamlined products bearing the traits of speed, regularity, and efficiency made the grade. The curved forms increased speed in mobile products by lessening drag and in immobile products otherwise contributed structural strength, demanded fewer materials, and promoted sales due to their popularity, thereby increasing economic flow to their designers and producers. Flow was, indeed, the word.

These traits of the style are all well known, and one does not need to understand the popular concern with national and bodily efficiency for them to make sense, especially from an economic standpoint and from the standpoint of the physical laws of air and fluid dynamics. Given the style’s theoretical roots in biological evolutionary theory, however, and designers’ familiarity with literal and metaphoric constipation and products intended to alleviate the condition, the possibility that the rhetoric of “speed,” “efficiency” and “flow” in streamlining literature intimated eugenic notions of national and bodily efficiency must be considered.⁴⁰ Their archives suggest that some designers did, in fact, correlate speed, intelligence, progress, and the reduction of drag with enhanced evolutionary progress.

Arens most clearly spelled out these connections in his speeches, beginning with “Creative Evolution of the Printed Word,” a speech from 1933 that he also titled “Streamlining the Printed Word” and “Tempo in Typography”; these title changes and the speech’s content reflected Arens’s

belief that evolution was ultimately responsible for the increased tempo of modern times to which streamlining responded. The high level to which speed, streamlining, and evolution were interconnected was borne out through other talks of his, and in some instances, they almost exactly mirrored contemporary eugenicists' concerns. In his lectures on "Streamlining in Nature," delivered around the country between 1934 and 1936, Arens showed his audiences slides of a variety of "high speed conveyances," which he then contrasted with an image of oxen. The oxen exemplified "early transportation" methods such as those used by "the first covered wagons that crossed the continent." His made his point clearly: "To drive a team of oxen does not necessitate fast thinking. A country yokel's slow wit is good enough at [three] miles per hour." Then he flashed a slide of a popular, record-setting race car driver: "Compare that in your mind with Malcolm Campbell going at 300. As soon as he sees an obstruction he has to swerve—or else he hits it. He has to think 100 times as fast."⁴¹ One year later, Ellsworth Huntington, the Yale University professor who was also president of the American Eugenics Society, reiterated this idea in his presidential address in 1937. He stressed that "as life becomes more complicated the need of intelligence and character becomes greater. The drivers and mechanics who operate and care for a fleet of buses need greater intelligence, sobriety, and reliability than did the men of a former generation who drove stage coaches and cared for the horses. . . . Civilization constantly demands higher ability."⁴² He had begun this analogy in print in *Tomorrow's Children* (1935), where he argued that, like "driving an automobile at sixty miles an hour . . . the greater the speed, the greater is the need for the utmost perfection" in "good inheritance, good training, and good health." Because "modern civilization has struck a sixty-mile gait," the need for a eugenic society was "greater than ever before."⁴³

This idea of the greater rapidity and intelligence brought about by evolution was further elaborated by Arens, who was convinced that certain linguistic developments evidenced racial superiority. In his speech on typography, he described how picture writing was "the most important single step in the history of human evolution," making "civilized society" possible, but that as society had become more complex, writing had shifted from pictures to symbols to words to letters. He attributed "the difference between Western civilization and Eastern" to this latter development. Because the Eastern nations had not made the shift from having separate

characters for each word to having letters make up the various words, Arens thought that “a Chinese scholar has to spend all his energy learning the language. There is no energy left for creative thinking. He has to learn hundreds of thousands of symbols.”⁴⁴ By contrast, Arens stated, “we learn twenty six, which are mastered at the age of ten years. That is the enormous economy of the phonographic system.”⁴⁵

Etymologist Paul Hugen agreed that efficient language was a trait of the “civilized.” He opened his article “What Makes a Language Easy?”—a copy of which he sent to Arens—with this reasoning: “Because language is the means of interpreting the whole human mind, any language that is adequate to that task in a highly civilized society can never be entirely easy to a savage. “It is only in Teutonic languages, for example, that an electric switch can be simply and conveniently marked ‘On’ and ‘Off.’ The Latin languages have no such words. It is only in English that you can say, using the same word ‘Go’ unchanged in any position: ‘Go! You can go! Why don’t you go?’”⁴⁶ This efficiency, Arens believed, had been produced through the processes of “natural selection” that had weeded out all that was too “slow” and “cumbersome” and increased the tempo at which a text could be read. “This speed increment takes place exactly in proportion as the tempo of life advances,” he said.⁴⁷

One such change, ironically, was the shift from text to photographs utilized by magazines such as *Time*. A critic of these photographic magazines explained that “carefully chosen pictures multiply the speed with which words can explain or describe an event. . . . [S]till and motion pictures speed up our learning processes, and tell a story more quickly and effectively than words.” But, he warned, “let’s be on our guard; for the mental effort required to absorb a story in pictures is slight indeed. . . . Pictures and signs were used by prehistoric man; the ability to use words, or language, is the chief distinction between civilized men and savages.” Therefore, “if you are wise, if you wish to gain distinction as a civilized man, *words* will be your tools of thought, you will use *pictures* merely to help you clarify and visualize what you are learning.”⁴⁸

Other textual changes to increase reading speed included the rejection of capital letters in graphic design, employed by Bauhaus typographers in their “universal” typeface as well as by an anonymous graphic designer creating the layout on the brochure for the House of Tomorrow at Chicago’s Century of Progress Exposition. The designer constructed the text without

capital letters at the start of sentences to avoid halting the reader's eye. In his text, he highlighted as well the efficient features of the house's design.⁴⁹ Another textual change was the "recognition of the non-sentence" extended by Dr. Janet Aiken, a linguist at Columbia University. Having learned of her accreditation of sentence fragments as proper writing, Arens wrote to her late in 1934 to commend her for making "a very important step in speeding up language to the needs of a fast-moving civilization. . . . We are already consuming too much energy climbing over the mountains and valleys of traditional speech when, as a matter of fact, we should have some straight and graded highway, so that ideas may travel a little faster than they did in the days of the ox-cart." She responded, "While language moves slowly, it does adapt itself to modern needs, does go streamlined to suit the modern tempo."⁵⁰

Presumably, Arens wanted to increase the pace at which ideas moved so that more ideas could be absorbed in ever shorter amounts of time, as was demanded by the rapid evolutionary advance of the age.⁵¹ Many people accepted this latter notion, believing even that evolution itself was accelerating, thanks in part to eugenicists, who were rationally controlling the selection process. Huntington captured this idea with an analogy to a racehorse: "The difference between man as he might be under a sane eugenic regime and man as he actually exists is like the difference between an ordinary old-fashioned carriage horse that can only go a mile in four minutes, and a race horse that goes the same distance in less than two minutes."⁵² Geneticists such as H. J. Muller, who discovered the ability of X-rays to cause genetic mutations, were also seemingly speeding up "evolutionary changes over 1000 per cent."⁵³

To some, this increased speed demanded increased intelligence, as well as streamlined typographic fonts to further facilitate the increase of intelligence. As Arens asserted so clearly, "This age needs streamlined thinking to keep pace with our streamlined machines."⁵⁴ To this end, he praised the typeface used in the body of the *New York Times*. Although the Gothic script of the paper's title emphasized "the long-established *tradition* of the Times," the text was composed of "a very *fast-reading* type. . . . It is vibrationless, quiet, streamlined for speed" (emphasis in original).⁵⁵ The civilized person reading it, therefore, could cover many of its articles during a coffee break, acquiring knowledge while at the same time keeping his or her much-needed mental muscles in tone.

Yet at a round-table discussion on “Fashion in Typography” that included Egmont Arens, René Clark, and Joseph Sinel, an anonymous young man in the audience asked a significant question: “Why all the speed? . . . I know when I read a beautiful book, I don’t want to rush through it.” The panel members all agreed that, for commercial purposes, speed was essential. Clark explained, “We are up against right now a speeding up of our whole civilization—our whole life. The tools we have to control with regard to speed have to be sharpened and have to be made as effective as possible so that we can handle this amazing machine which is tearing along at a great speed. We have to perfect the machinery that holds it in order,” and he might have added, lest it fall apart.⁵⁶ Arens, in fact, concluded his lecture on “Tempo in Typography” with this very idea: “Our whole civilization may come to a standstill unless we can develop faster tools for thinking.” As a style permeating U.S. industrial, graphic, and architectural design, streamlining offered just the tool he desired to maintain the nation’s economic and evolutionary edge.

At the same time that the greater intelligence and productivity supposedly brought through evolutionary advance was capturing the public spotlight, corresponding attention was being paid to increases in the area of physical speed based on heredity. A book review of Louis Roule’s *Fishes and Their Ways of Life* (1935) caught Arens’s eye by stating, “Prof. Roule discourses on the connection between blood and speed (the fastest fishes have the richest blood streams).”⁵⁷ Arens was already generally aware of this principle, for in his lectures on “Streamlining in Nature,” he included examples of purebred animals, such as the greyhound, whose speed, he said, was “in the blood.”⁵⁸ Harry Laughlin, superintendent of the Eugenics Record Office, had been making similar determinations as well in his study of the inheritance of racing capacity in the thoroughbred horse. Despite the genetic complexity of the inheritance of traits involved in racing capacity, Laughlin still was certain that “all of the hereditary units which make up racing capacity are inherited in accordance with chromosomal behavior.” In the display showing his results at the Third International Congress of Eugenics at the American Museum of Natural History in 1932, he included his discovery that racing speed itself was seemingly accelerating. Based on statistical studies of 150 years of records on racehorses, he determined that “selectively breeding swift horses has progressively produced swifter ones.”⁵⁹ Whether in horses or humans, swiftness and slowness

were derived from one's ancestry, eugenicists believed, *and* were related to how streamlined one's physique was.⁶⁰ "In industrial societies, natural selection favored brain power," wrote historian James Whorton: "Heavy musculature work was for 'animals or the lower races.' Greater than usual bulk was thus a burden in the 'race of life'; 'piles of parasitic muscles' required 'an undue amount of nourishment,' lowering bodily efficiency (and thus brain power)."⁶¹ A svelte, streamlined body with an intelligent mind thus represented the evolutionary ideal.

The public thrill for physical speed during the late 1920s and 1930s was apparent in the large amount of news coverage awarded to champions—be they pilots, race car drivers, trains, horses, or dogs—which showed that the breaking of speed records had become a national fascination. The transatlantic flight of eugenics supporter Charles Lindbergh in 1927 evoked national and international hysteria partly because it beautifully symbolized the technological and racial advance of Euro-American civilization. In 1934, multiple newspapers headlined the successes of American planes and trains, which won international races and shattered domestic transcontinental records.⁶² More local speed thrills were obtained at the racetrack and show ring, where thoroughbred horses and greyhounds competed to the joy and chagrin of bettors and breeders. The *New York Herald Tribune* and other newspapers offered regular coverage of champion dogs and horses, of which Arens and Teague saved numerous clippings.⁶³ Illustrations and advertisements in *Vogue* magazine depicted "well-bred" men and women wearing their finest fashions (such as "Whippet" gloves and clothes made from "thoroughbred" fabrics) at the horse and dog races, at times symbolically holding purebred pets at arm's length on a leash.⁶⁴

The greyhound in particular caught the attention of sculptors, designers, advertisers, and businesspeople alike as an apt symbol of evolutionary acceleration, streamline sophistication, and good breeding. Sculptures of the goddess Diana—svelte, classical female nudes alongside striding hounds—graced the gardens and vacation ships of the wealthy, serving less as a reminder of the hunt than as an affirmation of the beauty and fitness of the Euro-American purebred.⁶⁵ In 1928, preeminent animal sculptor and feminist Katherine Lane Weems captured the spirit of the race in her sculpture of two racing greyhounds, *Greyhounds Unleashed*, subtly giving a female the edge over her male competitor.⁶⁶ Greyhound Bus Company used the racing figure for its name and logo; when Loewy began designing for the

company in the late 1930s, one of his first steps was to make the logo less bulky and more streamlined by reducing the greyhound's weight and musculature. Throughout the 1930s, hood ornaments of leaping greyhounds, anchored only by their back legs, graced Ford and Lincoln Zephyr automotive models. Teague streamlined them even further in his 1940 design for the Lincoln Zephyr Continental and Custom by enclosing the animal's form within the metal ridge marking the hood's center (fig. 9.7).⁶⁷

Other automobile designers took notice of the greyhound as well, structurally placing their engines in such a fashion as to mimic the anatomical arrangement and weight distribution of the dog. For a postwar Studebaker design, Loewy wanted the car to "look fast, whether in motion or stationary. I want it to look as if it were leaping forward. . . . I want one that looks alive as a leaping greyhound."⁶⁸ Visitors to the New York World's Fair could "Greyhound through the Fair" by riding the buses provided; some likely even saw a float of "America," symbolized as a mammoth white racing greyhound setting a fast pace for the world to follow in both technology and racial purity.⁶⁹ By the time this float was made in the late 1930s, European countries (Germany in particular) had already grabbed the torch of eugenics from the United States and sprinted into the lead. However,

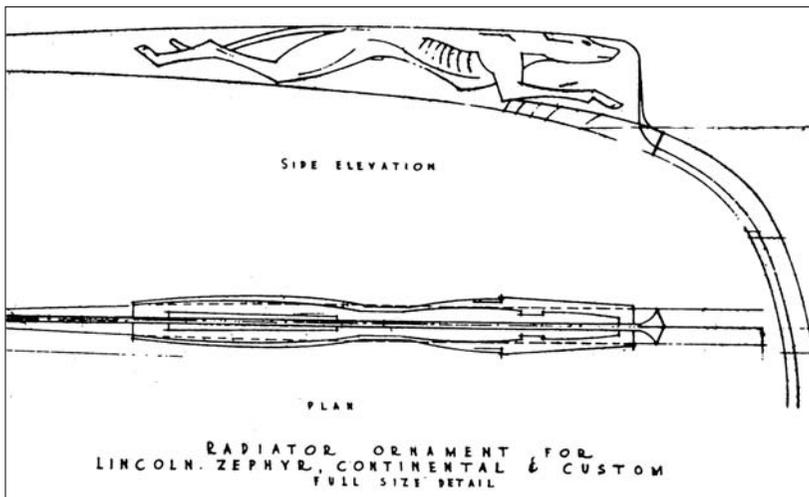


Fig. 9.7. Walter Dorwin Teague, radiator hood ornament for the Lincoln Zephyr Continental and Custom. On Microfilm roll 35-6, Walter Dorwin Teague Papers. Courtesy of the Special Collections Research Center, Syracuse University Library.

enough Americans were still absorbed with increases in speed, intelligence, and genetic purity that, from a historical vantage point, the thoroughbred greyhound seemed to have been on its way to becoming a prominent national symbol.⁷⁰

After all, the American Birth Control League founded by Margaret Sanger had been working throughout the 1920s “To Breed a Race of Thoroughbreds,” as their slogan declared, and W. E. D. Stokes envisioned his nephew, Anson Phelps Stokes Jr., a potential candidate for the presidency of Yale University in the 1920s, turning the school into a “Stud Farm for boys” that would “graduate men with healthy bodies and healthy minds, trained to realize their duties to their country, themselves and their offspring.”⁷¹ “Fitter families” contests across the nation had been promoting this ideal to the middle class by hanging out signs that asked, “Are You a Human Thoroughbred?” (fig. 9.8).

Chesterfield cigarettes took up the theme of the thoroughbred in its advertisements as a way to market its goods to the elite. Church congregations learned not to breed from “‘scrubs’ but from pure blood . . . and pedigreed stock” and that “whether it be the live stock at the fair, the horses on the track, or a brilliant assemblage of men and women, there is nothing in the world so striking, so inspiring as a thoroughbred. Nature, unaided, . . . produces no thoroughbred class,” yet through cooperating with nature, humans could produce the “perfect type, whether it be an American Beauty Rose, . . . a seedless orange, . . . a Morgan or a Clysdale, an Ayrshire or a Jersey, a champion in the Olympic games, or a gentleman and a scholar.”⁷² Through cooperation with the natural principles of streamlining, designers likewise strove to create the “ultimate type” for each design through “the perfect adaptation of form to function” and the removal of drag-producing impurities.⁷³ The smooth flow they literally and metaphorically achieved thus had to have resonated, consciously or unconsciously, with the widely popular belief that greater intelligence, speed, and evolutionary progress would come through thoroughbred *bloodstream lines*.

Overlaps in the language and ideas of national, bodily, and product efficiency—as embodied in the theories and writings of eugenicists, health reformers, and streamline designers—were multiple and apparent in the interwar period. As Dreyfuss declared, “Flow is the word,” and all three utilized the terminology and metaphor of the “stream.” Yet in all, the stream was blocked by “massive obstacles” that hindered efficiency and

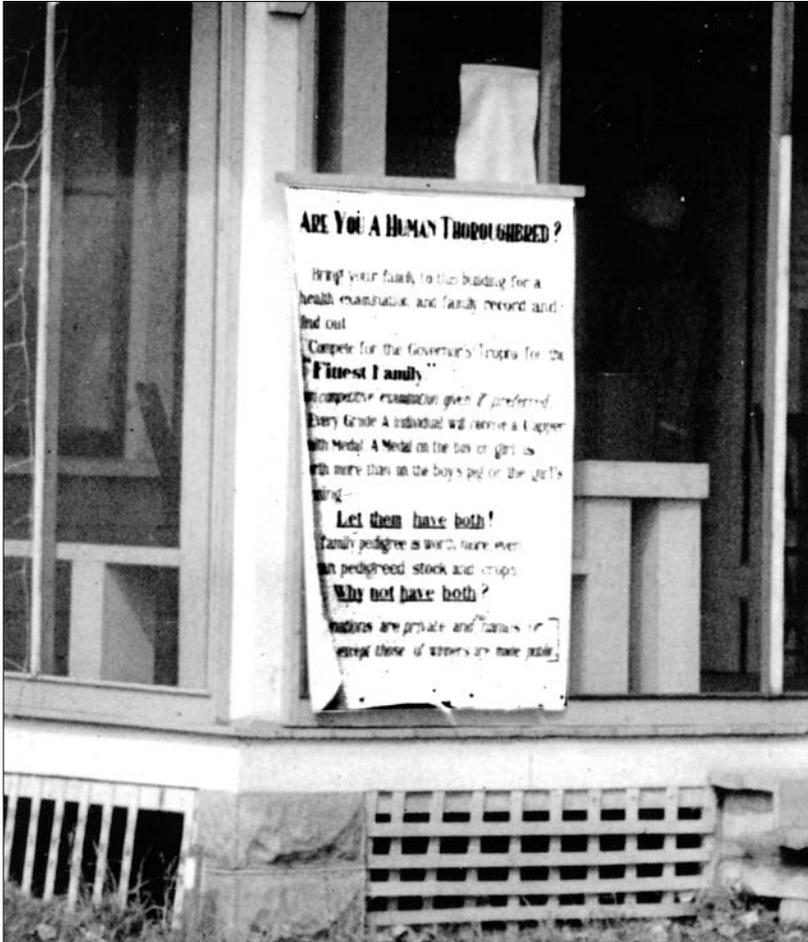


Fig. 9.8. "Are You a Human Thoroughbred?" Detail of a photo of the Fitter Families for Future Firesides exhibit. Photo in the scrapbook of the American Eugenics Society, AES Papers. Courtesy of the American Philosophical Society.

evolutionary progress. These protrusions, which were socially, genetically, intestinally, or artistically "out of line," caused "parasite drag" (that is, "auto-intoxication"), a poisonous condition that exponentially decreased productivity by robbing the host of its efficiency, energy, and profits. Affected social groups, colons, and products were described as "delinquent," and their presence evoked fear for the mental stagnation and degeneracy that were thought to accompany them.

To further evolutionary progress, therefore, politicians, health reformers, and designers turned to streamlining as a means of restoring purity to their respective areas of reform. By trimming the waste/waist and reforming the “tail end”—be it an evolutionary “inferior,” an obstinate colon, or a nontapering product design—efficiency experts in each case eliminated drag and restored smooth, speedy flow, thereby ensuring continued mental and racial progress. Both designers and eugenicists demanded an overall increase in physical performance, mental speed, and national intelligence as a necessary accompaniment to the seeming increase in the pace of evolution and its increase of the speed of products and production processes. Designers’ visions of a speedy, progressive, streamlined technology thus worked hand in hand with the corresponding social amelioration that was proffered tantalizingly through the implementation of eugenics and health reform.

Notes

1. Caption titled “Early Transportation,” Box 57, “Writings/Lecture Notes/Slide Captions,” Egmont Arens Papers, Special Collections Research Center, Syracuse University Library, Syracuse, NY (hereafter cited as Egmont Arens Papers).

2. Petrolagar advertisement, 1937, reprinted in Ellen Lupton and J. Abbott Miller, *The Bathroom, the Kitchen, and the Aesthetics of Waste: A Process of Elimination*, Ex. Cat. (Cambridge, MA: MIT List Visual Arts Center, 1992), 69. Lupton and Miller offer a psychological interpretation of the fecal metaphor of the streamline style.

3. John Harvey Kellogg, *Itinerary of a Breakfast* (New York: Funk and Wagnalls, 1926), 3.

4. Henry Fairfield Osborn, “Birth Selection vs. Birth Control,” *Forum* (August 1932): 79, also quoted in a letter from Charles Davenport to Frederick Osborn dated July 29, 1932, Folder “Henry Fairfield Osborn,” Charles B. Davenport Papers, American Philosophical Society, Philadelphia, PA (hereafter cited as CBD Papers). Davenport himself referred to “defectives” as those who put the “brake on social progress”; see letter from Davenport to Chloe Owings dated August 13, 1934, Folder “Chloe Owings,” CBD Papers.

5. Kellogg, *Itinerary of a Breakfast*, 96.

6. A useful and accessible collection of laxative advertisements can be found in “Medicine and Madison Avenue,” an online collection from Duke University’s Rare Book, Manuscript, and Special Collections, available at scriptorium.lib.duke.edu/mma (accessed January 28, 2006).

7. Kellogg, *Itinerary of a Breakfast*, 32, 145–46, and Whorton, *Crusaders for Fitness: The History of American Health Reformers* (Princeton, NJ: Princeton University Press, 1982) 221.
8. Whorton, *Crusaders for Fitness*, 189, and Kellogg, *Itinerary of a Breakfast*, 36, 147.
9. Whorton, *Crusaders for Fitness*, 223.
10. Folders “William E. Griffin, Sermon 16” and “Lewis Kent, Sermon 15,” 1926, both in the American Eugenics Society Papers, American Philosophical Society, Philadelphia, PA (hereafter cited as the AES Papers).
11. Ettie A. Hornibrook, *Restoration Exercises for Women* (London: Heinemann, 1932), ix, 11–13, 15–28, 54–55.
12. “Sermon 15,” Folder “Lewis Kent, Sermon 15,” AES Papers.
13. Kellogg, *Itinerary of a Breakfast*, 71, 107.
14. *Ibid.*, 45–50. On the training of officials at U.S. consulates abroad in immigrant screening techniques, see Folder “Harry H. Laughlin, 1923, #2,” CBD Papers.
15. Ellsworth Huntington, *Tomorrow's Children: The Goal of Eugenics* (New York: John Wiley and Sons, 1935), 45; Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge, MA: Harvard University Press, 1998), 32–60, 127; Kellogg, *Itinerary of a Breakfast*, 63; Whorton, *Crusaders for Fitness*, 168–200.
16. Kellogg, *Itinerary of a Breakfast*, 106–8; on surgery, see Whorton, *Crusaders for Fitness*, 218.
17. A poster, titled “Eugenical Classification of the Human Stock,” was on display in the eugenics exhibits at the American Museum of Natural History that accompanied the Second International Congress of Eugenics in 1921; the poster specified these percentages. A photo of the poster is in the archives of the Second International Congress of Eugenics in the American Museum of Natural History Library, New York. On parasite drag, see Norman Bel Geddes, “Streamlining,” *Atlantic Monthly* 154 (November 1934): 555–56.
18. Lupton and Miller, *The Bathroom, the Kitchen*, 65, 67.
19. Kellogg, *Itinerary of a Breakfast*, 3.
20. Walter Alvarez et al., *Help Your Doctor to Help You When You Have Constipation* (New York: Harper and Brothers, 1942), 13, 14, 36–37.
21. *Ibid.*
22. Kellogg, *Itinerary of a Breakfast*, 108–12. By “older civilizations,” it seems Kellogg meant civilizations that he considered to be more evolved, that is, more technologically developed, not necessarily those that possessed a longer history.
23. *Ibid.*, 33, 110–11, 82–83, 93.
24. *Ibid.*, 73–76.

25. On the benefits of speedy digestion and circulation, see Kellogg, *Itinerary of a Breakfast*, 224, and Whorton, *Crusaders for Fitness*, 243.

26. See the brochure "Harper Books for Business Men, Spring 1932," in Box 46: "Publicity/Programs," Egmont Arens Papers.

27. Taken from the advertisement for *How to Live: The Nation's Foremost Health Book*, found on the back page of Kellogg, *Itinerary of a Breakfast*, 1926 edition.

28. *Official Guidebook, New York World's Fair, 1939* (New York: Exposition Publications, 1939), 151–52.

29. See Jeffrey Meikle, *Twentieth-Century Limited: Industrial Design in America* (Philadelphia: Temple University Press, 1979), 70–73, 80–82, 96–99, and Lupton and Miller, *The Bathroom, the Kitchen*, 5–8.

30. Charles Davenport attended the Battle Creek Sanatorium; see letter from Davenport to E. L. Eggleston, September 9, 1930, Folder "E. L. Eggleston," CBD Papers.

31. On Teague, see "Walter Dorwin Teague: Dean of Design, a Portrait," *Printer's Ink* (January 30, 1959), Walter Dorwin Teague Papers, Special Collections Research Center, Syracuse University Library, Syracuse, NY (hereafter cited as WDT Papers); on Loewy, see John Kobler, "The Great Packager," *Life*, May 2, 1949: 110–22, located in the Raymond Loewy Papers, Cooper-Hewitt National Design Museum, New York, NY; and "Modern Living," from the Business and Finance section of *Time*, October 31, 1949, Folder "Product Design and Development Division, Speeches and Writings by Staff, 1953–1957," Container 171, Raymond Loewy Papers, Library of Congress, Washington, DC.

32. Letter from Mary Deskey to Donald's mother, Folder "Letters: 1922–26," Donald Deskey Papers, Cooper-Hewitt National Design Museum, New York, NY (hereafter cited as Donald Deskey Papers).

33. See Folder "Medical Records, Misc., 1933–1960," Box 65, Egmont Arens Papers.

34. Folder "Anecdotes, I. D. Book," August 31, 1953, File "Publications: Designing for People (Correspondence, Memos, etc.)," Box 1, Henry Dreyfuss Papers, Cooper-Hewitt National Design Museum, New York, NY (hereafter cited as Henry Dreyfuss Papers); also "Machine Age Artist," *Forbes* (May 1, 1951), and "Management: Art for Profit's Sake," *Investor's Reader* (November 3, 1952), both on Microfiche #13, "Articles about Dreyfuss, Pre-1950," Henry Dreyfuss Papers. See also Henry Dreyfuss, *Designing for People* (New York: Paragraphic Books, 1955), 41.

35. See photos of "Criterion Closet," 1936, 1944, 1953, and the "Neovogue Closet," 1940, Folder "Industrial Design: Cities Service Petroleum Inc.—Crane Co.," Box 2; Microfilm roll #26, "Drawings and Photographs, Crane Co.,"; Microfilm roll "Crane—1935"; clipping from *House and Garden*, Building Series (August 1950), on Microfiche #13, "Articles about Dreyfuss, Pre-1950"; memo from Henry Dreyfuss to M. Weinstock,

December 24, 1953, Folder "Publications: Designing for People (Correspondence, Memos, etc.)," Box 1; correspondence with Crane Co. in Box "Client Solicitation, Budd Co.—Time, Inc.," all in Henry Dreyfuss Papers.

36. Egmont Arens, "House, Incorporated, New York," December 28, 1934, Folder "Housing—Pre-Fab, Sketches, Notes, Correspondence, Clippings," Box 19, Egmont Arens Papers.

37. "Design for Laving: Postwar Bathroom," *House Furnishing Review* (December 1944), Folder "Clippings about Egmont Arens," Box 46, Egmont Arens Papers.

38. Egmont Arens, "The Road-way Housing Plan," Folder "Roadway Housing Plan Presentation, 1935," Box 27, Egmont Arens Papers.

39. Letter from Henry Dreyfuss to Henry Luce, July 15, 1938, Folder "Time Inc. Client Solicitation," Box "Client Solicitation, Budd Co.—Time, Inc.," Henry Dreyfuss Papers. On Kiesler, see Beatriz Colomina, "The Psyche of Building: Frederick Kiesler's 'Space House,'" *Archis* 11 (November 1996): 70–80.

40. For more information about the connections between streamlining and eugenics, including the biological origins of theories of streamlining, see Christina Cogdell, *Eugenic Design: Streamlining America in the 1930s* (Philadelphia: University of Pennsylvania Press, 2004), chap. 2.

41. Caption for image "Early Transportation," Folder "Writings/Lecture Notes/Slide Captions," Box 57, Egmont Arens Papers.

42. Ellsworth Huntington, "The Future of Eugenics," Folder "Annual Meeting 1937," AES Papers.

43. Huntington, *Tomorrow's Children*, 27–29.

44. Egmont Arens, "Creative Evolution of the Printed Word, or Tempo in Typography" (address to the Eastern Arts Association, April 28, 1933), Folder "Writings," Box 51, Egmont Arens Papers.

45. *Ibid.*

46. Paul Hugon, "What Makes a Language Easy?" Box 58, Egmont Arens Papers.

47. Arens, "Creative Evolution of the Printed Word."

48. Editorial, "Is It True What They Say about You?" *Scholastic: The American High School Weekly* 29, no. 4 (1936), Folder "Clippings about Egmont Arens," Box 46 "Publicity/Programs," Egmont Arens Papers.

49. Mike Mills, "Herbert Bayer's Universal Type in Its Historical Context," in *The ABC's of ▲ ■ ●: The Bauhaus and Design Theory*, ed. Ellen Lupton and J. Abbott Miller (New York: Herb Lubalin Study Center of Design and Typography, Cooper Union for the Advancement of Science and Art, 1991), 38–49; Brochure for the "House of Tomorrow" in Donald Deskey Papers.

50. Letter from Egmont Arens to Dr. Janet Aiken, November 10, 1934, Folder "Language, Speed In, 1934-50," Box 58, and also letter from Aiken to Arens, 14 November 1934, Box 51, Egmont Arens Papers.

51. See "Scribe," Box 56, "Images and Captions for Lecture Illustrations," Egmont Arens Papers.

52. Huntington, *Tomorrow's Children*, 68.

53. Letter from Charles Davenport to Frederick Osborn, February 10, 1930, Folder "Frederick Osborn," AES Papers, and Folder "Eugenics Record Office—Eugenics Lectures," Charles B. Davenport Papers—Cold Spring Harbor Series, American Philosophical Society, Philadelphia, PA (hereafter cited as CBD-CSH Series). Information about X-rays speeding up mutations taken from a clipping from the *Knoxville (Tennessee) Sentinel*, September 25, 1927, Leon Whitney Scrapbook, AES Papers; the article mistakenly asserted the scientist was Thomas Hunt Morgan, not H. J. Muller.

54. Caption titled "Early Transportation," Box 57, "Writings/Lecture Notes/Slide Captions," Egmont Arens Papers.

55. Arens, "Creative Evolution of the Printed Word."

56. Folder "Fashion in Typography," Box 51, Egmont Arens Papers; also Walter Dorwin Teague, "The Growth and Scope of Industrial Design in the U.S.," *Journal of the Royal Society of Arts* 57 (July 1959): 640-51, Folder "Writings," Box 79, WDT Papers.

57. John Chamberlain, "Books of the Times," *New York Times*, June 21, 1935, Folder "Streamlining 1933-36," Box 59, Egmont Arens Papers.

58. Slide caption for "Champion Greyhound," Box 57, "Writings/Lecture Notes/Slide Captions," and H. Ledyard Towle, "Projecting Your Automobile into the Future," *Automotive Engineering Journal* 29, no. 1 (1931), Folder "Streamlining," Box 59, both in Egmont Arens Papers.

59. See "Sermon 35," Folder "Sermon Contest, 1926, #3," AES Papers; "End of the Year Report," section "Genetics of the Thoroughbred Horse," Folder "H. H. Laughlin, 1929, #22," CBD-CSH Series; Harry Laughlin, "The Value of Certain Measurements in Metabolism in Connection with Researches on the Genetics of the Thoroughbred Horse," Folder "H. H. Laughlin, 1930," CBD-CSH Series; "Science Yields to Luck on Turf," *New York World*, May 30, 1930, Leon Whitney Scrapbook, AES Papers; and earlier, Harvey Ernest Jordan, "Eugenics, Rearing of the Human Thoroughbred" in *Eugenics: Twelve University Lectures*, ed. Morton Aldrich (New York: Dodd, Mead, 1914). See also the exhibits list at the back of *A Decade of Progress in Eugenics: Scientific Papers of the Third International Congress of Eugenics, Held at American Museum of Natural History, New York, August 21-23, 1932* (Baltimore, MD: Williams and Wilkins, 1934), and "Genetics," *Time*, June 10, 1929, Leon Whitney Scrapbook, AES Papers.

60. Charles Davenport, "Lecture: Aims, Work, Results of the Eugenics Record Office," n.d. (but late 1920s to early 1930s), in folder of same title, File "C. B. Davenport," CBD Papers; letter from Laughlin to Albert Blakeslee, October 19, 1936, Folder "H. H. Laughlin, 1936," CBD-CSH Series. See also Folder "Kenneth C. MacArthur, Sermon 32, 1926," AES Papers.

61. Note the parallel of these "parasitic muscles" to the "autointoxication" of the constipated modern body; see James Whorton, "'Athlete's Heart': The Medical Debate over Athleticism, 1870–1920," in *Sport and Exercise Science: Essays in the History of Sports Medicine*, ed. Jack Berryman and Roberta Park (Urbana: University of Illinois Press, 1992), 114, parenthetical comment in original.

62. See "Notable Advances in 1934 in Airplane, Automobile and Railroad Development," *New York Times*, December 31, 1934, Folder "Streamlining—Airplanes"; "Few Weeks Set New Air, Land and Sea Records," *Chicago Daily News*, November 16, 1934, Folder "Streamlining, 1933–36"; "All Records Shattered!" *Aluminum Newsletter* (November 1934), Folder "Streamlining, 1933–36," all in Box 59, Egmont Arens Papers. In same box is a clipping of Malcolm Campbell's record attempt.

63. "King of the Plain, the Winner of the Title Every Time It Has Been Shown," Folder "Streamlining, 1933–36," Box 59, Egmont Arens Papers; clipping, *New York Herald Tribune*, October 9, 1927, Folder "Source Material: Animals, Dogs, Cats, Wild Birds," Box 3, WDT Papers.

64. On the "well-bred" women of *Vogue*, see Folder "Condé Nast, Promotional Materials, Miscellaneous, 1921–22," Box 80, Egmont Arens Papers, as well as numerous advertisements scattered through issues from the 1930s.

65. For example, see Edward McCartan's sculpture *Diana*, bronze, 1922, from *American Masters: Sculpture from Brookgreen Gardens*, Ex. Cat. (Austin, TX: Blanton Museum of Art, 1998), 45, and the photo of the sculptural centerpiece in the Grand Salon of the ship *L'Atlantique*, from "Abord de *L'Atlantique*," *Arts and Industry* (November 1931): 17, Folder "Steamships," Box 17, WDT Papers.

66. On Katherine Lane Weems, see *American Masters: Sculpture from Brookgreen Gardens*, 57.

67. Walter Dorwin Teague, Radiator Ornament for the Lincoln Zephyr Continental and Custom, on Microfilm roll 35–36, WDT Papers.

68. General Motors brochures "Aerodynamics and Streamlining," Box 49, and Charles Kettering, "Research—An Eye to the Future," Folder "Streamlining: Airplanes, 1932, 1935, n.d.," Box 59, Egmont Arens Papers; H. Ledyard Towle, 1931, Folder "Streamlining," Box 59, Egmont Arens Papers. On Loewy, see "Modern Living" in Business and Finance section of *Time*, October 31, 1949, Container 171 "Product Design and

Development Division, Speeches and Writings by Staff, 1953–57,” Raymond Loewy Papers, Library of Congress.

69. The slogan “Greyhound through the Fair” was coined by Teague and painted on the buses at the fair; see Microfilm roll 16–30, WDT Papers. The photo of the float of “America” as a greyhound was developed by Charles Dreyer and is found in Box 68, Egmont Arens Papers.

70. The 1933 Nazi compulsory sterilization law was based partly on California’s statute and partly on a “model” sterilization law published in 1929 by Harry Laughlin. Prior to Germany’s implementation of eugenic policies, the United States had been considered the leader in actualizing eugenic legislation. See Stefan Kühl, *The Nazi Connection: Eugenics, American Racism, and German National Socialism* (Oxford: Oxford University Press, 1994), 39.

71. On Sanger’s slogan, see Diane Paul, “Eugenics and the Left,” *Journal of the History of Ideas* 45 (1984): 569, n. 5; letter from W. E. D. Stokes to Anson Phelps Stokes Jr., February 7, 1921, and letter from Stokes to Charles Davenport, February 19, 1921, Folder “W. E. D. Stokes, 1920,” CBD-CSH Series.

72. Folders “Frederick Adams” and “A. Wakefield Slaten, Sermon 25,” AES Papers.

73. Walter Dorwin Teague, “Rightness Sells,” reprinted from *Advertising Arts*, n.c., and Teague, “Industrial Design and Its Effects on Sales” (talk to the Advertising Club of Los Angeles, n.d.), both in Folder “Writings,” Box 79, WDT Papers.