Eugenics in Interwar Iran

Cyrus Schayegh

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Abstract and Keywords

This article outlines the hygiene roots of eugenics and puériculture in Iran and points out the social and political reasons why both arose in the 1920s. It explains Iran's demographic problem, and lists the variety of measures intended to tackle it, and demonstrates eugenics' explicit role in, and implicit effects on, these measures. It further explains why modern middle-class physicians were the dominant socio-professional group responsible for the adaptation particularly of puériculture; and shows how Iran's semi-colonial position affected its adaptation of eugenics. This placed Iran at the margins of international networks of scientific research and, at the same time, turned France into its paramount source of biomedical education and social reformism.

Keywords: eugenics, puériculture, Iran, demographic problem, socio-professional group

THROUGHOUT the first half of the twentieth century, modern educated Iranians expressed great concern about a two-tiered demographic problem besetting their country. This problem's fundamental, and most worrying, dimension was quantitative: estimated at around 10–12 million, Iran's population was considered too small.[1] The reason was not—as in some European countries—fertility decline, but a high mortality rate. A related second dimension was qualitative: of those Iranians who did survive into adulthood, a certain section was not healthy enough—or, in the more strict sense of “quality,” purportedly suffered from a deficient hereditary disposition.[2]

The Iranian debate over eugenics was set in the larger framework of this double demographic concern. The importance of this anxiety notwithstanding, it is crucial, at this early point, to emphasize the limits of eugenics in Iran. The few Iranians proposing eugenic solutions identified themselves not as eugenicists, but as physicians with a social-reformist agenda. Moreover, there were in Iran no eugenic organizations or associations. What did exist, then, were mostly advisory texts, using eugenic ideas, a small number of newspaper articles and medical treatises directly referring to *puériculture* (a French term for positive eugenics) and to negative eugenics; and a much larger mass of texts (and a few laws) directed at the relation between health and demographics. In both categories,

positive eugenics was dominant (*puériculture* explicitly mentioned only occasionally); nonetheless, some negative eugenic solutions *were* recommended, and a few legally implemented in all but name in the late 1930s.

In this chapter, I will first outline the "hygiene" roots of eugenics and *puériculture* in Iran and point out the social and political reasons why both arose in the 1920s. I will explain Iran's demographic problem, and list the variety of measures intended to tackle it, and demonstrate eugenics' explicit role in, and implicit effects on, these (p. 450) measures. In a second, analytical section, I will explain why modern middle-class ("modernist") physicians were the dominant socio-professional group responsible for the adaptation particularly of *puériculture*; and show how Iran's semi-colonial position affected its adaptation of eugenics. This placed Iran at the margins of international networks of scientific research and, at the same time, turned France into its paramount source of bio-medical education and social reformism.

Historical Background, Political Contexts, and the Role of Hygiene

In Iran, eugenics was not seen to be separate from or in conflict with hygienic measures. This firm link had historical and logical reasons: eugenics was adopted decades after the onset of a modern discourse about, and certain measures taken in favor of, hygiene and sanitation; in Iran as elsewhere, dominant positive eugenics pursued the same basic objective as hygiene, the improvement and growth of a population deemed weak and small.

The first serious institutional step in introducing modern medicine and hygiene in Iran was the foundation, in 1851, of a school of higher education. The Dar ol-Fonun included a medical section soon dominated by French physicians (Tehran University, including a Medical Faculty, was founded in 1935). Moreover, throughout the second half of the nineteenth century, Western powers pressured Iran's Qajar dynasty (1794–1926) to introduce sanitary controls at their borders. Since the late nineteenth century, modern-educated Iranian physicians started to take particular interest in national and international hygiene and sanitary control.[3] Thus, in the first decade of the twentieth century, some medical dissertations discussed both fields.[4] Likewise, in the later nineteenth century, European and Iranian Dar ol-Fonun professors of modern medicine had started to produce medical treatises.[5]

Historians tend to agree that in Qajar Iran, attempts to improve hygiene (as well as other reforms) were intermittent and fell short of the neighboring Ottoman Empire's more sustained policies. Administratively, for instance, the Iranian Conseil de Santé, founded in 1870 by the French physician and Dar ol-Fonun professor Tholozan, convened only at moments of crisis and soon fell into disuse. It was resuscitated, with the support of Muzaffar al-Din Shah Qajar (r. 1896–1907), only in 1904, as Conseil Sanitaire (CS).

It was only after World War I that bio-medical sciences, medicine, and hygiene really consolidated in Iran and, as importantly, were fed into a new vision of national progress. Various political and social processes explain this change. The new Pahlavi dynasty, founded by Reza Shah (r. 1921/1926–1941), and an emerging modern middle class wished to distance themselves, both from the presumably ineffective Qajars and from the Constitutional Revolution (1905–1911). The modernists acknowledged (p. 451) this political revolution's success in establishing a parliament, but deplored that it "confirmed that the dominance of an ignorant majority is the source of Iranian backwardness."[6] In their view, this sorry state of affairs—peaking with enemy armies' invasion of neutral Iran during World War I—could be corrected only by science-based sociocultural reforms. Both the social and the political conditions for such reforms materialized following World War I, when the end of Russian and British meddling in Iran—part of the nineteenth-century Great Game in Central Asia—created a political vacuum. It was filled by Reza Shah's increasingly autocratic modernist state, which was staffed by modernists—that is, the very class clamouring for encompassing science-based sociocultural reforms. It was under these circumstances that in the 1920s, the older science of hygiene (*'ilm-i bihdasht*) was invigorated and paired up with eugenics as part of a larger attempt to modernize Iran through the application of bio-medical knowledge.[7]

Iran's Demographic Problem

In 1908, Mohammed Hassan Khan *Hakim-ad-Dowleh* argued in his Paris medical dissertation *Grossesse, accouchement, et puériculture en Perse* that

> Children's *puériculture* still needs to be introduced to Persia. Children nurture themselves, so to say. It is not that parents are not attached to their children. Far from it: especially the Persian woman adores her child. But she has no clue about the rules of hygiene and takes care of her child through a routine condemned by the facts: it is the certain cause of an enormous infant mortality depopulating our country. *Persia's population is not increasing because of that infant mortality.* The Persian woman is an excellent reproducer, fortunately does not know Malthusian or neo-Malthusian methods, and thus has many children. But this advantage is destroyed by the fact that fifty per cent—and more—of children die in their early years.[8]

What is interesting, at this juncture, is not so much that Mohammed Hassan Khan *Hakim-ad-Dowleh* trained at the Parisian clinique Baudelocque—workplace of Adolphe Pinard, who reintroduced the concept of *puériculture* in 1895—but the way he linked *puériculture* to hygiene, and both to demographic issues. His central concern—the neutralization of high birthrates by high mortality rates—remained at the core of demographic debate into the 1940s; infant mortality was a particular worry.[9] Iran's problem of underpopulation distinguished it from another Middle Eastern country, Egypt, already concerned about overpopulation in the interwar period.[10] Iranians, on the other hand, feared that their country's population was too small in relation to its vast surface and a grave threat to its

social and economic viability.[11] Authors regularly underlined the difference between demographic problems in Iran and most Western countries, that is, between high mortality in Iran and low fertility elsewhere. They commented on Malthus and on the absence of demographic (neo)-Malthusianism in Iran; on demographic reasons for Western colonialism, the West's (p. 452) low mortality but parallel falling birthrate, and European measures against depopulation; and, not least, on non-Western countries (for example, Japan's) success in decreasing mortality and increasing population.[12] Overall, they agreed that Iran's demographic question could only be solved through change. As Dr. Rizazadih Shifaq commented in 1933, "As long as a country's conditions of life and its bases of subsistence do not progress…the more the number of persons (alive) rises, the more distress, pain, and diseases rise, too."[13] In the eyes especially of the modern middle class, Iran needed better informed parents and a correction of the high mortality rate by various reforms.[14]

Hygienic and Eugenic Countermeasures to the Demographic Problem

It was here that eugenics and hygiene entered the frame, clustered around two measures. The measures of the first cluster guided women during and following pregnancy. Epitomizing hygiene and occasionally referring to *puériculture,* experts wedded self-monitoring (nutrition, breast-feeding, infant hygiene) with intervention by an external party (regular medical checkups by a physician) and put emphasis on demographic quantity as well as quality. The second cluster included medical examination of prostitutes and two negative eugenic measures: marriage health certificates and support for sterilization (sterilization, however, never became official policy). Both measures involved a high degree of coercion by state agencies and by the medical profession, and focused on demographic quality.

It should be noted that texts on sterilization particularly addressed negative eugenics more often than *puériculture,* which was mostly found in texts on, and for, child-bearing women. However, maternally focused measures were more important: they preceded the second cluster, were written about much more often, and had a considerably wider effect. In *this* sense, *puériculture* had a greater, though more implicit, effect in Iran than negative eugenics—a fact that made sense in the context of modernist Iranians' concern about small population.

Positive Eugenics: *Puériculture* and the Particular Role of Women

The credo regularly underlined by authors of medical texts was that women were in greater need of hygienic education and had more responsibility toward their body and mind than men. Highlighting women's duty to monitor their sexual organs and (p. 453) vis-

it a physician for regular checkups, they argued that a woman's womb and her sexual organs are “first, the child's initial nurture ground…and, second, have a total and general influence on women's health.”[15]

The demographic context of women's health becomes even more obvious in texts on pregnancy, which often featured in general texts on women's health.[16] On the other hand, articles on demography, stressing the role of hygiene in lowering the high mortality rate, often emphasized the particular responsibility of pregnant women for their health. Syphilis was cited as a major risk, especially for the fetus and for new-born children; pregnant women's poor constitution and bad social conditions were seen as a major factor for miscarriages and high mortality during childbirth; weak women were said to run high risks during pregnancy.[17] Obviously, such dangers called for prevention. Sports was one method to keep women fit; more important yet was correct nutrition and mental and physical rest:

> If the pregnant woman belongs to the working class, she should minimalize her work as much as possible, especially during the last two months of pregnancy, because a mother's work impedes a foetus' natural development, and the child who does see the light of the earth is weak and often dies soon…Public gatherings, theatres, cinema, and the like have a negative influence on the pregnant woman. For some (pregnant women) travel is harmful, causing miscarriages.[18]

The general view that pregnant women should abstain from work and agitation was tuned to a key aspect of Pinardian *puériculture, l'hérédité utérine.* Unlike “*l'hérédité conceptionelle*…transmitted by the parents” to the child, “*hérédité utérine*…[is] transmitted from the mother to the embryo.…That second form, which [Pinard] judged to be as important as the first one, can be significantly improved by the pregnant woman [being allowed to] rest.”[19] A number of Iranian physicians adhered to the thesis of *hérédité utérine* and Pinard's recommendations to pregnant women.[20]

Mohammed Hassan Khan *Hakim-ad-Dowleh*'s *Grossesse, accouchement, et puériculture en Perse* was an early text recommending Pinard. While stressing the importance of *puériculture*'s third, postnatal phase, he also addressed its pregnancy-related phase, and the effects of work as well. On the one side, he complained that “pregnancy is considered to be such a natural and banal physiological state that no [type of] hygiene is especially devoted to it. The Persian woman is treated like a woman from the early ages [of humankind].” On the other side, he held that the lack of “fatigue” provided the Persian woman “with good conditions for the normal development of her pregnancy.”[21] This assurance did not stand the test of time, however. In a 1940 medical thesis submitted at Tehran University, M.-H. Vahidi lamented that in Iran, most pregnant women were unable to rest.[22] In a newspaper series on health and demographics, Dr. Mirkhani made the same lament and gave pregnant women advice that explicitly referred to *puériculture.*[23]

Better care and knowledge of women during pregnancy was complemented by improved conditions during birth. Mohammed Hassan Khan *Hakim-ad-Dowleh* discussed the risks of birth in early-twentieth-century Iran,[24] and his recommendations were often reiterated in

later years. For him, the establishment of schools for (p. 454) midwives was “an overriding public and national interest,” particularly because birth was normally handled by women. In the late 1920s, the women's journal *Piyk-i sa‘adat-i nisvan* still deplored the shortage of modern midwives and reviled the traditional *qabilih,* lamenting that “after giving birth, many of our dear [women] have died due to the lack of a knowledgeable midwife.”[25] By 1935, however, *Danishkadih-yi qabiligi* (College for Midwifery, established in 1930) had become a vital part of Tehran's *Marizkhanih-yi nisvan* (Women's Hospital). Other institutions focusing on educating midwives and assisting women in childbirth complemented the picture.

Enhanced infant care constituted a third component of the cluster of measures directed at women. In general, it was argued that most mothers were insufficiently informed about the hygienic needs of their newborn and infant children.[26] Many authors sought to redress this situation. They paid special attention to nutrition, and particularly to the advantages and conditions of breast-feeding, severely criticized wet nurses, and went so far as to define a woman's refusal to breast-feed as “treason” to both the child and the nation.[27] Breast-feeding highlights the link between health care and demography, and the role of positive eugenics and *puériculture.* Thus, Dr. Mirkhani provided an explicit analysis of the third (post-natal) stage of *puériculture,* providing painstakingly detailed descriptions of the chemical composition of mother's milk, the vitamins it contained, its difference from cow's-milk, and the dangers of trusting a wet nurse to replace the mother.[28] In this view, postnatal *puériculture* was instrumental in Iran's demographic progress.

Negative Eugenics: Marriage Health Certificates and Sterilization

A second cluster of countermeasures to Iran's demographic problem included medical supervision of prostitutes and two negative eugenics measures: marriage health certificates and support for sterilization, which, although directly referring to negative eugenics, never became official policy. Crucial differences separated the first from the second cluster. Measures in the former were meant to boost the number of Iranians surviving pregnancy, birth, and childhood, and thus targeted women and the fetus/newborn after conception; the latter were meant to improve future children's genetic quality and thus concentrated on parents before conception.

Several debates informed the championing of negative eugenics. First, there was a scientific understanding that defective parental genetic setup was liable to damage a child. Venereal diseases and alcoholism were key factors understood to damage parents and injure their offspring. A second context was the awareness of European syphilophobia, arising around 1880, and the related measures—mainly mandatory pre-matrimonial health certificates—that were at least partly implemented, in some European countries, to combat venereal diseases. Recurrent (p. 455) remarks about Western ways of dealing with venereal diseases appear to indicate that Iranians’ perception of the problem in Iran was influenced by awareness of the apprehension it was causing in Europe.[29] A third debate

concerned the relative importance of social/environmental milieu versus genetic heredity in shaping the human being, as well as the link between different genetic theories and divergent eugenic approaches. The Iranian modernists—while generally underwriting the neo-Lamarckian thesis that milieu and heredity hold equal weight, and that the milieu's effects on a person's genetic structure are heritable to his or her offspring—in certain cases attributed greater weight to heredity. However, this approach was all but marginal. It appeared in only a small number of texts, and solely in the context of the application of genetics for eugenics; even there, it was never wholeheartedly endorsed. Mandatory marriage medical certificates were advocated in many different texts, including newspaper articles, medical treatises, and commentaries published in women's journals. An example of the last is the story, by Mrs. Mihran, a contributor to the Tehrani weekly, *Ittila'at-i hafti-gi*, of her marriage:

> Since [our marriage],...we knew how grave and responsible a duty the establishment of a family is.…We used to talk together about…(our future) children…[and] both of us, without the slightest excuse or evasion, visited the physician, asking him to subject us to a complete examination, and to assure us about our health.[30]

The women's journal *'Alam-i nisvan* had been calling for medical certification since the early 1920s.[31] Women's organizations helped to promote certificates, and some women's societies lobbied for such laws in the highest political circles.[32] While the issue was raised during the preparation of a new marriage law in the mid-1930s, respective endeavors bore fruit only in October 1938, with the introduction of a law ordering bridegrooms and brides to obtain a certificate of wellness from a state-licensed physician.[33]

Physicians themselves advanced the idea of a pre-marital health check. Some stressed the danger of hereditary diseases; others referred to European countries, where mandatory or voluntary pre-marital health checks headed the list of measures suggested or adopted to impede the further spread of venereal diseases and to advance the "quality" of the population.[34] Often, they emphasized individual responsibility in obtaining certificates. They called on spouses to seek examination from a trustworthy physician, and held that a syphilitic person could marry only if he had enjoyed medical treatment for at least 18 months and had thereafter not suffered from a new attack for another 18 months. Physicians called on heads of family to obtain health certificates before the wedding and to allow physicians to check their family's younger members at least twice a year. They even appealed to men's "honor," asking them to defer marriage as long as they suffered from venereal diseases.[35]

In the late 1930s, newspaper articles on marriage health certificates were published with increasing frequency, mostly in connection with the October 1938 law.[36] Authors emphasized the role of health certificates in preserving a healthy individual and shaping a strong nation and race. The underlying claim held that individuals' strength or weakness directly influenced the nation.[37] However, measures to fortify an (p. 456) individual were seen to benefit both individuals and their offspring—a point that occasionally escalated into open attacks on syphilitic children and the need to prevent syphilitic parents from

procreating.[38] Another argument highlighted the state's role in creating the legislative and administrative conditions for the introduction of mandatory marriage health certificates,[39] but at the same time continued to underline the importance of the individual's cooperation.[40] Authors also called on sick parents to abstain from procreating until they had been successfully medically treated. In this context, “eugenic” abortion was also discussed[41] but did not become law.

While texts rarely recommended the introduction of sterilization to Iran, authors did express support for the sterilization policies adopted in some Western countries. In 1921, for example, ‘Ali Dashti advocated the idea of “active euthanasia” (by which he probably meant sterilization, since euthanasia in the sense of killing people considered to procreate “deficient” children and thereby damage society was not discussed in the West in the early 1920s). He argued that euthanasia is “an ethical theory which is dictated by the principle of the common good: after all, ‘will the tuberculous, the weak and infirm, the hysterical people, and those suffering from anaemia have any other effect on society but to damage and weaken further generations and to impair the race?’ ”[42]

Other authors referred to sterilization in the context of mostly English and (since 1933 radicalized) German negative eugenics. Although a few mentioned that sterilization was practiced in some American states and in Sweden,[43] it was Nazi Germany that was foregrounded. In July 1933, a new German law had laid the legal grounds for radical negative eugenic actions, inter alia lifting Weimar Germany's prohibition of compulsory sterilization, now managed by medical committees.[44] One Iranian author highlighted the “negative” eugenic nature of this new law preventing mentally retarded and so-called “natural” criminals from procreating in order to improve the population's quality, and underlined their difference from the “positive” eugenic Weimar laws that had encouraged population growth. The author then related the idea and practice of sterilization to the development and aims of negative eugenics and concluded that “there evidently is no doubt that this movement, based on a reform of social life, is crucial [and] will, over time, profoundly affect [humankind].”[45] However, not everyone was confident about the glories of a eugenically organized society. One physician who theoretically supported abortion on negative eugenic indications ended up rejecting it because genetics was not yet able to provide reliable information on the “quality” of a fetus.[46]

Eugenics and Social Class

Two decades ago, Mark Adams drew a comparative map “uncovering the diversity of historical eugenics.…In the decades between 1890 and 1930, eugenics movements developed in more than thirty countries.…In some places, eugenics was dominated (p. 457) by experimental biologists, in others by animal breeders, physicians, pediatricians, anthropologists, demographers, or public health officials.”[47] In Iran, physicians—an influential profession in the modern middle class, emerging since around the 1920s—were the main advocates of eugenics. This was unsurprising given their generally important role, as pri-

vate individuals and often as state functionaries, in using bio-medical knowledge for social reforms.

Physicians discussed positive eugenics not only in professional texts like Mohammed Hassan Khan *Hakim-ad-Dowleh*'s *Grossesse, accouchement, et puériculture en Perse.* They did so also in newspapers. Texts on positive eugenics like Mirkhani's series “The Need of Healthy People for Population Increase” had a crucial element in common with articles on negative eugenics (and, for that matter, hygiene): they evinced a clear and public bias by Iran's modern middle class against the country's lower classes.

Indeed, the debate about negative and positive eugenics as well as hygiene had a larger context: whether explicitly (sterilization, *puériculture*) or implicitly (marriage medical certificates), it formed part of the modernists' mission, together with the state, to educate the lower social strata about their health. This undertaking involved crucial questions about what “the people” (*tudih*) should know. Although health education progressed in the interwar period, it had clear limits. Reaching out to and educating the urban and rural lower classes in a short time was no easy task: distances were large, finances short, manpower limited, and political will weak. While municipalities expanded their networks of free medical dispensaries and hospitals from the 1920s, Reza Shah had priorities other than health, especially the armed forces. As for the modern middle class, extremely few physicians wished to practice outside the larger cities or indeed in lower-class districts. Modernist authors often argued that although the lower social strata should be better informed about questions of health, they needed only basic practice-oriented advice to allow them to correct their habits. Detailed knowledge and the theoretical foundations of modern scientific health had to remain the privilege of the modern middle class—key to their cultural distinction, access to professional markets, and social status: “[O]ne must make the *bases of hygiene* understandable to the people.”[48]

Conclusion

Since the nineteenth century, the presence of European educational, scientific, and medical specialists in Iran was both more limited and less exploitative than in fully colonized countries. Iran's semi-colonial position saved it from the kind of institutional, administrative, political, and budgetary control that European powers exercised in their colonies; at the same time, however, due to that position, Iran could not play an active role in unequal but nonetheless integrated metropolitan-colonial networks of scientific exchange.

(p. 458) Eugenics in Iran reflected this basic fact: internal debates never formed an active part in international discussions about eugenics. And yet, Mohammed Hassan Khan's medical training with Adolphe Pinard, as well as the references to European and American eugenics in medical and popular texts exemplify that Iranians were aware of developments in the world of European science, in “applied” sciences like eugenics, and in related models of social reform.

The acculturation of French *puériculture* (rather than, say, full-fledged negative eugenics) was conditioned partly by the dominant role of French medicine since the mid-nineteenth century, both in Iran in the form of French physicians, and in France in the form of Iranian students. But *puériculture* did not "reach" Iran as part of a mechanical process of diffusionism:[49] it was appropriated because its underlying logic—the need for population growth—suited Iran's particular demographic problems. In this sense, then, the story of eugenics in Iran, although minor compared to most countries, illustrates how even at the fringe of international scientific and social-reformist networks, (semi)-colonial modernist elites were able to make certain choices about the nature and composition of their specific agendas of modernization.

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Notes:

(1.) In the 1950s, population *increase* became Iran's principal demographic worry.

(2.) For example see Muhammad-ʻAli Tutya, "Maram-i ma" [Our platform], *Sihhat-nama-yi Iran* 1, no. 1 (March 1933): 2–3.

(3.) Amir Afkhami, *Iran in the Age of Epidemics: Nationalism and the Struggle for Public Health, 1889–1926* (PhD diss., Yale University, 2003); Firoozeh Kashani-Sabet, "Hallmarks of Humanism: Hygiene and Love of Homeland in Qajar Iran," *American Historical Review* 105, no. 4 (2000): 1171–1203.

(4.) Ardachir Khan Nazare-Aga, *Contribution à l'étude des conférences sanitaires internationales dans leurs rapports avec la prophylaxie des maladies pestilentielles en Perse* (Paris: Vigot Frères, 1903); Ali Khan, *Choléra en Perse, Prophylaxie et traitement* (Paris: Imprimérie de la Faculté de médecine, 1908); Mirza Abbas Khan Alam ol-Molk, *Taoun (Peste). Étude sur la peste en Perse* (Paris: Imprimérie des Facultés, 1908).

(5.) Hormoz Ebrahimnejad, *Medicine, Public Health, and the Qajar State: Patterns of Medical Modernization in Nineteenth-Century Iran* (Leiden: Brill, 2004), especially about the complex relationship between traditional and modern medicine. For references to medical treatises, see Mariam Ekhtiar, *The Dar ol-Fonun: Educational Reform and Cultural Development in Qajar Iran* (PhD diss., New York University, 1994) and Willem Floor, *Public Health in Qajar Iran* (Washington, DC: Mage, 2004).

(6.) Mushfiq Kazimi, "Inqilab-i ijtima'i," *Farangistan* 1, no. 1 (1924): 6.

(7.) Cyrus Schayegh, *Who Is Knowledgeable Is Strong: Science, Class, and the Formation of Modern Iranian Society, 1900–1950* (Berkeley, CA: University of California Press, 2009).

(8.) Mohammed Hassan Khan *Hakim-ad-Dowleh, Grossesse, accouchement, et puériculture en Perse* (Paris: Imprimérie des facultés, 1908), 55 ["La puériculture de l'enfant est à créer en Perse; les enfants s'élèvent pour ainsi dire tout seuls; ce n'est pas que les parents ne soient pas attachés à leur enfants, loin de là; la femme persane en particulier adore son enfant, mais elle ignore les règles d'hygiène, et soigne son enfant d'après une routine que les faits condamnent, parce qu'elle est cause certainement de l'énorme mortalité infantile qui dépeuple notre pays. *La Perse n'augmente pas de population à cause de cette mortalité infantile*; la femme persane est une excellente reproductrice, elle ignore heureusement les méthodes malthusiennes ou néo-malthusiennes; elle a donc de nombreux enfants; mais cet avantage est détruit par ce fait que 50% des enfants et plus meurent dans la première enfance." My translation; italics in original].

(9.) For a paradigmatic statement about the importance of infant mortality for the general demographic predicament, see S. Anvari, *Marg-i atfal dar Iran va rahha-yi jilugiri-yi an [Infant mortality in Iran and methods for its prevention]* (PhD diss., Tehran University, 1937), 7.

(10.) Omnia El-Shakry, *The Great Social Laboratory: Subjects of Knowledge in Colonial and Postcolonial Egypt* (Stanford, CA: Stanford University Press, 2007).

(11.) "Ayandih-i Tehran" [Tehran's future], *Ayandih* 1, no. 6 (125): 378–79; A. Malekpur, *Die Wirtschaftsverfassung Irans* (PhD diss., Universität Berlin, 1935), 100, 104; A.-H. Bahriman, *Vasa'il-i afsaiyish-i nufus dar Iran [Methods for population increase in Iran]* (PhD diss., Tehran University, 1937/38), 24, 50; "Himayat-i kudakan" [Protecting the children], *Ittila'at*, February 16, 1935.

(12.) “Taqlil-i nufus” [Population decline], *Ittilaʻat*, September 2, 1937; Dr. Rizazadih Shifaq, “Mas'alih-yi izdiyad va sihhat-i nufus,” [The problem of the population's increase and health] *Sihhat-nama-yi Iran* 1, no. 3 (1933–1934): 56–58; “Izdiyad-i nufus-i Zhapun” [The increase of Japan's population], *Ittilaʻat*, February 21, 1934; Dr. Mirkhani, “Luzum-i afrad-i salim bara-yi taksir-i jam'iyat” [The need for healthy people for population increase], *Ittilaʻat*, December 25, 1937; “Siyasat-i taqviyat va taksir-i nufus” [The politics of population reinforcement and increase], *ʻAsr-i iqtisad* year 2, no. 132 (1944): 3.

(13.) Shifaq, “Mas'alih,” 54–55.

(14.) M. Chiluians, *Siqt-i mukarrar dar Iran* [Recurring abortion in Iran] (PhD diss., Tehran University, 1946), 1.

(15.) “Rahnama-yi sihhi bara-yi banuvan” [Health guide for ladies], *Ittilaʻat*, February 6, 1936; cf. the feminist Sadiqih Dawlatabadi, “Jahan-i zanan” [Women's world], *Iranshahr* 2, no. 1 (1923): 18–19.

(16.) Mrs. Tarbiyat, “Khatabih-yi Khanum-i Tarbiyat” [A speech by Mrs. Tarbiyat], in *Khatabihha-yi kanun-i banuvan dar sal-e 1314s* [Speeches at the Women's Society in the year 1935/36] (Tehran: Majles, 1936), 43.

(17.) Dr. A. Aʻlam, “Bihdasht-i khanivadigi” [Family hygiene], *Ittilaʻat*, August 26, 1940; M. Kazim-Khatami, *Bihdasht-i ijtimaʻi-yi kudakan dar bachegi-yi nakhust* [The social hygiene of children during the first phase of infancy] (PhD diss., Tehran University, 1937), 18–21.

(18.) “Nasaih-i sihhi bih nisvan-i hamilih” [Health advice for pregnant women], *Salnamih-yi Pars* 6 (1931–1932): 108.

(19.) Anne Carol, *Histoire de l'eugénisme en France: Les médecins et la procréation, XIX-XX siècles* (Paris: Seuil, 1995), 47–48.

(20.) Bahriman, “Vasa'il,” 43; M.-H. Vahidi, *Ravish-i ʻamali-sakhtan-i parvarish-i kudakan dar Iran* [A method for the practical realization of puériculture in Iran (French title: *La puériculture en Iran)*] (PhD diss., Tehran University, 1940), 6; H. Basiqi, *Bihdasht-i nuzad [Hygiene of the newborn]* (PhD diss., Tehran University, 1945), 17; Dr. Mirkhani, “Luzum,” *Ittilaʻat*, December 22, 1937.

(21.) Mohammed Hassan Khan, *Grossesse*, 37; for Pinard, see idem, 96.

(22.) Vahidi, *Ravish*, 6–7; cf. Basiqi, *Bihdasht*, 16–17, 34.

(23.) Mirkhani, “Luzum,” *Ittilaʻat*, December 20, 22, 1937.

(24.) Mohammed Hassan Khan, *Grossesse*, chaps. 3–5.

(25.) “Qismat-i hifz al-sihhih. Hayat-i nisvan” [Health section. Women's life], *Piyk-i saʻadat-i nisvan* 1, no. 2 (1927/1928): 44.

(26.) Vahidi, *Ravish*, 53–57, 59; “Rahha-yi ʻamali bara-yi bihbud-i nesl-i kishvar va jilugiri az talafat-i kudakan” [Practical measures for the improvement of the race and the prevention of children's mortality], *Jahan-i pizishki* 2, no. 2 (1948): 8–9.

(27.) A. Quli-ala, *Shir-dadan dar Iran va taʻsirat-i an [Breastfeeding in Iran and its effects]* (PhD diss., Tehran University, 1936), 3. Cf. Bahriman, *Vasa'il*, 45; Kazim-Khatami, *Bihdasht*, 39–59.

(28.) Dr. Mirkhani, “Luzum.” His argument [about digestion and nutrition as the main causes of post-natal infant death can be consulted in the text published in *Ittilaʻat*, December 23, 1937. The articles about *puériculture* after birth begin at that date, too.

(29.) “Muzu’-i amraz-i tanasuli va tariqih-yi jilugiri-yi an” [The issue of venereal disease and their prevention], *Ittilaʻat*, October 19, 1934; Dr. Puya, “Marz-i sifilis,” [Syphilis] *Ittila'at*, October 20, 1931.

(30.) Munir Mihran, “Chira farzandan-i man ziba hastand?” [Why are my children beautiful?] *Ittilaʻat-i haftigi*, no. 44, January 16, 1941.

(31.) Jasemin K. Rostam-Kolayi, *The Women's Press, Modern Education, and the State in Early Twentieth-Century Iran* (PhD. diss., University of California, 2000), 230.

(32.) Masturih Afshar, “Sihhat-i zan va atfal” [Women's and children's health], *ʻAlam-i nisvan* 12, no. 4 (1932): 198; “Tandurusti va zanashu'i” [Health and marriage], *Mihrigan* 1, no. 13 (1935): 14.

(33.) Also, a law for the prevention and fight of infectious diseases, passed in June 1941, included the compulsory treatment of venereal diseases, free medication available to needy patients, punishment for spreading venereal diseases, and periodic inspections of brothels.

(34.) Dr. ʻA. Rashti, “Tavarus dar amraz va ta'sir-i an dar tavalud va tanasul” [(The impact of) heredity in diseases, and its influence on birth (rates) and reproduction], *Darman* 1, no. 1 (1936): 63–64; H. Reza'i, *Bimariha-yi maghz va ravan* [Cerebral and mental diseases], 3 vols. (Tehran: Taban, 1944), 1: 23.

(35.) Dr. ʻAli Khan Mustashfi, “Sifilis aya muʻalijih mishavad?” [Is there a cure for syphilis?], *Sihhat-nama-yi Iran* 1, no. 4 (1933): 102; Dr. Puya, “Kesani kih khud-ra az asib-i sifilis masun midanand?” [People who believe that they are immune against the damages of syphilis], *Ittilaʻat*, December 24, 1931. Cf. M.-ʻA. Tutya, *Amraz-i zuhravi [Venereal diseases]*, (Tehran: Fardin, 1931/32), 140–41; E. Nuzari, *Usul-i muʻalijat-i sifilis, va tariq-e jilugiri az sariyat-i an* [The bases of the treatment of syphilis, and methods for the prevention of its transmission], (Tehran: Ittihadiyih, 1931), 20–22.

(36.) Dr. Najat, “Guvahinamih-yi tandurusti” [Health certificate], *Ittilaʻat*, December 1, 1938); Dr. ʻAbbas Adham *Aʻlam al-Mulk*, “Daftar-i sihhat, ya namih-yi tandurusti” [A (personal) health register], *Ittilaʻat*, 9 April 1936.

(37.) “Nisl-i salim” [A healthy progeny], *Ittilaʻat*, October 10, 1938; “Nizhad-i qavi va barumand” [A strong and fertile race], *Ittilaʻat*, October 12, 1938.

(38.) “Guvahinamih-yi tandurusti bara-yi zanashu'i” [A health certificate for marriage], *Ittila'at*, October 11, 1938.

(39.) M. [Probably Ittilaʻat's editor Masʻudi], “Tasdiq-sihhat-i mazaj” [Health certificate], *Ittilaʻat*, August 3, 1931; “Nisl-e salim”; “Nizhad-i qavi va barumand”; Najat, “Guvahinamih-yi tandurusti.”

(40.) For state action, see Tutya, “Pishnihadat-i ma” [Our recommendations], *Sihhat-nama-yi Iran* 1, no. 6 (1933); for individual behavior, see Najat, “Guvahinamih-yi tandurusti”; “Dar piramun-i guvahinamih-yi tandurusti” [Concerning the health certificate], *Ittilaʻat*, October 15, 1938.

(41.) Dr. Gh. Musaddiq, “Mavarid-i javaz-i asqat-i jinin, az lihaz-i qaza'i, ijtimaʻi, mazhabi” [The issue(s) of the permission of abortions from legal, social, and religious points of view], *Darman* 2, no. 2 (1937): 53. Cf. Dr. Mustashfi, “Sifilis,” 102; “Tandurusti va zanashu'i” [Health and marriage], *Mihrigan* 1, no. 13 (1935/36): 14; Dr. Mirkhani, “Luzum,” *Ittilaʻat*, December 22, 1937.

(42.) Jutta Knörzer, *Ali Dashti's Prison Days: Life under Reza Shah* (Costa Mesa: Mazda, 1994), 78, citing the fifth edition of *Ayyam-i mahbas*, 108.

(43.) “ʻAqim-kardan-i zan va mard” [The sterilization of women and men], *Ittilaʻat*, September 9, 1933; “ʻAqim-kardan-i maraza va mujrimin” [The sterilization of sick people and criminals], *Ittilaʻat*, 2 September 1933. With regard to the United States, see also Knörzer, *Ali Dashti*, 78, showing how Dashti argued that in the name of social welfare, certain materialist philosophers have advocated the euthanasia of patients of contagious or congenital diseases, and that for this reason, some U.S. states require a medical examination prior to marriage.

(44.) “ʻAqim-kardan-i maraza va mujrimin”; Az majallih-yi Spectre [From the magazine Spectre], “Taʻqim va qatʼ-i nisl-kardan-i maraza” [Sterilization or the interruption of sick person's procreation], *Ittilaʻat*, January 1, 1934.

(45.) “ʻAqim-kardan-i maraza va mujrimin.”

(46.) Musaddiq, “Mavarid,” 53; cf. “ʻAqim-kardan-i mard va zan.”

(47.) Mark Adams, “Towards a comparative history of eugenics,” in *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia*, ed. Mark B. Adams (New York: Oxford University Press, 1990), 217, 215.

(48.) “Taʻlim-i bihdasht bih mardum” [Educating the people about hygiene], *Ittilaʻat*, June 2, 1940.

(49.) George Basalla, “The Spread of Western Science,” *Science* 156 (1967): 611–622.

Cyrus Schayegh

Cyrus Schayegh was at the American University of Beirut, 2005–2008, and is now Assistant Professor at Princeton University, where he teaches modern Middle Eastern history. His recent book, *Who Is Knowledgeable Is Strong: Science, Class, and the Formation of Modern Iranian Society, 1900–1950* (2009), explores modern Iranian uses of a variety of bio-medical sciences. His current project reexamines the post-Ottoman, interwar Levant as a region formed by the interplay between new states and cross-border movements of goods and people.