The Benefits and Costs of Diversity: Lessons from Economic History[1]

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Introduction

Diversity is widely seen today as a desirable objective. Universities have "diversity officers" whose job it is to increase diversity and encourage the inclusion of under-represented minorities. By *diversity* I mean outcomes of economic and social processes. A diverse society is composed of coherent groups that differ from one another in an important and observable characteristic shared by members of the group. Hence the aggregate has a higher variance in that dimension than a non-diverse society. Diversity is traditionally measured by a dispersion metric such as the Herfindahl index. Many traits, such as being Jewish, are interchangeable with "identity," which is recognized by both those who have the traits and thus belong to the group and by "others," who do not.[2] The pertinent question of diversity is how are different sub-populations sharing recognizable different traits represented across the economy and what are their relative socio-economic status, political power, etc?

There are many traits that can be deployed to define diversity. These fall, roughly speaking, into two classes: those that are hard-wired in people such as race, ethnic origin, and other phenotypical features, and those that are acquired culturally during socialization, such as language, religion, ethical values, and ideology. The latter class of course means that the feature is a matter of choice, although the default option is to mimic one's parents. The two classes create different sources of resentment of "otherness." Traits that are a matter of choice may lead to resentment among the majority group precisely because a minority could have conformed to the traits of the majority but chose not to. Hardwired traits may breed resentment when they tap into much deeper sources of homophily and xenophobia, fear of the unfamiliar and so on. For the historian an attractive dimension of diversity is religion, to which I will return below.

As noted, in many organizations in the industrialized countries there is a sense that diversity is desirable, and policies to enhance it are in force. These policies have two sources of support, one is based on ethics, the other is on efficiency. The former justification is that low diversity is the result of sins of the past such as colonialism and racism involving systemic discrimination against some groups that are now under-represented. Hence fairness and justice demand that these be addressed.

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[2]The "traits" that actually define the identity of individuals often work through compound traits, e.g., French Canadians or Orthodox Jews, thus created nested traits in which diversity can be defined over groups and subgroups.

A different idea is that low-diversity, whatever its causes, is inefficient. It is argued that higher diversity improves economic performance and stimulates creativity and growth by drawing on a larger pool of cultural material and a more diverse reservoir of experiences and attitudes, and thus increases the potential for innovation and effective management and cooperation.[3]

The enthusiasm of the supporters of diversity's positive efficiency effects notwithstanding, there are clearly *both* benefits and costs to greater diversity, and their net impact on economic performance and progress vary over time and across societies and industries. The literature on the topic is large, and in the essay below I will only be able to deal with selected aspects of it, as exemplified by historical case studies. Before doing so, it is important to define carefully the differences between the three key concepts of diversity, tolerance, and pluralism, and take a closer look at what economic analysis has to add to our understanding of these three concepts. I will then argue how economic history sheds light on the complexities of the economic effects of diversity.

The basic answer to the question whether the economic effects of diversity are positive or negative can be summed up here. My answer is a variant on what is known in the history of technology as "Kranzberg's first Law" — diversity is neither good nor bad, nor is it neutral (Krantzberg, 1986, p. 454).[4] What this statement means is that the effect of diversity can be substantial, but its net impact on economic efficiency and growth depends on the institutions of society. Much like the effects of innovation and natural resources, it can be either a curse or a blessing.

Some Definitions

Terms like "diversity," "tolerance, and "pluralism" are used frequently in this literature and need some careful definitions if we are to unpack the effects of diversity.

Tolerance here will be defined as a pure matter of preferences, that is, culture. One natural way of defining it is by asking how much an individual objects to what "others" believe, behave, or

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[3]The canonical sources for this argument in economics are Page (2007) and Florida, (2012).

[4]Kranzberg's original statement in a remarkable presidential address pertained to technology, of course. In his own words, the same technology can have different effects depending on the context and environment in which it is introduced. Another remarkable law is his fifth law that "All history is relevant but the history of technology is the most relevant" (p. 553) — a statement that may not be applicable to diversity with the same force.

what they look like. What matters here, then, is how individuals regard and treat individuals that have a particular trait that places them into a different group and thus can be seen as "others". In the limit, perfect tolerance means we are utterly indifferent to what others believe as long as they do not act on it in a way that harms others.

A more formal representation of tolerance would be something like the following. Assume an individual has a utility function as follows:

$$U_i = f(\boldsymbol{X}.....\lambda C_j, \mu H_j)$$

Where U_i is the utility of individual i, C_j are the cultural beliefs of individual j and H_j are other attributes of individual j may care about such as his race, language, dress, phenotype and so on. λ and μ are reverse "measures of indifference". If $\lambda < 0$, i may disapprove of j's religion ("heresy" or "infidels"), her ideology, or other cultural beliefs. A high absolute value of λ means "intolerance". If $\mu < 0$, it could be defined as a measure of "racism" or "xenophobia."

Tolerance thus measures a willingness to "let a hundred flowers bloom." It is also a (reverse) measure of homophily, the degree to which we have a liking for others who resemble us in their religion, language, ethnic background, phenotype and so on. Given that homophily (and hence an aversion of "others") appears to be hardwired into our preferences (Fu, Nowak, Christakis, and Fowler, 2012), society has to set up institutions that constrain behavior to act on those aversions. Indeed, it may well be the case that, as one eminent psychologist has said, that "The evolution of cooperation requires out-group hatred. Which is really sad."[5] While institutional constraints may not necessarily make people more tolerant (that is, change their preferences favoring their own group),

[5]Nicholas Christakis, as cited in the *Washington Post*, Jan. 20, 2024. It might be thought that the evolutionary justification for these preferences is that traits promoting in-group cooperation and out-group hostility could be favored by natural selection in models of group-selection. It is also possible that homophily is a rational response to the risk of unreciprocated cooperation. If acts of cooperation and generosity are contingent on the other person being a member of the group this can increase the odds that he or she will eventually reciprocate (Christakis, 2019, p. 263.

it will affect their behavior.[6] The existence of feedback from institutions to preferences, however, implies that the preferences may eventually change and become more tolerant. If individuals grow up in a society that has strong pluralist institutions, they may internalize those norms in their preferences and become more tolerant. Optimally "good" pluralist institutions are the ones that permit people to hold and express idiosyncratic beliefs and expression, but prevent actions conditional on those beliefs if they have negative spillover effects.

The *institutions* that prevent people from realizing their homophilic or other intolerant preferences are what I what I mean by *pluralism*.[7] Pluralist institutions can be seen as "civilizing agents" --- they set the rules that prevent intolerant people from acting on their aversions and instincts and overcome their "natural" proclivity to be suspicious of others who look, behave, think, or talk differently. Even countries with "good" institutions are subject to the consequences of homophily and intolerance. Pluralist institutions, by restraining individual behavior driven by intolerance can attain the economic advantages of diversity while minimizing the costs. They involve an implicit recognition that, despite disagreements, the different groups share a common denominator that transcends these differences (Scanlon, 2003, p. 193). Indeed, a prime candidate for such a common denominator would be the pluralist institutions themselves. Yet if pluralism is to be taken to its full logical conclusion, it would include the right to challenge the accepted rules of pluralism itself.

The ambiguities of pluralist institutions must be recognized. The right to free speech, the most obvious of all pluralist institutions, has to be limited somewhere if it leads in high probability to actions that involve real costs such as violence. How high does that probability have to be to justify a limit on what one can say? Moreover, while pluralist institutions are expected to be welfare

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[6]"Tolerance" will thus have to be distinguished from "toleration," which is often used to describe both the *belief* in religious freedom *and* its practice, and thus comprises both cultural and institutional elements. Cf. Zagorin, 2003, p. 7.

[7]The important distinction between *culture*, that is, preferences and *institutions*, that is, the rules, norms, and incentives that society imposes on individuals to constrain their behavior, are essential here. Without explicitly making the distinction, the difference between the two is the logical foundation of the analysis provided by Scanlon (2003). Intolerance is defined by Scanlon as claiming a special place for one's own values (which is clearly "culture") *and* the right to suppress other ways of living (which would require institutions). The former form of intolerance should *itself* be protected by pluralism, the latter most definitely not.

enhancing in general, we cannot say for sure that they are inevitably strictly Pareto-improving, since those with strong homophilic preferences may be made unhappy by laws and arrangements that allow minorities to exercise their rights. This may seem a pedantic point if exercising such rights involves no externalities, but when, for instance, the right of free speech permits offensive and hateful language, a welfare cost may be involved. Thus one can make the argument that holocaust-denial could be made illegal (as it is in Germany and Austria) or explicitly espousing Eugenics and racism on the basis of social welfare.[8] In some cases, the opposing rights of two groups both relying on pluralism can lead to what Scanlon calls "gridlock," yet as he recognizes, pluralist institutions, while imperfect, are a second best.

Pluralist institutions, unlike tolerance, are not individual choices and are taken parametrically given by each individual. Examples include universal franchise, making minority languages official, complete freedom of worship and religion, and outlawing discriminatory practices such as redlining, higher education quotas, and similar rules that benefit specific groups at the expense of others.[9] Moreover, pluralist institutions rule out the use of any form of violence and coercion the market for ideas. Competition between ideologies and religion is natural and probably salutary, but like all forms of competition, the exact margins where competition is permissible are carefully described and means other than peaceful persuasion are proscribed. The exact connection and interaction between tolerance (that is, culture) and pluralism (that is, institutions) is always complicated and the two co-evolve in subtle and complicated ways, as culture and institutions are apt to do (Alesina and Giuliano, 2015). Obviously, if an overwhelming majority of society is highly tolerant, this is likely to lead to pluralist institutions. But at times fanatically intolerant minorities that acquire power (for possibly unrelated reasons) may impose a highly anti-pluralist set of institutions, as happened in Germany in the 1930s.

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[8]Another ambiguity arises when an organization is established among people sharing a particular set of belief, such as a political party or a church. If some member then disagrees with the main tenet of the organization, pluralism would not be violated if this member were excluded — as opposed to a case in which she/he were excluded for some irrelevant trait. However, what is true for a specific organization is *not* true for society as a whole. Even those opposed to pluralism itself would still have their speech protected by it (Scanlon, 2003, pp. 194-95).

[9]A possible exception is the use of quotas and other rules to compensate groups for past discrimination that have led to a long-run uneven playing field, such as affirmative action. Yet in a purely pluralist society, such compensating practices would be phased out eventually.

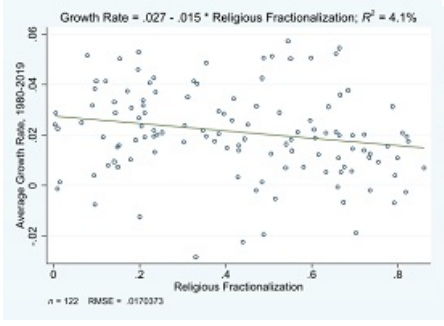
Contemporary Evidence

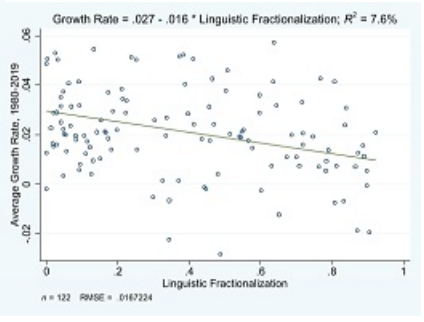
Social scientists and economists have spent the past quarter century confronting the question of whether diversity is good for economic performance and growth, but a survey of the literature reveals that there are no simple one-line answers. One issue with isolating the effect of diversity on economic performance is simply identification. The framework outlined above suggests why: pluralist institutions tend to support the presence of successful minorities who may contrib ute to economic success, and the kind of syncretic cultural effects that augment the pool of productive ideas. But pluralist institutions tend to be correlated with other institutions that foster creativity and open-ness to novelty and efficiency, and the correlations might thus be spurious.[10]

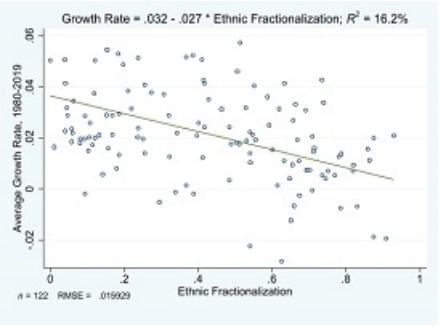
The evidence of contemporary economies can be conveniently subdivided into macro-economic and microeconomic evidence.[11] The macro evidence is largely based on cross-country or panel datasets and uses various measures of fractionalization as the proxy for diversity. Alesina and LaFerrara (2005) produce some useful estimates for religious, linguistic and ethnic fractionalization and its input on GDP growth rates (or levels). Below I reproduce these figures,extended to 2019. They clearly show that the raw correlations are weak, and adding further controls (not reported) does nothing to improve them. All three slopes are negative, however, which

[10]A good example is the experiment of the young Soviet Union with a policy of greater tolerance for minority cultures known as *korenizatsiya* in which non-Russian minorities were allowed to a limited extent to engage in cultural activities specific to their ethnic group and language. Although the stated purpose was to extend the reach of the Communist Party into non-Russian minorities, it was a de facto pluralist approach lasting to the early 1930s. The years of the liberalization policy overlapped roughly with economic stabilization and recovery — but any causal connection between the two would be an artefact of the temporary institutional liberalization that was promulgated top-down by a small number of Bolshevik leaders.

[11]These are not new questions: Thomas Aquinas argued that diversity among creatures was necessary in order that "the divine goodness might the more perfectly be bestowed on things" and adds "there should be diversity among them, so that what could not be perfectly represented by one single thing, might be more perfectly represented in various ways by things of various kinds.“ Cited by das Neves and Melé (2013).


Growth Rate = .027 - .015 * Religious Fractionalization; R^2 = 4.1%
Average Growth Rate, 1960-2019
-.02
0
.02
.04
.06
0
.2
.4
.6
.8
Religious Fractionalization
n = 122 RMSE = .0170373


Growth Rate = .027 - .016 * Linguistic Fractionalization; R^2 = 7.6%
Average Growth Rate, 1960-2019
-.02
0
.02
.04
.06
0
.2
.4
.6
.8
1
Linguistic Fractionalization
n = 122 RMSE = .0167224


Growth Rate = .032 - .027 * Ethnic Fractionalization; R^2 = 16.2%
Average Growth Rate, 1960-2019
-.02
0
.02
.04
.06
0
.2
.4
.6
.8
1
Ethnic Fractionalization
n = 122 RMSE = .015929

probably indicates that on balance the negative factors of fractionalization slightly dominate the positive factors. A weak but negative relation between ethnic fragmentation and economic growth was found by the seminal paper in the area (Easterly and Levine, 1997) and confirmed by subsequent work looking at fractionalization (Alesina et al., 2003).[12] Without specifying a much more detailed structural model, at this point the net effect of diversity on the macroeconomy is weak.[13] More specialized studies of the effects of ethnic diversity confirm that its effect on the economy is, on average negative. Besley and Persson (2011, pp. 160-167) report that ethnic homogeneity (low diversity) is positively correlated with such outcome variables as low levels of corruption, ease of doing business, and access to credit. For other outcome variables, however, the relations are statistically insignificant, and on the whole the relationship between ethnic diversity and economic growth is not very strong, but on balance seen as negative.

Detailed historical case studies of specific nations are few, but Menyhert (2016), in a detailed study of the highly diverse Hungarian part of the Habsburg Empire in 1910, finds that ethnolingual and religious diversity had a positive (if small) effect on economic development as approximated by the growth in the tax base. A recent confirmation of the association of diversity and technological progress is provided in a pioneering paper by Cinnirella and Streb (2017), who show that in a large sample of nineteenth-century German cities, the ones that were most diverse also had the highest rate of patenting. It should be added, however, that they concede the pitfalls of using diversity (an outcome) as a proxy for religious tolerance (a cultural value), without the proper distinction between

[12]Alesina et al. find that religious fractionalization, unlike ethnic and linguistic measures, are basically uncorrelated with economic growth. As we will see below, historically speaking there may be a relation, but a simple specification that looks at religious diversity's effect on economic growth may be oversimplified.

[13]The classic paper of Fearon and Laitin (2003) confirms that the relationship between diversity and conflict is weak. Their work suggests that once economic and geographical factors are controlled for, various measures of diversity have no explanatory power for conflict. Other definitions of diversity that account for dissimilarities and the coherence of groups (summarized as "polarization") do, however, correlate with armed conflict. Again, careful definitions matter here. Fractionalization is related to "diversity" but quite distinct from the concept of "polarization," which is high when, for instance, society consists of two large-sized groups (e.g., Muslims and Hindus in India) but low when society consists of many small groups. Polarization is strongly related to the onset of civil conflict (Montalvo and Reynal-Querol, 2005).

tolerance and pluralism proposed above.[14] Clearly, on the macro level, diversity has both salutary and deleterious effects, the latter focusing on its negative effect of fractionalization on social capital and trust (Alesina and LaFerrara, 2005). It is not surprising, then, that well-designed studies still find contradictory results.

On the microlevel, empirical research is extensive but the evidence is equally mixed. One meta-analysis (Stahl et al., 2010) finds that cultural diversity at the firm level inherently involves trade-offs, meaning that the "optimal mix" may vary depending on the specific task at hand. Furthermore, culturally diverse teams had higher creativity (as postulated by Scott Page, 2007), but also more conflict and less social integration. Cultural diversity does not have a direct impact on team performance but the effect is indirect, mediated by "process variables" such as creativity, cohesion, and conflict; and is moderated by contextual factors such as team tenure, the complexity of the task, and whether the team is co-located or geographically dispersed. In another survey, Stahl and Maznevski (2021) find that a meta-analysis based on 44 studies conducted between 1985 and early 2018, indicates that deep-level (cultural and knowledge-based) diversity is associated with more creativity due to its relationship with higher information diversity. This effect tends to be stronger when the team is co-located or is engaging in a task with high interdependence. Surface-level (phenotypical) diversity, which can raise social identity threats, was negatively related to creativity and innovation for simple tasks.[15] In short, there are many cases that confirm Richard Florida's and Page's enthusiasm about diversity but also many that do not. Perhaps historical studies can shed a different light on the matter.[16]

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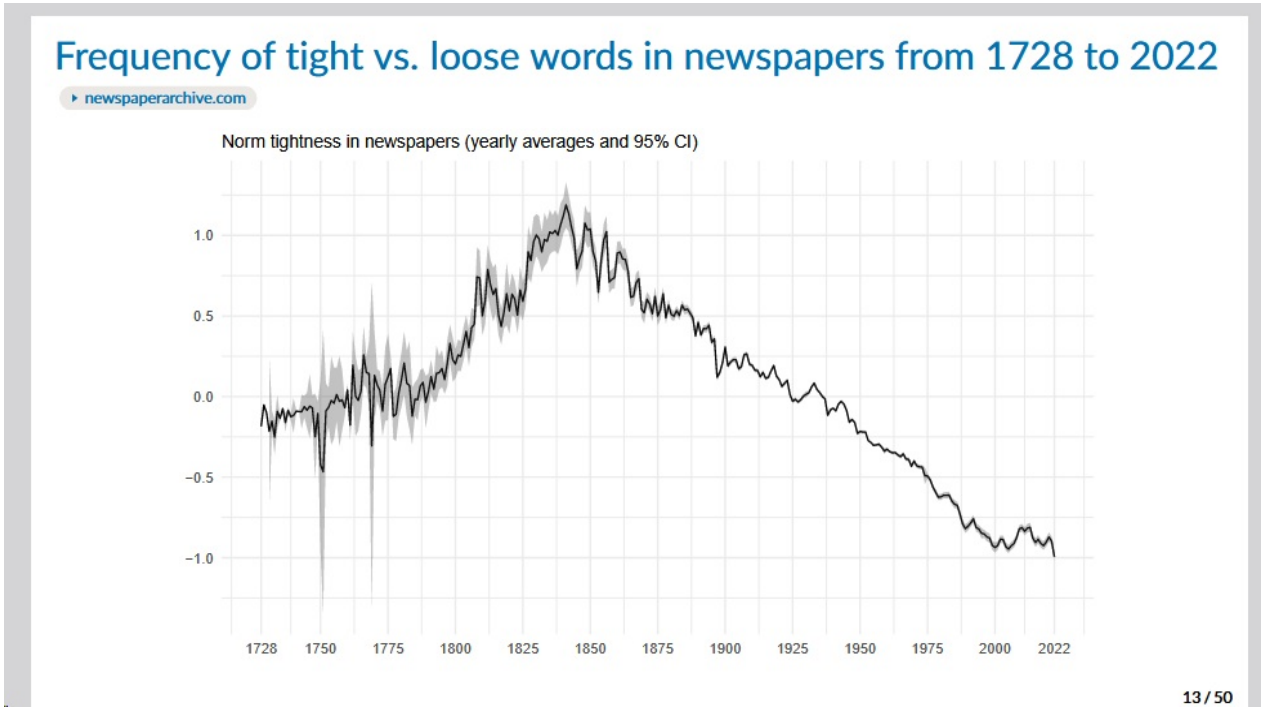
[14]While Cinnirella and Streb find a statistically significant effect of religious diversity on patenting, their regressions (once a dummy variable for location is dropped) explain no more than 4 percent of the variation in patenting across the 1274 towns in their sample (somewhat better in a sample of 452 counties).

[15]A good example of the ambiguity of diversity at the firm level is a survey by Rock, Grant and Grey (2016). The paper argues strongly that more diversity leads to higher profitability, more innovation and more revenue, yet many companies that tried to recruit a more diverse workforce experienced that "success so far has been marginal." The reason, they argue, is that work in a diverse team is more strenuous and difficult, but that this higher effort — in some experiments — yielded better results. Bringing "different viewpoints" to the discussion was on the whole valuable, as opposed to different values, which they note, can produce corrosive conflict. The difference between "viewpoints" and "values" may be more elusive than they recognize.

[16]Recent research has taken a new look at the effects of religious fractionalization in the past on current institutional conditions (Coşgel, Miceli and Yildirim, 2023). What they find is that if historically the government did not follow the principles of pluralism but favored one religion at the expense of another, it led to more civil strife

A more indirect measure of the effect of changing culture is to look at a measure of intellectual or cultural diversity over the long haul in recent times. An interesting contribution here is an application of Michele Gelfand (2018), who has placed at the center the degree to which individuals conform to societal norms and values. It measures the level of adherence or conformity to the established norms and expectations within a society or a particular social group and can just be taken as a proxy for cultural diversity. When a society or group exhibits high norm tightness, it means that there is a strong emphasis on conformity, and deviating from the accepted norms is discouraged or met with disapproval. Conversely, low norm tightness indicates a greater degree of tolerance for non-conformity and a more permissive attitude toward deviations from established norms. In a pioneering application of Gelfand's ideas, Max Posch (2023) has analyzed a large database of US newspapers between 1728 and 2020 and derived a norm-tightness index based on natural language processing. The result, reproduced in fig. 2, shows a rising norm-tightness in the US before the middle of the nineteenth century, and then a continuous declining trend between c. 1850 and 2000. The declining trend ends at the end of the twentieth century and has become stable in the twenty-first century. It may be no accident that the decline in norm-tightness coincides with an era of unprecedented technological growth and scientific creativity in US history (Gordon, 2016), but that is far from establishing a causal connection.

after 1960. They find that civil conflicts in the post-1960 period were in part driven by religious fragmentation in which the ruler strongly favored one religion over another. Political and religious favoritism produced negative legacy effects. This finding constitutes a nice application of Kranzberg's Law: it is not so much the fragmentation itself but the institutional environment in which it takes place that decides what the effects of diversity are.



Source: courtesy of Max Posch, 2023.

Lessons from History I: Pluralism and Minorities

The effects of diversity on economic performance can be better understood from historical cases in which minorities of one kind or another dwelled amidst a majority of people who differed from them in some observable way. The canonical example is the presence of Jews in the Christian and Muslim worlds. Similar groups were the Roma, Armenian migrants in the Middle East, German settlers in southern and eastern Europe, Parsi and Irani groups in India, and Chinese migrants in the Indochina and Indonesia. Did economic factors influence the relationship between the majority in-group and these minorities?

In a remarkable paper, Saumitra Jha (2013) has written down the economics when a minority will be treated in a pluralist way, at least under normal circumstances. These can be summarized conveniently as Jha's five principles of pluralism, and list when and under what circumstances the minority will be well-treated.[17]

1. *Complementarity*: If the two groups produce goods or services that are basically complementary, and if the majority recognizes these benefits, they are likely to allow the minority considerable freedoms and profit from their existence. The inhabitants of the Jewish *shtetls* in eastern Europe provided a host of valuable services in retail, transportation, finance, tavernkeeping, and more, whereas the majority population was heavily agricultural (Petrovsky-Shtern, 2017). In eighteenth-century Germany, court-Jews provided administrative services and in Poland at that time they provided estate management.
2. *Locked-in specialization*: The majority (local) group should not be able to replicate or seize and then successfully deploy the capabilities and resources that the out-group uses more intensively. If the minority group, being politically weaker, derives its economic success from a resource that can be readily expropriated, the temptation for the majority to do so may be very strong. Service minorities had an incentive to

[17]Jha's test case is the position of Muslims in Hindu India, but his model works well for most minorities.

specialize in activities that depended on human capital (such as medicine and management) or relied on networks of trusted fellow in-group members.[18] When such lock-in conditions weakened, the pluralist equilibrium could be upset.[19]

3. *Size and inequality:* The "non-local" group should not be so small and/or so economically successful that it accumulates huge wealth, especially wealth that is transparent and easy to expropriate such as luxury homes and large estates. Such assets may give the larger and politically stronger group a temptation to seize them and the vulnerable minority may be in a weak position to protect their assets.
4. *Redistribution*: Assuming the minority is economically successful, what is further conducive to a reasonably harmonious relation is a set of mechanisms that redistribute income between the two groups without violence while maintaining incentives. An example is a tax assessed on the successful minority (but not at confiscatory rates) and redistributed as rents to the people in power. This creates a powerful incentive for both sides to create a pluralist modus vivendi.[20]
5. *Intertemporal tradeoff***:** The discount rate of the majority class is not too high for them to ignore the long-term effects of losing the benefits of the minority. In cases of national emergency the discount rate would peak, and the temptation to expropriate the vulnerable minorities would be too tempting.

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[18]The best-known example is the network of Maghribi traders, made famous by the classic work of Avner Greif (2005). A more recent paper notes the importance of "community networks" and their role in providing credit and information to trusted members of out-groups in economies in which markets were still underdeveloped (Gupta et al., 2022). Such community networks are especially important in societies in which communitarian values were prevalent, as opposed to more market-friendly universalist values (Enke,

[19]This is effectively the argument made by Becker and Pascali (2019), who maintain that the Reformation weakened the prohibition on lending at interest in Protestant regions, and turned Jews and Christians from strong complements to weak substitutes, and hence reduced the economic gains from pluralism. The insight of Slezkine (2004; 2nd ed. 2019) is similar: antisemitism in Eastern Europe flared up in the second half of the nineteenth century because the skills that Jews had in service occupations could be more easily reproduced by non-Jews, who then used political power to displace Jews and keep them out.

[20]An example of such an arrangement is provided by Botticini (2000, p. 166) who shows how the profits of Jewish moneylenders benefitted the public finances of the communes in which they lived. Italian town governments, turned to Jewish lenders for funds, via taxation or loans.

To those five principles, all enunciated or implied by Jha, one could add one more of considerable historical importance.

6. *Political Entrepreneurs***:** Pluralist institutional structures should be resistant to political entrepreneurs, usually populist demagogues or ideological fanatics, who foster and exploit a culture of intolerance and xenophobia to draw political rents from inciting the majority population against some convenient target such as a vulnerable minority. These instances of the "economics of hatred" (Glaeser, 2005) are all too common and they can easily negate the substantial economic benefits of pluralism.[21] The expulsion of non-Christian religious minorities from Spain, especially the Jews in 1492 and the Moriscos in 1609 are examples of such destructive political entrepreneurship (Chaney and Hornbeck, 2016).[22] Glaeser points out that pluralist institutions may depend on the cost of disseminating false racist narratives as opposed to the costs of verifying them. This is correct, but we should keep in mind the great danger of confirmation bias in these matters, which immunizes prejudiced people to evidence. Sadly, when it comes to racial hatred or religious bigotry, anything that could be regarded as factual evidence can be readily dismissed by those committed to an intolerant culture.

These principles, then, indicate what to expect in terms of relations between a majority in-group and a minority outgroup as an example of the salutary effects of diversity. When it works well, it can create huge benefits for society as a whole. In Imperial Germany, Jews were legally emancipated despite widespread antisemitism. While much of the culture was still intolerant, the pluralist institutions were able to restrain the behavior of anti-Jewish elements in the population. The net result was that Jews in Imperial Germany punched above their weight in their contribution to the industrial, commercial, and scientific development of the nation. While their share in the population

[21]To protect themselves against such entrepreneurs, successful minorities often display demonstrative loyalty to the government in power run by the in-group majority.

[22]Another instance would be political scapegoatism, in which a minority is blamed for some misfortune that occurs in society that otherwise seems to defy explanation. The persecution of Jews after the Black Death would be a well-documented example of such social scapegoatism.

was about one percent in 1871 and about 0.8 percent in 1933, they were over-represented in every sector associated with modernization, industrialization, and advanced science and technology. According to the 1933 German Census, Jews in Germany comprised 16.25 percent of lawyers, 15.05 percent of brokerage agents and 10.88 percent of medical personnel (Warburg, 1939, p. 30). This may not have amounted to the complete domination that Nazi propaganda screamed about, but it reflects the impact that pluralist policies had on Germany's development.[23] In the German banking sector, both smaller private banks and the larger universal banks, Jews had a very powerful presence.

An examination of a small subsample of the Jews who materially contributed to Imperial Germany's economic and scientific successes confirms their central role in German economic development. Among the most notable were Albert Ballin, the son of a Danish Jewish immigrant who built a hugely successful shipping business and pioneered pleasure cruises catering to wealthy customers. He was personally close to the German Emperor and one of the Jews close to the imperial court known as *Kaiserjuden*. Equally prominent was Emil Rathenau, who purchased the European rights to Edison's inventions and founded Allgemeine-Elektrizitäts-Gesellschaft (later known as AEG) in 1887. He became known as the "Bismarck of the German electric industry," the person who introduced electric light and trams to most German cities. His son Walther ran the German command economy during World War I and served as foreign minister in the early days of the Weimar Republic.[24] In retailing, a chain of department stores was established by Hermann Tietz (1837-1907) and his nephews. The vast and luxurious stores were a huge success and had 10 branches in Germany, employing 13,000 employees. The bankers Abraham von Oppenheim and Gerson von Bleichröder were the first Jews to be ennobled in Germany on account of their financial support in the expensive military and political maneuvers that led to the unification of Germany. Bleichröder was particularly close to Bismarck, despite the chancellor's rather explicit antisemitism and he was known as Bismarck's *Privatjude* (Elon, 2003, p. 193).

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[23]Elon (2003, p. 6) notes that "In a relatively brief period [1870-1933], this small community [German Jews] produced a staggering array of entrepreneurs, artists, writers, wits, scholars, and radical political activists"

[24]His contribution to the German war effort was remarkable: Elon (2003) pp. 314-315 notes that "In his eight months in this post, Rathenau established the first truly planned modern economy in Europe. It is no exaggeration to say that, but for Rathenau and the gifted scientists, economists, and managers he engaged, Germany might have succumbed within months; its adversaries had greater stocks of food, minerals ... bullets, and open supply lines if stocks ran out."

In science and medicine, too, the contribution of Jews was way out of proportion, even if we leave out superstars such as Einstein and Freud. Perhaps the biggest contribution of all to the German nation was made by the chemist Fritz Haber, a fervent German nationalist, who famously perfected the nitrogen fixing process for which he won the Nobel prize in chemistry, and with which he did Germany the doubtful favor of securing a supply of nitrates that allowed it to stay in the war for four and a half years rather than a few months. Equally accomplished was the biologist Paul Ehrlich who won the Nobel Prize in 1908 for laying the foundations of what is now known as immunology, as well as developing the first effective treatment of syphilis.

And yet, German Jews violated the principles enunciated earlier that make pluralism work and diversity a blessing rather than a threat. Their skills were not strongly complementary to those of their gentile neighbors. They were good at activities that non-Jewish Germans were also good at. For every Emil Rathenau there was a Siemens and a Krupp and for every Tietz and Wertheim there were non-Jewish storeowners such as Rudolph Karstadt. In science, Einstein's success spurred the wrath and jealousy of non-Jewish competitors such as the physicist Philipp Lenard, who infamously dubbed Einstein's work as "Jewish physics." The culture of intolerance (that is antisemitism) was alive and well in Imperial and Weimar Germany, even as pluralism was still the law of the land.

The rise of the Nazis constitutes a historical experiment insofar as it can be seen as an abrupt radical institutional change. Jewish assets were easily expropriated or bought at bargain basement prices by greedy Germans. The sharp turn of Germany from a nation of reluctant but effective pluralism to one of violent suppression of minorities demonstrates the fragility of pluralist institutions unless they rest on a firm cultural foundation of tolerance and willingness to co-exist with others.[25] It also shows how vulnerable pluralism is to demagogic political entrepreneurs who are willing to ride a wave of racism, exploiting the conscious and subconscious homophily that makes so many people uncomfortable with and suspicious of "others."

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[25]Both the Kaiser and Bismarck, despite their friendship with some Jews and their reliance on support from wealthy and influential Jewish citizens, were demonstrably antisemitic. Wilhelm fell under the influence of the rabid English racist Houston Stewart Chamberlain, and even proposed making his works required reading in German Schools (Elon, 2003, p. 267). Bismarck's ambivalent attitudes to Jews was equally obvious and open. At the Versailles peace conference he felt that his French counterparts must have been Jewish to judge from their physiognomy. "There was an insistent, harsh anti-Semitic tone at Versailles: at no other time in his life did Bismarck speak so often, so freely, so scathingly of the rootlessness of Jews, of their hustling, of their omnipresence" (Stern, 1979, p. 146).

Again, we can see Kranzberg's Law in action. Much like the self-defeating bigotry of Louis XIV in the late seventeenth century, the Nazi racist policies were hugely harmful to Germany. Expelling the Jews, even if they were less than one percent of the population, drained a substantial proportion of Germany's upper-tail human capital, which was essential to its continued technological and scientific leadership.[26] In a series of brilliant papers, Fabian Waldinger has demonstrated that the loss of its intellectual elite in science and medicine left Germany permanently weakened. By his calculations, more than 1,000 academics were dismissed from German universities. This number included 15.0% of physicists, 14.1% of chemists, and 18.7% of mathematicians. It does not include the loss of other elite intellectuals from universities or top STEM workers employed by the government or the private sector. The loss of top Jewish scientists and physicians caused a large decline in research output. This loss was persistent, still noticeable as late as 1980. Waldinger (2013, p. 813) estimates the total loss of top-rated scientific publications to be around 34% in the disciplines of physics, chemistry, and mathematics.[27]

Another example of an even smaller minority punching considerably above its weight and creating a substantial social surplus for the majority is the dramatic history of the Parsi and Irani minorities in India. The Parsis are is a small community of Zoroastrians mostly located in north-east India, the descendants of religious refugees who fled Iran (then Persia) after the Muslim conquest in the seventh century. According to traditional accounts, they were given refuge in Gujarat by a local prince on condition that they adopted the Hindu language and accepted the customary marriage patterns (Kapoor, 2021, p. 14). For centuries, the Parsi maintained their separate identity and practiced endogamy but lived in peace with their Hindu neighbors. With the arrival of Europeans, the Parsis perceived opportunities, and succeeded in benefitting economically from the Raj. As Karaka, (1884, vol. 2, p. 9) remarks, "either the Parsis had the knack of ingratiating themselves in the favour of the Europeans, or they were selected by them for their intelligence, business habits, and

[26]For an exposition of the concept of upper-tail human capital, see Mokyr (2009, p. 122) and Mokyr (2016, pp. 121-126).

[27]Strikingly, Waldinger shows that German science also suffered in the short term from the destruction of the physical plant and equipment due to allied bombing, but the loss of physical assets was less persistent and smaller than that of the upper-tail human capital due to the anti-pluralist institutions of the Nazi regime.

integrity."[28] By the nineteenth century, with the rise of Bombay, much of the trade between it and Europe was controlled by Parsi traders who also claimed a substantial share of trade with East Asia (Tripathi, 2004, pp. 76-82).[29]

In subsequent centuries, as Ghandi himself is supposed to have remarked, "in numbers the Parsis are beneath contempt, in contributions beyond compare" (cited by Kapoor, 2021, p. 15). Despite a population estimated today at below 60,000, their contribution to the Indian economy, its politics, and its culture have been spectacular. As might be expected from a small and vulnerable but wealthy minority, they were remarkably loyal to their government (Karaka, 1884, vol. 2, p. 50) and, consistent with the Jha principle No. 4, contributed a great deal to charity and public goods.[30]Among the most notable Parsis in India in the more recent past and present are two of the giants of nineteenth century manufacturing in India. Jamsetji Nusserwanji Tata (1839-1904) regarded as the legendary "Father of Indian Industry" and the founding patriarch of the notable Tata family. He was so influential in the world of industry that Jawaharlal Nehru referred to Tata as a "One-Man Planning Commission." Equally prominent was the "Petit" family, founded by Manockji Petit (b. 1803) but brought to great prominence by Sir Dinshaw Maneckji Petit, 1st Baronet (1823–1901), the pioneer of the modern textile industry in India and equally known for extensive philanthropy. In shipbuilding, the Wadia family was equally prominent, beginning with Lovji Nusserwanjee Wadia (1702–1774), who founded his docks in 1736 and which survives till today as the Wadia group located in Mumbai (Karaka, 1884, vol. 2, pp. 60-76). Many of these dynasties are still counted among the most successful businesses in India, and they have been joined by new Parsi

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[28]One of the first Parsis to become a successful entrepreneur in the new colonial environment was Rustom Maneck (full name: Naoroji Rustomji Manek Seth) 1662-1732. He became the chief broker for the British East India Company in Surat, and represented its interest at the court of Emperor Aurangzeb in Delhi. After a dispute with his employer, one of his sons famously sailed to London, sued for an injustice, and won a huge settlement (Edulgee, 2005-2023). The family subsequently built a fabulous ancestral mansion on top of Dongri Hill, situated to the west of Bombay Dock. The entire hill was bought by his family and renamed Naoroji Hill from where the best blue basalt available in Bombay was quarried.

[29]Tripathi argues that "the Parsees possessed the knowledge of the land and its language, and being a small minority, it was relatively easy for them to deal with the foreigners with a certain measure of flexibility. Their minority status also gave them some advantage in mediating between different interests and political powers" (2004, p. 77).

[30]For instance, Jamsetji Tata used half his fortune to found the Indian Institute of Science (IISc) in Bombay, which opened in 1911 and is still a major producer of top scientists in India (Kapoor, 2021, pp. 50-51).

entrepreneurs, such as Cyrus Poonawalla, the owner and chair of the Serum Institute of India, the world's largest vaccine producer. Outside business, too, the Parsi have made a disproportional mark, including in music such as the conductor Zubin Mehta and the pop singer Freddie Mercury (né Farrokh Bulsara), science, such as two persons (unrelated) both named Homi Bhaba (one a noted nuclear scientist, the other a critical theorist), and in the military (General Sam Manekshaw, the hero of the war against Pakistan of 1971).

Lessons from History II: The Reformation.

The Reformation in Europe provides an instructive example of the effects of diversity, in this case religious diversity. Medieval Europe had been a world of little religious diversity: the Catholic (or "Latin") church ruled supreme, and local "heresies" were mercilessly suppressed. Jewish settlements in the Christian world were self-contained, small, and under constant pressure, and the Muslim world was geographically and economically separate. The only diversity was within the Church (such as schisms) but its hierarchical structure limited such variations. All this changed dramatically with the Reformation. Unlike cases where "religious diversity" really was a proxy for ethnic or racial diversity, the Reformation in Europe constituted a severe shock to the low-diversity religious equilibrium, and, for better or for worse, it created rather abruptly a new and much more diverse religious environment.

What were the economic effects of this revolution? Clearly, for the first century after the Reformation, it is clear that religious diversity was mediated by antipluralist institutions, consistent with Kranzberg's Law. The principle of *cuius regio eius religio* formalized at the Peace of Augsburg in 1555 embodied the fundamental idea that "others" who did not share the religion of the ruler were not welcome. Germany (and Europe) was to be divided into Protestant and Catholic areas. That principle was never fully carried out on the ground, but it reflects the zeitgeist of religious intolerance in the middle of the sixteenth century. In 1562, the French Wars of Religion started with a massacre of Huguenots at Passy and were to last for thirty six years. Elsewhere in Europe, too, massive violence between different brands of Christianity continued for many decades. These religious conflicts reached a crescendo of sorts with the 30-Years War in Germany with devastating

results for the economies of Central Europe. Moreover, as recently shown by Cabello (2023), the Reformation and its direct consequence, the Catholic Counter-Reformation, had strongly deleterious effects on European science. The Catholic holy inquisition, the persecution of heretics, and the strong prohibitions on books and on travel to foreign universities depressed science in much of Europe south of the Alps. Here, too, institutions mattered: north of the Alps the harmful effects of religious strife were much less pronounced, in large part because of fragmented and uncoordinated leadership of fanatical and benighted religious leaders.

In short, the rise of religious diversity created a sharp rise in antipluralist institutions, with devastating human and economic consequences. Over time, European intellectuals and politicians, led by such clear-thinking writers as the French theologian Sebastian Castellio (1515-1563) began to recognize the cruelty and futility of intolerance.

Yet intolerance did not disappear magically with the 1648 Peace of Westfalia or the English Act of Toleration of 1689, not even in the most commercially advanced countries.[31] Moreover, being "tolerated" was not the same as emancipation. Even the more pluralist institutions (formal and informal) of progressive western societies were still quite remote from color/race/religion blind. In other words, the greater pluralism in much of enlightened eighteenth century Europe did not preclude serious discrimination against minority groups at many levels. In Great Britain, dissenters such as Unitarians and Catholics could live and practice their religion after the Act of Toleration, but were excluded from many spheres until the Emancipation Act of 1829. Commerce and finance, where such discrimination was absent, prospered as a consequence.[32] All the same, even in Britain the move to a pluralist society was slow, uneven, and full of setbacks and retreats.[33] Profound prejudice

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[31]The pluralism embodied in France in the Edict of Nantes of 1598 that gave Protestant the right to live in France and practice their religion in places was eventually reversed by the whims of the autocratic Louis XIV, revoking it in 1685, followed by the bloody suppression of the so-called Camisard rebellion of French Huguenots in 1703-04 in the south of France, leading to thousands of casualties and executions.

[32]In a famous passage in his sixth letter *Regarding the English Nation,* Voltaire exclaimed that at the London Royal Exchange "the Jew, the Mohammedan and the Christian negotiate with one another as if they were all of the same religion, and the only heretics are those who declare bankruptcy."

[33]A 1753 bill that would give Britain's Jews the right to be naturalized subject to a residence qualification and the evidence of two supporting witnesses,'without receiving the Sacrament of the Lord's Supper' had to be withdrawn after furious opposition by bigoted Tories who felt it threatened the essence of a Christian Nation and indicates that pluralism had to tread cautiously because it remained contested deep in the age of Enlightenment

remained deeply ensconced in British culture. In 1788, the enlightened English intellectual Edward Gibbon, observing the anti-Catholic Gordon Riots of 1780, wrote that they reflected "a dark and diabolical fanaticism, which I had supposed to be extinct, but which actually subsists in Great Britain." Two generations later, John Stuart Mill in his *On Liberty* felt the same way.[34]

Europe embarked on a growing commitment to pluralism in the nineteenth century, but only a growing ideology of tolerance constituted the solid cultural foundation of the legal and administrative reforms that established formal pluralism and gave religious minorities many rights beyond permission to simply reside and worship in a given country. The eighteenth-century Enlightenment, by and large, supplied that foundation. While the *philosophes* whose work we identify as enlightened disagreed on many issues, there seems to be wide consensus among them as to the desirability of a "live and live" attitude that is, a culture of toleration and the pluralist institutions that came with it.[35] This is not to say that there were no important differences between Enlightenment intellectuals on this matter or that their support for pluralism was unqualified or entirely driven by ethics as opposed to pragmatism. Yet in the end there seems little to disagree with Grell and Porter (2000, p. 19) when they summarize the history of tolerance in Europe by declaring that "it was the thinkers of the Enlightenment who most clearly voiced those arguments for toleration, in all their strengths and weaknesses, which continue to envelop us in our present multicultural and multireligious societies. Here, as in so many other ways, we are the children of the Enlightenment."

The importance of the Enlightenment for long-term economic development has long been underestimated, but today there are signs that its impact is being recognized (Mokyr, 2005; Squicciarini and Voigtländer, 2015). The mechanisms through which an elite cultural movement could affect economic outcomes are varied. However, an emphasis on pluralism and on a more

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(Champion, 2000, p. 139).

[34]"Yet so natural to mankind is intolerance in whatever they really care about, that religious freedom has hardly anywhere been practically realized, except where religious indifference, which dislikes to have its peace disturbed by theological quarrels, has added its weight to the scale. In the minds of almost all religious persons, even in the most tolerant countries, the duty of toleration is admitted with tacit reserves... Wherever the sentiment of the majority is still genuine and intense, it is found to have abated little of its claim to be obeyed." Mill [1859], 2011, p. 14.

[35]For instance, the Prussian toleration edict of 1788 provided equal status to all Christian religions, followed by guaranteeing the principles of the freedom of conscience in 1794 (Cinnirella and Streb, 2017, p. 9).

tolerant attitude toward the publication of innovative material — no matter how disturbing to those committed to the conventional wisdom — can already be seen in the late seventeenth century with the "radical" writings of John Toland. Toland roundly condemned all forms of institutionalized Christianity in his 1696 book *Christianity not Mysterious*.[36] On the Continent, Pierre Bayle argued strenuously that a society of atheists could live a virtuous existence by honor and civility and did not need religion to keep people from misbehaving (Grell and Porter, 2000, p. 8). While roundly condemned by pious intellectuals, neither Toland nor Bayle, nor the most influential heretic of the seventeenth century, Spinoza, were ever physically harmed despite threats of violence and repeated needs to relocate. As the Enlightenment progressed, such threats of violence became rarer, although discrimination against heretics and their writings was still common.

What were the economic effects of pluralism? A comparison between Britain and France and their different levels of pluralism is instructive. The role of dissenters and religious minorities in the British Industrial Revolution has been well documented (Mokyr, 2009, pp. 361-63). Excluded from many career paths and the major universities, dissenters created their own educational institutions and many of them specialized in high-end artisanal occupations and commerce. In France, the bigoted Catholicism of Louis XIV in his later years led to the migration of some of the most skilled and productive members of the upper tail of the human capital distribution in France, among them Denis Papin, Abraham De Moivre, and John T. Desaguliers, who all found a home in Britain. Much of the clock- and watchmaking industry in France's neighbors originated with immigrants fleeing religious bigotry (Landes, 1983, p. 219). The favorable treatment of Huguenots in Prussia was demonstrated in a famous paper by Erik Hornung (2014). Similar phenomena can be observed in the Dutch United Provinces. Pluralism, no matter how incomplete, was a powerful tool in the competitive world of states in this era, and the migration of the footloose educated and skilled classes implied that any state whose anti-pluralist policies were dictated by intolerance would pay a high price. A correlation between diversity at the local level (such as cities) and technological creativity creates a problem of identification. It is possible that pluralism is a part of a larger complex of

[36]A century later, radical tolerance in the West had evolved; Thomas Paine famously wrote that "Toleration is not the *opposite* of Intolerance, but is the *counterfeit* of it. Both are despotisms. The one assumes to itself the right of withholding Liberty of Conscience and the other of granting it...The former is church and state, and the latter is church and traffic" (Paine [1791] 2017 p. 272).

enlightened institutions that encourages *both* diversity and technological progress, and that hence a clean *causal* connection between diversity and patents is not demonstrated. Benighted institutions such as the ones in southern Europe as argued for by Cabello (2023) would be the mirror image of that association.

Pluralism and the Industrial Revolution

Did British pluralism contribute to the Industrial Revolution? As noted, for many years after the Glorious Revolution religious minorities were still not considered part of the establishment that ran the country, but for that reason their human capital and energy were channeled into commercial and industrial activities. Scholars have long stressed the high proportion of dissenters among the most successful entrepreneurs and innovators in the Industrial Revolution. A particularly good example were Quakers. The most famous of them were the Darbys of Coalbrookdale in Shropshire, who famously pioneered the use of coke in iron smelting. In late eighteenth-century Birmingham, Quakers made up 1 percent of the town's population but one-third of its ironmasters and tanners (Jones, 2008, p. 177).[37] Much like other minority groups in other pluralist societies, dissenters felt that they could trust their co-religionists more than others, which gave them an advantage in networked occupations in which trust was important. In this regard, homophily may have had its upside.

The other paradigmatic example of a tolerant culture leading to (relatively) pluralist institutions and from there to economic prosperity is the Netherlands in the Golden Age. Again, by modern standards, this was hardly an exemplary pluralist society. Many cities had strict prohibitions on the residence of people (many of them Protestants) who did not belong to the dominant Calvinist Church. The Dutch prominent liberal and pro-pluralist intellectual Dirck Coornhert (1522-1590) was born and remained a Catholic all his life, and had to move repeatedly to escape intolerant cities, until he settled in Gouda in 1588, at that time a relatively pluralist city. Pluralism in the Netherlands was

[37]Margaret Jacob (2000) has stressed the importance of unitarianism in the eighteenth century British economy. Three of the most prominent figures of the Industrial Revolution, James Watt, Josiah Wedgwood and Joseph Priestley were unitarians, as were many others. Jacob summarizes the impact of this dissenting creed as offering "the conviction that a rational God — and not Calvin's inscrutable and judgmental one — would reward and replenish" (p. 278).

a matter of geography (Israel, 1995, pp. 640-645). In Utrecht, for example, Jews could not stay overnight until 1789 and had to live in Maarssen, a good two hours walking away. Again, however, formal regulations and the actual practice on the ground may have diverged. The pre-eminent historian of Dutch tolerance has argued that authorities often turned a blind eye to violations of residency limitations and other constraints on minorities and concludes that "religious dissenters, however, enjoyed a de facto tolerance that made Dutch society religiously the most diverse and pluralistic in seventeenth-century Europe" (Kaplan, 2010, p. 174). Non-Calvinists may have been barred from public office, but they could worship in so-called *schuilkerken* (illicit churches) and while they were at times subject to harassment, by and large people got along.

The Dutch Golden Age is a classic example of how capitalism and pluralism went hand-in-hand. It would be no exaggeration to say that in capitalist Netherlands in its Golden Age, religious diversity was a feature, not a bug of society. Pluralism, it turned out, was profitable. Local authorities were encouraged in their permissive attitudes toward other religions by substantial bribes for their connivance in semi-public rituals and quite overt houses of worship (Frijhoff, 2002, p. 45). To be sure, because of the uneven nature of pluralism in the Dutch Republic, some scholars have objected to the widespread description of contemporaries of the Netherlands as a model of tolerance. Yet it was precisely the decentralization of political power that made pluralism possible. Decentralized, polycentric government is typically more likely to be tolerant and diverse, simply because of coordination failures. More powerful autocrats like Ferdinand-Isabella, Louis XIV, or Czar Alexander III could carry out major acts of intolerance (at high cost). In the Netherlands this would have been far more difficult, as local and provincial authorities would have had to coordinate their repressive policies.

In that sense, the Dutch Republic may be regarded as a miniature example of the political fragmentation argument, recently re-stated by Walter Scheidel in his *Escape from Rome*. In Europe, suppressing technological and intellectual innovation of any kind --- including religion --- was difficult simply because reactionary powers usually found it difficult to coordinate and because there were always local niches in which more tolerant rulers were willing to accept "apostates." Clever heterodox thinkers and religious skeptics inhabited the seams of Europe and skillfully played the states against one another.

The more difficult question is whether this pluralism actually was a significant positive factor in the "embarrassment of riches" of the Dutch Golden Age. Clearly, some contemporaries thought so, none more than the early political economist Pieter de la Court (1618-1685), who pointed out in his famous *Interests of Holland* that the Dutch economy depended on emigrants, and that religious pluralism "hath brought in many inhabitants and driven out but a few" (De la Court, [1662] 1746, p. 68; Israel, 1995, p. 786). As an urban society, the Holland provinces required the constant infusion of immigrants on account of the high mortality rates in cities.[38] There is, however, little evidence that religious diversity *as such* contributed to its prosperity, and it was not able to prevent the economic decline of the Netherlands in the later eighteenth century. It seems more plausible that *both* pluralism and economic success were the result of a more rationalist and capitalist culture that emerged in the Netherlands in medieval times and that even the most benighted Calvinist fanatics could not suppress (Prak and Van Zanden 2023, pp. 113-115). Dutch capitalism meant that profits trumped bigotry.[39] While the Dutch Republic in its heyday was hardly a democratic society by modern definitions, it was clearly an example of early capitalism, and its pluralism was a telltale sign of a nation that was ready for enlightenment ideology; democracy would follow eventually. While early capitalism provided the Dutch with a material motive for tolerance, the enlightenment added a moral base for it. In 1796, Dutch Jews were emancipated by the (French-dominated) Batavic Republic.

Competition and Pluralism

[38]Frijhoff (2002, p. 28) has noted that the organic connection between religious toleration and commercial prosperity was established as early as 1651 in Jean-Nicolas de Parival's *Les Délices de la Hollande,* a best-selling book translated into many languages. In his *Political Arithmetic,* William Petty similarly felt that "trade is most vigorously carried on ... by the heterodox part of the [nation] and such as profess opinions different from what is publickly established" ([1690] 1755, pp. 118-119). The commercial benefits of toleration became a cliché, "often repeated by later travellers, from Basnage to Montesquieu, from the Marquis d'Argenson to Voltaire and Diderot, even while Dutch prosperity was undergoing serious and lasting setbacks".

[39]Peter Stuyvesant, the intolerant Dutch governor of New Amsterdam asked in 1665 for permission from the West India Company to kick out the few Jews that had settled thereafter having fled the Portuguese settlement of Recife in Brazil. The governors wrote back coolly that such as request would be "unreasonable and unfair, especially because of the considerable loss sustained by this nation, with others" (Oppenheim, 1909, p. 8).

The Dutch example illustrates an important element in European History that no-doubt played a role in the rise of religious pluralism, namely that internal competition in polycentric and decentralized political units is usually a salutary factor in the history of diversity. This is true even in the United States today, in which individuals who value a particular ideology have the option to settle anywhere they wish and thus vote with their feet. The Dutch Republic, despite its modest size, had a great deal of internal heterogeneity, which allowed minorities to pick and choose their location. What was true for the Netherlands was true for Europe as a whole. The competition did what it was supposed to do: antipluralist states such as France under Louis XIV eventually had no choice but to relent in their bigoted policies. In the eighteenth century after the death of Louis XIV, the persecution of Huguenots declined and some of them returned to France (one of them was the banker Jacques Necker, director-general of the finances of the Kingdom under Louis XVI). In 1787, just before the Revolution, Louis XVI signed the Edict of Versailles legitimized de iure certain civil rights for the Huguenots, even if it still denied them public worship and any political rights. A few years later the new revolutionary government officially invited them to return to France with full citizenship rights.

The other salutary effect of the Reformation and the competition among religions was that with the loss of the Latin Church's monopoly position in the European market for ideas, religions had to compete. As already noted, in any market — including the market for ideas — competition is a salutary force if the competitors stick to agreed-upon rules that keep the competition civilized. Over time, the struggle between religions in Europe moved from violence to more productive channels. Much scholarly and educational work was undertaken for the purpose of demonstrating the superiority of and securing converts for a branch of the now divided Western Christianity (Grafton, 2009, p. 11). The most important of those channels was education: Protestants such as Philipp Melanchton realized from the outset that education was a key to their success. One way the Catholic camp tried to fend off the threat of Protestants was to establish their own schooling system, primarily through Jesuit Schools. Whether this was a successful tactic to defend Catholicism remains to be seen, but clearly the Jesuits made a substantial contribution to the accumulation of human

capital world-wide.[40] The Protestants responded by setting up their own schools, the most famous of which were the dissenting academies in England (Stone, 1969). Many of the most prominent figures of the Industrial Revolution were educated at these academies, including the prominent ironmongers the Wilkinson brothers, and the chemists Joseph Priestley and John Dalton. Their graduates typically ended up in commerce, medicine, and industry. In a recent paper, Xiong and Zhao (2022) show that religious diversity and competition in the nineteenth century US led to a proliferation of Colleges, and thus laid the foundation for the American system of higher education. A back-of-the-envelope calculation suggests that there would have been approximately 22 percent fewer colleges by 1890 if the US had been dominated by a single denomination.[41] As long as pluralist institutions can mediate the competition and antipathy between rival religions and prevent them from reverting to violent conflicts, it can exploit the diversity and lead to significant economic improvements.

Conclusions

Today's realities seem to be consistent with the notion that a high rate of diversity is economically beneficial when it is coupled to pluralist and enlightened institutions, but can be devastating when it is not. Some highly diverse nations have clearly paid a price for their ethnic or linguistic diversity with no obvious benefits. Ethiopia has 90 different ethnicities with anywhere between 77 and 92 languages spoken. Myanmar has 135 distinct ethnic groups grouped into eight "major national ethnic races." Has diversity been good for those "low institutional quality" countries? At the same time it is equally clear that in some countries diversity is beneficial for the economy, provided they are firmly based on a pluralist culture of live and let live, even if perhaps

[40]A striking example of the impact of Jesuit education on long-term economic welfare is provided by Valencia (2019) who shows that in the area of the Guaraní in South America, Jesuit education had a significant salutary effect.

[41]Their conclusion is worth quoting: "The 'knowledge' industry remains, to this day, a key feature of 'American Exceptionalism'. US universities dominate global rankings: its top private research universities accumulate considerable wealth, attract talented students and faculty from abroad, and set the world's highest academic standards. This productive system is in part a consequence of unique circumstances in the 19th century: the absence of state-sponsored religion and the proliferation of Christian denominations."

not much love is lost between the different groups, as for example the Flemish and French speaking populations in Belgium or Francophone and Anglophone Canada. Perhaps the most underrated institution that makes diversity a success is the option of voluntary segregation, an application of Robert Frost's famous poem that in some cases tall fences make good neighbors.

All the same, the Page-Florida notion that mixing different ethnic and linguistic groups can stimulate creativity has merit when the institutional environment is favorable. In some countries, diversity seems demonstrably a net blessing even if there were substantial costs. Israel, for instance, is one of the world's most ethnically, linguistically, culturally, and religiously diverse countries, despite the common denominator of Jewishness. It is also one of the most creative countries, punching considerably above its weight in information technology, medicine, biotech, agricultural, and hydraulic technologies, to name but a few. It also has a rich and complex cuisine, a magnificent music scene (both popular and classical), and a highly original literary and theatre industry. Israeli culture is what syncretism is all about: creating "fusions" of diverse cultural traits, creating new entities by recombining and hybridizing ideas from different cultures. The modern Hebrew language, similarly is a synthesis of many languages, giving it an uncommon power and flexibility. Senor and Singer (2009, p. 17) single out Israel as "among the most heterogeneous in the world. Israel's tiny population is made up of some seventy different nationalities" which they credit with its hugely successful high-tech sector.[42] There is no doubt that the influx of Eastern European immigrants carrying a large amount of human capital in the late twentieth century sharply increased both diversity and creativity. In 2018, Israel was second only to Taiwan in patents per capita (Rayome, 2018). In 2022, its high-tech sector accounted for 54 percent of total exports and employed close to 10 percent of the labor force. Israel spent more on R&D than any other member of OECD, 5.4 percent of GDP (Jeffay, 2022). All the same, the costs of Israeli diversity are just as salient, as the

[42]As the Irish economist and journalist David McWilliams explained in 2004, "Israel is quite the opposite of a uni-dimensional Jewish country … It is a monotheistic melting pot of a diaspora that brought back with it the culture, language and customs of the four corners of the earth… Worldwide, you can tell how diverse the population is by the food smells of the streets and the choice of menus. In Israel, you can eat almost any specialty, from Yemenite to Russian, from real Mediterranean to bagels. Immigrants cook and that is precisely what wave after wave of poor Jews did when they arrived having been kicked out of Baghdad, Berlin, and Bosnia." David McWilliams, 2004.

country's increasingly dysfunctional political system and unending conflicts with its non-Jewish population attest.

Another contemporary example of pluralism paying off to the economy is Singapore. Singapore is also quite diverse, with its population being a mixture of Chinese (74 percent), Malay (14 percent), and South Indian (9 percent) origin. It has no fewer that four official languages (English, Mandarin, Malay, and Tamil). It leaves nothing to chance: there is a government enforced ethnic integration policy known as EIP ("Ethnic Integration Policy"). The pluralist policies of Lee Kuan Yew were aimed at ethnic pacification, and were on balance a success even if they meant the curbing of some individual freedoms. The EIP was introduced in 1989 to counter the emergence of ethnic enclaves. The four categories of racial groups: Chinese, Malay and Indian and "others"are allocated into apartment buildings according to quotas set by the EIP. Having most citizens in public housing allows the government to exercise a large degree of control over their social dynamics. The EIP is perhaps the most visible sign of this control (Badalge, 2020). But Singapore's government policy, best described as aggressive pluralism, is extended to education and employment as well.[43]

The Singaporean experience suggests above all that there is more than one path to pluralism. It is clear that forceful top-down policies can make a difference here. The Singapore government conceptualized the relationship between the different ethnic groups as four overlapping communities arranged as partially overlapping circles that maximized common ground but retains each race's separate identity (Alviar-Matin and Ho, 2010, p. 129). When institutions are sufficiently strong to enforce an overall pluralist policy of peaceful and reasonably-harmonious co-existence, the consequences are economic prosperity. Singapore's GDP per capita in 2021was 106,000 (right after Luxemburg, using PPP for comparison). It ranked seventh on the 2022 WIPO's Global Innovation Index (Israel ranked sixteenth).

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[43]Public schools in Singapore place great emphasis on developing a common national identity but remain "studiedly neutral" with regard to the promotion of group identities. The Singapore social studies curriculum emphasizes the promotion of a common citizen identity while assigning cultural and religious identities to the private sphere. In order to promote "social cohesion within a diverse society" and to ensure the survival of the nation-state, the Singapore government gives great emphasis to multicultural issues in the social studies curriculum and officially declarers that a primary aim of the subject is to develop "citizens who have empathy towards others and will participate responsibly and sensibly in a multi-ethnic, multi-cultural and multi-religious society" (Alviar-Martin and Ho, 2010).

None of this is to suggest that diversity is a necessary condition for economic success any more than any other part of the cluster of democratic institutions. Some of the most successful economies, such as the Scandinavian countries, South Korea, and Japan display little diversity. On the basis of either economic history or contemporary experience, it remains hard to argue that diversity in *any* dimension is a *major* (much less an *essential*) factor in any aspect of economic performance. The direction of its effect on the economy, moreover, depends on the quality of institutions. Perhaps this argues once again for a primary role for institutions in economic development, which seems to be a conclusion that much of the professions seems to gravitate towards.

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