

COMPETITION BETWEEN EXCLUSIVE FAITHS: WHY THE JEWS

CEASED PROSELYTIZING

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1. Introduction

This paper sets forth an economic theory of competition between exclusive religions and applies it to two important historical cases: the confrontation between Judaism and Christianity in the first century of the Common Era, and the reaction of the Catholic Church to the Protestant Reformation in the 16th and 17th centuries.

A fresh start is necessary because the extant literature on the economics of religion provides no such model. Building on Iannaccone (1995), Ferrero (2009) develops a theory of conversion to exclusive faiths that yields a model of the competition between an exclusive religion and many nonexclusive providers of religious services. There, exclusivity is viewed as a form of market signalling that works to the benefit of the collective group as long as it confronts a plurality of nonexclusive competitors, such as the Christian Church vis-à-vis the polytheistic religion of the Roman Empire; but the signalling effect of exclusivity breaks down when the group confronts another exclusive group, such as the Jews. Barros and Garoupa (2002) have a model of religious strictness in which competing groups choose their location on a one-dimensional, linear ideological space. Ferrero (2008) shows that a similar model of competition on the doctrinal line can account for the changing doctrinal position and increasing theological strictness that characterized the evolution of the Christian church up to and beyond the Constantinian age. However, this model assumes that Judaism stays fixed at the upper end of the strictness line and so is not an active player, while the locational contest is being played out by the mainline Church and a variety of Christian or quasi-Christian sects. In other words, the model implicitly assumes that Judaism has already given up proselytizing. Here, by contrast, we want to focus on that crucial decision, taken in the second half of the first century.

In a nutshell, our modelling approach is as follows. An incumbent exclusive group faces the threat of entry by another exclusive group; by definition, they cannot share members but must fight for converts. Knowing this, the incumbent may find it profitable not to accommodate the entrant – which would yield a Stackelberg equilibrium – but to deter entry by precommitting to a sufficient “capacity” expansion in the event of entry; if entry costs are high enough, strategic entry deterrence turns out to be superior to accommodation and the incumbent will remain the sole active group, although the entry threat distorts its effort upward. The only difference with a standard, industrial organization model of entry deterrence is that here the groups are not faced with cash

market demand for their product; rather, like in a commons, they go out “fishing” for members through missionary effort that exhibits diminishing returns.

In the first application, the focus is the Gentile mission market and the incumbent is Christianity, which began very early to proselytize among the “God-fearers” and other Gentiles attached to the synagogues of the Mediterranean Diaspora. The potential entrant is Judaism, which had the potential to counter its rival by stepping up its missionary effort. The incumbent’s strategic precommitment is the epoch-making decision by the apostle Paul that the Law was not henceforth to be binding on Gentiles who converted to Christianity. The exogenous event that changed the Jews’ entry cost in this mission market was the Destruction of the Second Temple in CE 70. We will argue that it was Paul’s strategic choice, not the war disaster per se, that drove the rabbis to withdraw from the contest.

The second application has Catholic Europe during and after the religious wars sparked by the Reformation as the potential mission market. The Catholic Church had successfully put down all heresies for a thousand years thanks to the strong arm of the European monarchs. But then the Hussites in Bohemia, followed by the Lutherans in Germany, and then by a string of ever more radical dissidents managed to secure the protection of princes and kings powerful enough for them to escape retribution, hold the Empire in check, and establish independent churches in a number of states. In the mid-sixteenth century, who could tell how far would the contagion spread? After a century of wars, with the peace of Westphalia (1648) the religious borders of Europe were again relative secure and the church could again enjoy a monopoly in the territories it retained, but who could tell whether this was to be a lasting arrangement? What if the twists and turns of international power relations should some day again grant safe protection to some fresh Protestant outburst from within or without? Faced with this problem, the church decided to flood the religion market in its domains with excess capacity to an extent that no entrant could possibly match. This was the work of the Counter-Reformation: binding obligations on the ordinary members for sacraments and mass attendance, seminary education for priests, promotion of new, militant religious orders starting with the Jesuits, promotion of militant lay organizations (especially, the Marian congregations) to police the rank-and-file, centralization of the saint-making process at the Vatican. Enough with the empty churches, the illiterate priests, and the lax morality of the Middle Ages. As a result, Protestant missionizing in broad daylight in Catholic Europe did not start again until after World War II.

The next section of the paper lays out the model. The following two sections discuss the Jewish and the Protestant cases, respectively, as a test for the model's predictions. The final section concludes.

2. The model

The two players, the incumbent (I) and the entrant (E), derive benefits, B , from membership in their group, M . Membership is acquired through missionary effort, x , which carries a constant marginal cost, w . Because the total population is fixed and membership growth involves addressing people who are increasingly more difficult to convert, missionary effort exhibits decreasing returns, so that the membership function $M(x)$ is strictly concave. Each group's membership is proportional to the group's share in total missionary effort, $x \equiv x_E + x_I$. Suppose for now that marginal cost of effort, w_E , is the same for both groups. Then the benefit functions are:

$$B_I = \frac{x_I}{x} M(x) - w_E x_I \quad (1)$$

$$B_E = \frac{x_E}{x} M(x) - w_E x_E - F \quad (2)$$

where F is a one-time, fixed cost that the entrant incurs if it decides to enter. Strict concavity of $M(x)$ ensures these benefit functions are strictly concave in own effort levels.

Differentiating equations (1) and (2) with respect to each player's own effort, given the other player's effort, yields the following conditions for optimal effort:

$$\frac{\partial B_I}{\partial x_I} = \frac{x_I}{x} \frac{\partial M}{\partial x} + \frac{x_E}{x} \frac{M}{x} - w_E = 0 \quad (3)$$

$$\frac{\partial B_E}{\partial x_E} = \frac{x_E}{x} \frac{\partial M}{\partial x} + \frac{x_I}{x} \frac{M}{x} - w_E = 0 \quad (4)$$

Thus, as in a common-property resource, each group's effort level is such as to equate marginal cost to a weighted average of average and marginal product of effort.

Equations (3) and (4) implicitly define the two groups' best-response functions, $x_I(x_E)$ and $x_E(x_I)$ respectively. It can be shown (see the Appendix) that these functions are

everywhere downward sloping if $M(x)$ is sufficiently concave. It will be assumed throughout that this is the case.

If marginal cost w_E is the same for both groups and $F = 0$, we get a completely symmetric Nash equilibrium satisfying (3) and (4), with equal membership shares and equal benefits. Even if $F > 0$ but $B_E > 0$ at the equilibrium, entry will occur and yield equal shares, though not equal benefits. In our setting, however, the incumbent moves first and, anticipating the threat of entry, can credibly precommit to a given level of effort if entry occurs. As a consequence of such pre-emptive “capacity expansion”, the incumbent’s marginal cost falls to $w_I < w_E$. This precommitted effort level, joined with the lower marginal cost, can be such as to either deter entry or accommodate the entrant to the incumbent’s best advantage, whichever is more profitable to the incumbent. The first option leaves the incumbent as the sole active group in the mission market, though its effort level is distorted upward by the entry threat; the second option places the incumbent in the position of a Stackelberg leader. We will characterize the two equilibria and compare the incumbent’s benefits in each.

The incumbent’s ability to precommit effort turns the game into a three-stage entry game. The timeline is as follows:

Stage 1. The incumbent I chooses its own effort level for the post-entry stage, \bar{x}_I , at unit cost w_E .

Stage 2. The potential entrant E decides whether to enter, at unit cost w_E and fixed entry cost F , or stay out.

Stage 3. If E enters, the two players simultaneously choose effort levels x_E and x_I under Nash behaviour. Marginal cost of effort is w_E for the entrant; for the incumbent, it is $w_I < w_E$ up to \bar{x}_I and infinite afterwards. That is, the incumbent enjoys a cost reduction thanks to its precommitted effort level \bar{x}_I but cannot exceed it. If E does not enter, then I is a monopolist.

We solve the model backward to determine the subgame-perfect Nash equilibrium.

Stage 3: Effort competition after entry.

The entrant’s best-response function, $x_E(x_I)$, is still defined by equation (4) above, as in the case of simultaneous effort choice. However, the incumbent’s effort response is bound by the previously chosen effort level, whose cost is now sunk; up to that level, its marginal cost is only w_I . So for given levels of x_E , group I’s best-response function is defined by

$$\frac{\partial B_I}{\partial x_I} = \frac{x_I}{x} \frac{\partial M}{\partial x} + \frac{x_E}{x} \frac{M}{x} - w_I = 0 \quad \text{up to } x_I = \bar{x}_I \quad (3')$$

The Nash equilibrium, defined by (4) and (3'), is thus determined by the incumbent's \bar{x}_I chosen prior to E's entry. Since the incumbent will have an incentive to expend all the effort whose cost will already have been borne in Stage 1, this previous effort choice will be such as to be binding at the Stage 3 Nash equilibrium, i.e. at this equilibrium $x_I = \bar{x}_I$. Figure 1 depicts the equilibrium in Stage 3.

(Figure 1 about here)

Point A is the symmetric Nash equilibrium without first-mover advantage. By prior choice of \bar{x}_I and consequent outward shift of its reaction function, the incumbent can get the post-entry Nash equilibrium (such as point N in the figure) to lie anywhere between points A and B on the entrant's best response function $x_E(x_I)$. (Point B would be the Nash equilibrium if $\bar{x}_I > x_B$, i.e. if \bar{x}_I were not binding.) Point Z is where the entrant's benefits (equation 2) are zero. Entry will occur if, as shown in the figure, the entrant expects the post-entry equilibrium N to lie to the left of point Z. If, given the effort \bar{x}_I chosen by the incumbent in Stage 1, the entrant expects N to lie to the right of Z so that $B_E < 0$, it will stay out and the incumbent will be a monopolist in Stage 3, enjoying whatever benefits are associated with \bar{x}_I .

Stage 1: The incumbent's strategic effort choice.

To choose its optimal effort commitment, \bar{x}_I , the incumbent will compare its benefits from entry accommodation to those from entry deterrence.

The accommodation option yields a Stackelberg equilibrium in which the incumbent chooses a level of effort, x_I^S , that maximizes its benefits (equation 1) subject to the constraint of the entrant's best-response function (equation 4). After some manipulation, the first-order conditions for this problem yield:

$$\frac{\frac{x_I}{x} \frac{\partial M}{\partial x} + \frac{x_E}{x} \frac{M}{x} - w_E}{\frac{x_I}{x} \left(\frac{\partial M}{\partial x} - \frac{M}{x} \right)} = \frac{x_E \frac{\partial^2 M}{\partial x^2} + \frac{(x_I - x_E)}{x} \left(\frac{\partial M}{\partial x} - \frac{M}{x} \right)}{x_E \frac{\partial^2 M}{\partial x^2} + \frac{2x_I}{x} \left(\frac{\partial M}{\partial x} - \frac{M}{x} \right)} \quad (5)$$

plus equation (4).

The RHS of equation (5) is (the numerical value of) the slope of the entrant's best-response function, $x_E(x_I)$, while the LHS is (the numerical value of) the slope of the incumbent's iso-benefit contours. Thus condition (5), together with constraint (4), describes a point of tangency between the entrant's reaction curve and one of the incumbent's iso-benefit curves. Given our assumptions on $M(x)$, the denominators on both sides are negative. Since effort precommitment enables the incumbent to shift the equilibrium to the right of the symmetric Nash equilibrium (point A in Figure 1) that satisfies (3), the numerator on the LHS of (5) must be negative, which in turn implies that $x_I > x_E$ and the numerator on the RHS must be negative too. This means that the incumbent's optimal effort, x_I^S , is larger than it would be at a Nash equilibrium without strategic precommitment¹.

The entry deterrence equilibrium is the solution to the following problem. The incumbent precommits to a level of effort, x_I^Z , such that the entrant's best response x_E , satisfying equation (4), also satisfies:

$$B_E = \frac{x_E}{x} M(x) - w_E x_E - F \leq 0 \quad (6)$$

That is, the best the entrant can do after entry is to achieve nonpositive net benefits. If we assume for convenience that in the borderline case $B_E = 0$ the entrant stays out, then equations (4) and (6) together characterize the deterrence equilibrium.

As equation (6) shows, this equilibrium hinges on the exogenous entry cost F . There are two opposite cases in which the solution is trivial: at one end, F is either zero or so low that entry occurs anyway and deterrence is impossible (then point Z would be to the right of point B in Figure 1); at the opposite end, F is so high as to make entry unprofitable anyway, even if the incumbent ignores the threat and behaves as a monopolist (then point Z would be to the left of point S in Figure 2 below). The problem becomes interesting in the intermediate range of F values for which deterrence is a feasible strategy, but not necessarily a profitable one for the incumbent. The incumbent's decision as to which strategy to choose then depends on the comparison of its net benefits in the two equilibria.

¹ The Stackelberg value x_I^S could be larger than x_B in Figure 1, since, given $w_I < w_E$, at x_I^S the numerator of LHS of (5) is negative but the incumbent's post-entry reaction function in (3') can take on any sign. If $x_I^S > x_B$ a commitment to expend x_I^S effort after entry would not be credible and the Stage 3 equilibrium would be at $\bar{x}_I = x_B$. We disregard this possibility in what follows and assume $x_I^S \leq x_B$.

To gain insight into such a comparison we need an explicit solution to the model, hence we turn to a specific form of the membership function:

$$M(x) = x - x^2 \quad (7)$$

This quadratic form satisfies the concavity assumptions and, further, guarantees that the best-response functions are downward sloping and, specifically, linear. We need only solve for the Stage 1 equilibria.

With this function, equations (4) and (5), which define the Stackelberg equilibrium, become respectively:

$$\frac{\partial B_E}{\partial x_E} = 1 - 2x_E - x_I - w_E = 0 \quad (8)$$

$$\frac{1 - 2x_I - x_E - w_E}{-x_I} = \frac{1}{2} \quad (9)$$

Solving (8) and (9) for the Stackelberg effort values yields $x_E^S = \frac{1 - w_E}{4}$ and $x_I^S = \frac{1 - w_E}{2}$. The corresponding benefits are $B_E^S = \left(\frac{1 - w_E}{4}\right)^2 - F$ and $B_I^S = \frac{1}{2}\left(\frac{1 - w_E}{2}\right)^2$. It turns out that the incumbent's Stackelberg effort x_I^S coincides with its monopoly effort² – the level it would choose if it were unchallenged, which is obtained from equation (3) using (7) and setting $x_E = 0$.

The entry deterrence equilibrium (at point Z) satisfies equation (8) and equation (6), which now becomes:

$$B_E = x_E(1 - x) - w_E x_E - F = 0 \quad (10)$$

Solving (8) and (10) yields $x_I^Z = 1 - w_E - 2\sqrt{F}$. With this value and $x_E = 0$, the incumbent's benefits are $B_I^Z = 2\sqrt{F}(1 - w_E - 2\sqrt{F})$.

Entry deterrence is thus a superior strategy for the incumbent if:

² This is due to the symmetry of the Nash equilibrium in Stage 3 and to the linearity of the best-response functions under specification (7). Of course benefits are different. This special feature is inconsequential for our results.

$$B_I^Z - B_I^S = 2\sqrt{F}(1 - w_E - 2\sqrt{F}) - \frac{1}{2}\left(\frac{1 - w_E}{2}\right)^2 > 0 \quad (11)$$

Straightforward differentiation shows that this difference, $B_I^Z - B_I^S$, monotonically increases as F increases whenever $B_E^S > 0$, that is, when the Stackelberg point S is on the left of point Z as shown in Figure 2; in the opposite case, $B_E^S < 0$, entry would not occur. The intuition is that an increase in F shifts point Z to the left and hence decreases x_I^Z , i.e. it reduces the overcommitment of effort that is necessary to keep the entrant out, and this is profitable as long as $x_I^Z > x_I^S$. To look at it from another angle, we have just seen that with the present functional specification the unconstrained monopoly effort coincides with the Stackelberg effort, $x_I^M = x_I^S$. The corresponding monopoly benefits are $B_I^M = \left(\frac{1 - w_E}{2}\right)^2$. Simple algebra readily shows that $B_I^M > B_I^Z$ whenever $x_I^M \neq x_I^Z$. If $x_I^M > x_I^Z$, entry is blockaded and we get the monopoly equilibrium. If $x_I^M < x_I^Z$ (as in Figure 2), deterrence is possible by the incumbent's precommitting x_I^Z , the level of effort corresponding to point Z , which is in turn inversely related to the entry cost F (see above). This choice problem can be evaluated by comparing x_I^Z with \hat{x}_I , the level of monopoly effort that would leave the incumbent with the same benefits as at the Stackelberg equilibrium. Although the equation $B_I(\hat{x}_I) = B_I^S$ cannot be explicitly solved for \hat{x}_I , since B_I^Z monotonically falls as x_I^Z increases and hence as F falls³, it follows that $B_I^Z > B_I^S$ as long as $x_I^Z < \hat{x}_I$, as illustrated in Figure 2.

(Figure 2 about here)

This proves that a sufficiently high level of entry cost F triggers the superiority of the deterrence strategy over the accommodation strategy. However, the overcommitment result deserves emphasis. Even though with $x_I^Z < \hat{x}_I$ entry deterrence is optimal and the incumbent remains the sole active group, its level of effort is distorted upward by the threat of entry, relative to the outcome that would obtain in case of secure, unchallenged monopoly.

³ $\partial B_I^Z / \partial F > 0$ if $x_I^Z = 1 - w_E - 2\sqrt{F} > 2\sqrt{F}$. This is always true for $x_I^Z > x_I^M$, or $1 - w_E - 2\sqrt{F} > (1 - w_E)/2$, because the latter implies $(1 - w_E)/2 > 2\sqrt{F}$.

3. Ancient Jewish proselytizing: The Destruction and Christian competition

Historical research on Jewish proselytizing and conversion in antiquity is very controversial. For much of the 20th century the consensus view was that the Judaism of the late Second Temple period was actively and successfully proselytizing across the Mediterranean, while following the Destruction in 70 CE, rabbinic Judaism withdrew upon itself and gave up seeking converts (Harnack 1908, Moore 1927, Baron 1957). In recent decades this view has been challenged on both sides: some scholars now hold that conversions and proselytism continued well beyond the Destruction and even into the Middle Ages (Feldman 1993), while others (perhaps the majority?) argue that Judaism was really never proselytizing at any time (Goodman 1994, Cohen 1992, McKnight 1991).

The issue is fraught with difficulties on at least two counts: first, the meaning of conversion, or what “becoming a Jew” would mean in those times; second, the problem that conversion and proselytizing are two different things, the first implying only that Gentiles “become Jew” in some sense, the second suggesting that the born Jews take action and seek out converts. To this outsider, both problems, while interesting in themselves, seem peripheral to the main concerns of this paper. On the first problem, it seems clear that there were large numbers of Gentiles attached to the synagogues, especially in the Mediterranean Diaspora, who were not full converts, typically not undergoing circumcision. In the post-Destruction period these “sympathizers” were called “God-fearers”, although it is not clear that these people were already seen as a distinctive group in earlier times. They were certainly welcomed by the born Jews as social support and as reassurance that Israel was indeed “a light to the nations” (Isaiah 49: 6). The key to the uncertainty surrounding the issue is probably that neither Jews nor Gentiles had any interest in sorting out membership criteria or specifying a theology of conversion until the end of the first century CE, when the “Jewish tax” (*fiscus Judaicus*) that the Roman government began to levy after the war as a replacement for the Jews’ traditional contribution toward the Temple required a clarification of who was liable to pay it (Goodman 1994, pp. 120-125).

As for the problem of proselytizing, there is no extant record of the ancient Jews having sustained an organized missionary effort at any time; the sources do not mention either names of missionaries or the existence of any Jewish institution to that end. The strongest piece of “evidence” usually alleged to buttress the claim that the early Christians built upon, and continued, the Jews’ earlier mission to the Gentiles – Jesus’ famous invective against the Pharisees who “cross sea and land to make a single convert” (Matthew 23: 15) – may in fact be no evidence at all. Goodman (1994, pp. 69-74) makes

the intriguing suggestion that this may well refer to a mission to the Jews, not the Gentiles, to win converts to the Pharisee sect, not to Judaism in general. Alternatively, McKnight (1991, pp. 106-107) suggests that those Pharisees were intent on turning Gentile half-converts or God-fearers into full converts to the law; that is, Jesus' argument here is similar to Paul's in Galatians. Furthermore, the two aspects – the vagueness of the requirements for conversion and the lack of evidence for an active proselytizing mission – are related; as McKnight (1991, p. 88) remarks, “the *absence* of firm data regarding initiation is an argument, albeit from silence, that Judaism was not a missionary religion. (.....) had Judaism been aggressively involved in converting Gentiles, there would have been greater attention to entrance requirements”.

However, what concerns us here is the simple, undisputed fact that the synagogues of the Second Temple period, particularly in the Diaspora, were open to outsiders and that the Jews were pleased to welcome new members into their communities, even if the initiative came from the would-be convert, not from the converter, and whatever the degree of “Jewishness” of these people and their exact status within the Jewish communities in the first generation (with the second generation, circumcision of the newborn boys would resolve the ambiguity). If by this process of “soft mission” recruitment of Gentiles occurred on a sustained basis, this would count as a successful mission, and would show up in the statistical data available.

On the other hand, by the turn of the second century, or about a generation after the Destruction, Jewish attitudes toward Gentile conversion began to change. For one thing, the prohibition of circumcision of non-Jews enacted by the emperor Hadrian at the time of the Bar Kochba revolt (around 135 CE) must have raised the cost of Gentile recruitment. For another, the rabbis began to work out the doctrine of the Noachide covenant, binding on Gentiles, which would logically make conversion unnecessary and proselytism pointless by granting righteous Gentiles a place in the kingdom of God (Goodman 1994, pp. 148-149). Since for this period we have no figures whatsoever and no sources other than the Roman legislation and the Mishna and Talmud, and granted that the old attitudes probably lingered on as the Palestinian rabbis had formally no authority, let alone control, over the Diaspora synagogues, it seems a fair, if prudent, guess to conclude that proselytism gradually subsided. By now the grey area between paganism and Jewishness had been cleared away, conversion was now costly for both parties, and the missionary monotheism of the competition – the Christians – was daily gaining ground. In these conditions, passive, soft, unobtrusive mission in the old style would no longer do: the stark choice for the Jews was either to come out and actively missionize or give up. The makers

of the new, post- Temple Judaism – the rabbis – chose to withdraw, and the Noachide covenant doctrine testifies to it.

If the evidence for the dying out of proselytism in the later period is of necessity only circumstantial, the evidence for its occurrence in the Second Temple period is somewhat harder, though still conjectural. The best guess we have, put forward by Harnack (1908, pp. 1-8) and still apparently accepted by the scholars, is a total number of Jews in the Roman Empire of the early first century of 4,200,000, or about 7% of a total population estimated at 60 millions. Harnack himself claimed that such a number could not possibly be accounted for except by extensive conversion. Historians routinely cite this estimate and evaluation, with varying degrees of confidence, without however, amazingly, ever drawing out the implications for growth. We now turn to these implications.

To keep on the safe side, let us take a conservative round figure of 4 millions for the early first century. Ideally, we would want to be able to compare this number with the number of Jews in the early third century BCE, when the Diaspora began, but we have no clue to such number. So we are forced to go back to the return from the Babylonian exile at the close of the 6th century, when we are told that 42,360 people returned to Judea to rebuild the Temple, accompanied by 7,337 servants and 200 singers (Ezra, 2: 64-65); these servants must be counted in as Jewish converts since a pagan domestic slave would infringe the purity laws about food and dining. So we start with a round figure of 50,000 people by about 500 BCE. In the course of 500 years to year 1 CE, this number multiplies by a factor of 80, to 4 millions. The implied average compounded rate of growth is 0.88 % per year⁴. At this annual rate, the population doubles in 80 years.

It must be stressed that over a very long-term horizon of five centuries, an annual growth of 0.88 % is very high for antiquity – as indeed for most of human history. For comparison, we have two sets of estimates for world population. Biraben (1980) gives 162 m. for BCE 400, 231 m. for BCE 200, 255 m. for CE 1; this implies an annual rate of growth of 0.19 % for the first time bracket and 0.05 % for the second bracket. McEvety and Jones (1978) give 100 m. for BCE 500, 150 m. for BCE 200, 170 m. for CE 1; this implies an annual rate of 0.14% for the first bracket and 0,064 % for the second bracket.

⁴ Baron (2007, p. 383) estimates that the population of the kingdom of Judah (including Jerusalem) at the time of the destruction of the First Temple (586 BCE) was 150,000; the Babylonians may have deported only the social and priestly elite but the countryside appears to have remained deserted and without religious leadership, so it is not safe to start from that number if we mean actual Jews. Baron (*ibid*, p. 384) then suggests that given the initially small size of the Second Commonwealth, “even adding to (the 50,000 returnees) a number of survivors from the pre-Exilic period, the population of the Commonwealth could not have amounted to much more than 60,000–70,000.” If we take 70,000 as our starting number for 500 BCE and redo the calculations, we find an annual rate of growth of 0.82%, a small difference from the calculation in the text.

Thereafter, according to both studies, world population stays roughly constant for the first 600 years CE; this accords with the perception of Roman historians, who seem to agree that the total population of the Empire remained at about 60 millions from Augustus to the end of antiquity. Unfortunately, we have no clue for population levels or growth in the Mediterranean region in the last centuries BCE. If we assume, for want of better measures, that the world growth rates given above apply to this region as well, which is conceivable, and if we take the last 200 years BCE as perhaps the most meaningful comparison, we find that the Jewish rate of growth exceeds average growth by 0.82 – 0.83 % per year. This is a substantial gap.

It has been claimed (Goodman 1994, p. 84; Feldman 1993, p. 293) that the higher growth of the Jewish population may be due to cultural factors that made the Jews unique in ancient society. These are: better hygiene, due to the purity laws; the aversion to infanticide, abortion and contraception; the solidarity and charitable support extended by Jewish communities to the orphan, the widow, the sick, and the needy among their ranks. These factors together would have reduced mortality, and especially infant mortality, and thereby enhanced demographic growth. Nevertheless, lacking any clue beyond plausibility, it seems difficult to believe that these factors alone, though real enough, can fully account for the magnitude of the gap. So we are drawn to the conclusion that the proselytizing of Gentiles did occur, and that it was substantial in size and sustained through time enough to make a difference. Some scholars (e.g. Baron 2007, p. 384) stress that some of this growth was due to forced conversion, when the Hasmonean kings conquered the Idumaeans and Ituraeans in the course of their territorial expansion; the forced nature of these conversions is disputed (see Goodman 1994, pp. 75-76), but even if accepted, it cannot possibly account for the magnitude of the phenomenon. Finally, it has often been pointed out that some of the growth is clearly due to intermarriage with Gentiles and to the conversion of slaves; even so, both means of conversion point to the penetration and expansion of the Jews into Gentile society.

If that is the case, then the discontinuation of such a successful enterprise, which was by no means inevitable (see just below), calls for explanation. Two answers suggest themselves: the Destruction of CE 70, magnified in short order by the two disastrous Jewish revolts of CE 116-117 and 132-135, and the competition from Christianity. Hopefully, our model can shed some light on this problem.

It is not clear that the Destruction and its aftermath, by itself, should necessarily drive the Jewish leaders away from Gentile proselytism. This landmark event cut both ways, especially with the passage of time. On the one hand, it made a potential Gentile mission more costly: the Jewish tax and its assessment hardened the boundary between

Jew and Gentile, and a generation later, in the 130s, came the prohibition of circumcision of non-Jews. This last point, however, was significant only if circumcision was to be retained as a rite of entry into the house of Israel. But, on the other hand, the purity laws that comprised so much of the halakah were now largely irrelevant as the Temple was no more, and as hopes of its imminent rebuilding faded after the accession of emperor Nerva in 96 CE (Goodman 1994, pp. 44-46); so the Gospel writers, writing in the last third of the century, engaged in overkill when they poured scorn on the purity laws (Fredriksen 1999, pp. 197 ff.). In principle, then, the Jewish leaders *could* have yielded, relaxed the laws – perhaps even relaxed the circumcision requirement – and thereby made entry easier for Gentiles. In other words, the Destruction presented the Jews with an unprecedented opportunity: to become a universal religion, stripped of ethnicity.

What prevented this from happening and tipped the balance toward the withdrawing from proselytism was the success of the Christian mission to the Gentiles. In the forties, Gentiles were flocking to the new Christian sect in increasing numbers in the Diaspora synagogues whereas the born Jews lagged behind. At this point, about 50 CE with the letter to the Galatians, Paul took the epoch-making step of declaring that fulfilling the Law was not necessary for Gentiles to fully become Christians. Fredriksen (1991, p. 558-562) explains that such a step, paradoxically, was thoroughly, consistently *Jewish*: both established practice and scripture had been allowing Gentiles into the synagogue without requiring circumcision; the “startling novelty” (p. 559) was not Paul’s but the “false brethren” proposal that those Gentiles should fully convert, perhaps to hasten the tarrying arrival of the Kingdom. Be that as it may, this fateful step was taken before anyone concerned knew of the upcoming destruction of the Temple with all its consequences, so that the Jewish leaders after the Destruction, when it would have become feasible for them to start on the same path, found themselves overwhelmed. For them to start a sustained, aggressive Gentile mission would have required to reconsider all the clauses of the Law one by one and cherry-pick those that were dispensable; for the Christians, by contrast, the door to a faith-based religion, free from levitical purity rule, was now wide open and did not require piecemeal adjustment. No wonder, then, that the rabbis gave up.

In terms of the parameters of our model, the Galatians turning point amounted to a precommitment of missionary effort that was calibrated on the traditional Jewish Law, which was then in full force. Even though, give the tradition of open synagogues and interaction with Gentile sympathizers, aggressive Jewish entry into the Gentile mission market would have been possible in the absence of strategic investment by the Christians, the entry cost for Judaism was then high enough to make the deterrence strategy superior

for the Christians. With the fall of the Temple that cost came down somewhat, but not enough to overcome the first-mover advantage built up by Christianity. Had it been otherwise, the Western world today might well be largely Jewish.

Appendix

Implicit differentiation of equation (4) in the text yields the following expression for the slope of best-response function $x_E(x_I)$:

$$\frac{dx_E}{dx_I} = - \frac{x_E \frac{\partial^2 M}{\partial x^2} + \frac{(x_I - x_E)}{x} \left(\frac{\partial M}{\partial x} - \frac{M}{x} \right)}{x_E \frac{\partial^2 M}{\partial x^2} + \frac{2x_I}{x} \left(\frac{\partial M}{\partial x} - \frac{M}{x} \right)}$$

Strict concavity of $B_E(x_E)$ (equation 2) ensures that the denominator is negative. The numerator is certainly negative if $(x_I - x_E) \geq 0$ (which includes the symmetric Nash equilibrium). Otherwise it will be negative if $\left| \frac{\partial^2 M}{\partial x^2} \right|$ is large enough, i.e. if $M(x)$ is sufficiently concave.

The analysis of the slope of $x_I(x_E)$ is analogous.

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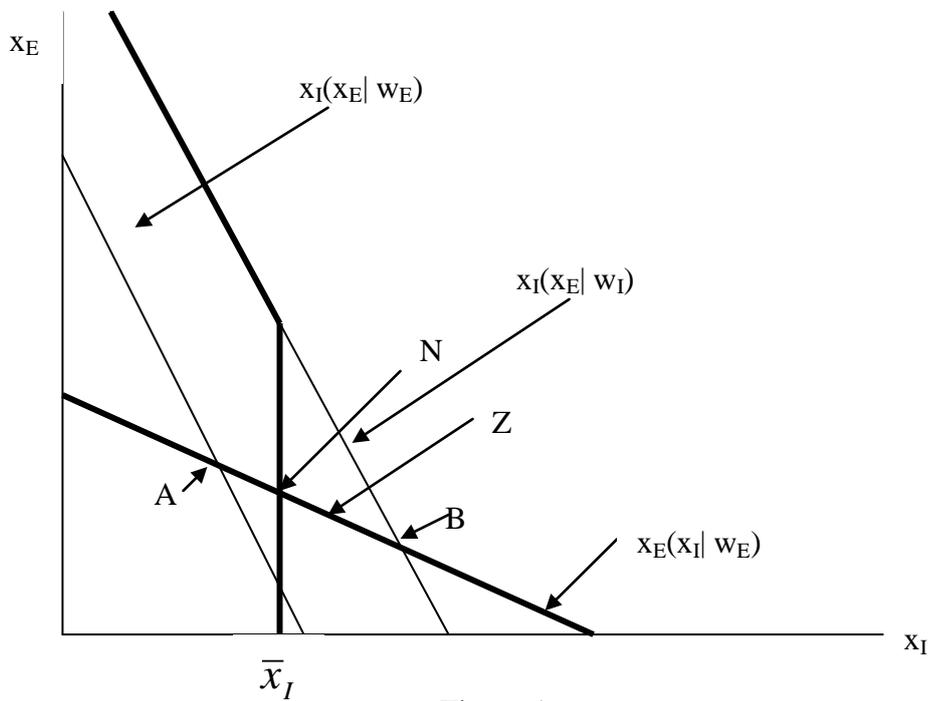


Figure 1

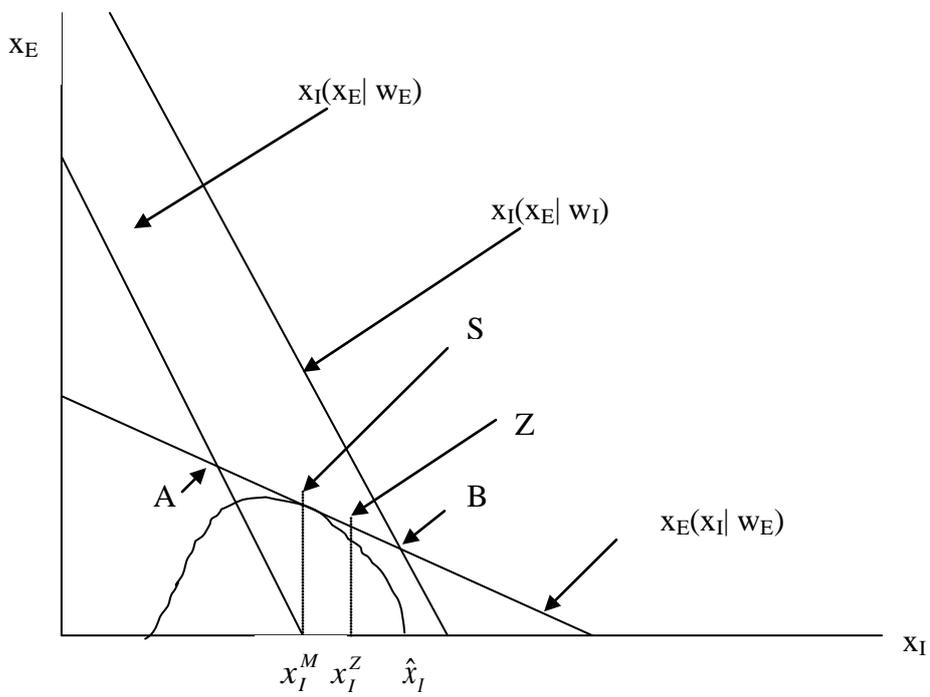


Figure 2