Reply to "generalizations"

I thank the anonymous author of "generalizations" for his very valid and helpful comments. My paper was meant at a first approach to the analysis of predatory pricing in a very simply vertical differentiation model. I turn now to the specific points which the author of "generalizations" raised.

1&2) I'm totally agree with the author of the comments when he says that quality choice is a central issue in a vertical differentiation context. However, the focus here is on the effects of predatory pricing, and not on quality equilibria. In my opinion, allowing for endogenous choice of quality will add complexity to the paper without changing the nature of the results.
To see why, suppose that the following stages come *before* the timing outlined in the paper.
1) the incumbent chooses the quality
2) the incumbent chooses the pricing policy
3) the entrant (if enters) chooses the quality
Clearly, since qualities are chosen before prices, result 1 does not change when the quality is endogenous, since result 1 has been obtained with general quality levels for the two firms. Therefore, there are always conditions under which the entrant has the incentive to keep low price in order to discourage the incumbent from preying it. In this sense, the result that "an entrant may use sufficiently aggressive pricing to prevent the incumbent from predatory pricing of his product" does not depend on the exogeneity assumption.
Consider now the pricing policy choice by the incumbent. When the incumbent chooses the pricing policy, it anticipates the quality that will be rationally chosen by the entrant. Let define with $s_L^D *$ the equilibrium quality chosen by the entrant when the incumbent has chosen to discriminate at stage 2. The optimal quality level by firm E may be such to induce the no-predation equilibrium or the "fight-to-survive" strategy[1]. From the point of view of firm I, the reasoning is the same as in the paper. It faces the following alternatives: discriminate or not discriminate. If no quality levels of firm E exists which impedes predation, firm I chooses discrimination at stage 2; if $s_L^D *$ induces the no-predation equilibrium, firm I chooses discrimination.; if $s_L^D *$ induces the "fight-to-survive" strategy, firm I *may choose* to renounce to price discriminate at stage 2, depending on the aggressiveness of the equilibrium "fight-to-survive" strategy. Therefore, the result that the incumbent may be willing to commit to uniform pricing in order to avoid a price war is maintained under endogenous quality choices.
However, I thank the author of the comments for raising this issue: I will provide the amended version of the paper with a briefly discussion about the implications of quality endogeneity.

3) I'm conscious that my analysis applies to the case of variable costs of improving quality. As the author of the comments correctly points out, assuming variable costs instead than fixed costs is likely to generate different results. This is a well-known problem in the vertical differentiation literature. In fact, papers in this field adopt either variable costs or fixed costs in their analysis. Among the papers adopting variable costs there are, for example, Gal-Or (1983), Crampes and Hollander (1995) and Encaoua and Hollander (2007); among the papers adopting fixed costs there

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[1] Clearly, it may also be possible that no quality level exists that allows firm E to avoid predation: in this case firm E does not enters. Whether $s_L^D *$ induces the no-predation equilibrium or the "fight-to-survive" strategy is not an obvious issue, once one takes into account that also Γ depends on the quality choice of the entrant. If the optimal quality level in the case of no-predation falls within the set of the quality levels inducing the no-predation equilibrium, firm E will choose such quality level. However, it may be that in order to induce the no-predation equilibrium firm E is forced to choose a less preferred quality level. In this case, it cannot be said *a priori* whether the entrant prefers a quality level inducing the no-predation equilibrium or the "fight-to-survive" strategy. In other words, firm E may prefer to induce the "fight-to-survive" strategy than inducing the no-predation equilibrium if this requires choosing a strongly sub-optimal quality level.

are, for example Bonanno (1986), Liu and Serfes (2005) and Lambertini and Tedeschi (2007). Here I follow the first approach, which better fits the industries where quality improvement depends on more skilled labour or more expensive materials (conversely, fixed quality costs better describe industries where quality improvements mainly depend on R&D expenditures, see on this issue Motta, 1993). However, as the author of the comments suggests, in a corrected version of this paper I will further stress my variable cost assumption and its consequences on the generality of the results.

4) My explanation of the firms' strategy spaces is the following. The entrant is low-quality because – as Lehmann-Grube (1997) shows – in a sequential game where a leader chooses quality, then a follower chooses quality, and finally firms compete on prices, the leader chooses the higher quality (see my footnote 2). Moreover, the entrant is more likely than the incumbent to set a uniform price because – as Encaoua and Hollander (2007) argue – "*adoption of discriminatory pricing by the incumbent reveals information about buyers' reservation prices that the entrant cannot possess. Then entrant is more likely – at least initially – to set a uniform price, or divide consumers into fewer classes for pricing purposes than the incumbent*" (see my footnote 1). I'm not convinced that the entrant can price discriminate like the incumbent does, because, as the quotation above stresses, the entrant cannot know the willingness to pay of the consumers like the incumbent, due to the fact that the entrant is *outside* the market while the incumbent is *in* the market. Finally, my assumption that the entrant is first mover in the price game is a direct consequence of the assumption that the entrant prices uniformly, and it is deeply rooted in the price discrimination literature, as I argue in footnote 5.