File 20100717.2058: Notes from recorded lecture by Benjamin Polak of Yale, on `academicearth.org`:

Say there are two firms, A and B, producing similar products and selling into the same market. A would ideally like B to product fewer products, so that A gets more of the business, and vice-versa. A has a cost of production, which may be high, medium, or low. So does B. If I am producing a product in competition with another firm, and I have low costs, I want to reveal that information to the other firm (because it will induce the other firm to produce less). If I have high costs, I do not want to reveal that information to the other firm [1]. If I have middling costs, then I *must* reveal, because otherwise I would be mistaken for a high-cost firm, which would induce my competitor to increase his own production, thereby hurting me. Finally, if I have high costs, it is revealed for me, because otherwise if I had been either low cost or middling cost, I would have revealed. So the fact that I am a high cost producer is deducible by my competitors whether I wanted it to be or not. This is a Cournot game.

- If your cost is low, then reveal because it gives you an advantage.
- If your cost is medium, then reveal because otherwise you would be mistaken for a high cost producer.
- If your cost is high, the fact is revealed by the fact that you didn't reveal.

The same argument can be made for n firms, one stage at a time. Informational unravelling. At each stage, some firms will not have been revealed 'yet'. The only form that will never reveal is the firm with absolutely the highest cost.

There is information in the lack of an attempt to reveal information.

Americans have a tendency to put everything on their résumés. It makes Europeans want to vomit.

To get full unravelling, the information must be (a) verifiable, and (b) people must know that the information is available.

For non-verifiable information, the signal must be costly for it to be credible. Subtlety: the cost for the bad workers to assert the signal must be *more* than the cost for the good workers to assert the same signal. The good workers are signalling implicitly that they are better at enduring the pain of the work.

For my paper, I really need to justify the second part of equilibrium: *all* the good workers get MBAs, and none of the bad workers get MBAs. To do this, it is necessary to set the cost of the bad workers getting an MBA and the cost of the good workers getting an MBA in such a way as to make the cost to the bad workers of deviating be more than they would gain from deviating (and hence being identified by the employers as a good worker). The equilibrium is only showable when the costs are arranged this way. To show the equilibrium, show that the required tests are both satisfied:

- No type will deviate.
- The employer's beliefs are consistent with the equilibrium behaviour.

It is called a *separating equilibrium*.

What would happen with a one-year MBA, if the costs remained the same? Answer: it is not an equilibrium any more because the bad workers could get an MBA for a payoff of 40.

We need enough *difference* in costs (pain and suffering) to cause the workers to self-select the way we want them to (to get an equilibrium).

Raising fees would not work. The only way to make a one-year MBA work in this model is to make it reeeeeally hard. You have to separate the good workers from the bad workers.

Lessons:

- To be a successful signal, there must be large *differences* in cost. It must be differentially costly across types. (Reason: you want the types to self-select.)
- If you lower standards (i.e., get rid of the cost difference), you start seeing qualification inflation.
- This is a pessimistic model of education. Why?
  - There is no learning in this model. Your productivity is the same when you come out as when you went in.
  - It is socially wasteful.

– Education in this model increases inequality. It makes the poor poorer. If the MBA school did not exist, bad workers (90 percent of the population) would be paid 32—the weighted mean of 50 for the 10 percent of the population that are likely good workers and the 90 percent of the population that are likely bad workers, if the employers had no way of telling the difference. Because the MBA school exists, bad workers get paid 30 now, not 32.

'For education to work as a separating equilibrium, some children have to be left behind.'

Source: [1].

References

[1] Benjamin Polak. Asymmetric information: silence, signaling, and suffering education. Open Yale courses: `http://academicearth.org/lectures/asymmetric-information`, 2010. Yale University ECON 159: Game Theory lecture 23.