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**The Policy Irrelevance of the Economics of Education:  
Is “Normative as Positive” Just Useless, or is it Worse?**

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*Abstract.* Arguably nothing is more important to long-run improvement in human well being than a high quality basic education for every child and this has been enshrined as a development goal even before there were development goals. Promoting the achievement of this goal around the world requires a serviceable general *positive* model of education policies—a coherent causal explanation of why governments actually do what they do. “Normative as Positive” (NAP) explains that the policies actually chosen were chosen *because* they maximize an aggregate social welfare function. Since NAP is false positive model “policy recommendations” based on NAP will be relevant to the actual process of policy making only by coincidence. Moreover, NAP is potentially worse than useless as it may point the research and “policy” work of economists and educationists in precisely the wrong direction—towards nation-states, technocrats and bureaucrats (or “policy makers”) as the locus for educational reform rather than students, parents, communities, and teachers. The difference between thinking small and thinking big is whether which researchers and policy advisers have a correct positive model of the process of the diffusion of knowledge and innovations. This is equally true of more “rigorous” empirical methods like field and randomized experiments—these techniques are intrinsically no more nor less policy relevant than other research methods—they still must be linked with a plausible positive model of policy and policy change if they hope to have influence at scale.

## Introduction<sup>1</sup>

Economists have an excellent *positive* model of the individual/household demand for schooling—in part because it is a straightforward extension of their positive model of everything else. Utility maximizing people will invest now by sacrificing time, effort and money on education/schooling/training to gain benefits in the future. Schooling choices are dependent on the usual factors of preferences, endowments, technologies, relative prices, and budget constraints. Economists also have an excellent *normative* theory of schooling policy which, again, is a straightforward extension of their *normative* model about the policy everything else. Normative (welfare or public) economics is devoted to the question “what public sector actions would be either (potentially or actually) Pareto improving (by solving a market failure) or, for a given social welfare function, welfare improving (by addressing an equity concern) over the ‘no intervention’ outcome?”

But economists have no general *positive* model of schooling policy. This passage, from the World Bank’s web site on education, is typical of discussions of educational policy:

*“Governments around the world recognize the importance of education for economic and social development and invest large shares of their budgets to education. The reasons for state intervention in the financing of education can be summarized as: High returns, Equity, Externalities, Information asymmetries, Market failure.”*

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In the absence of a positive model the use of *normative as positive* (NAP)—assuming actual governments do what they do *because* of market failure(s) or equity concerns—is an apparently irresistible temptation. When pressed, economists immediately see the obvious mistake of confusing normative *rationales* for actions of a hypothetical welfare maximizing social planner with positive *reasons* for actions of a real public sector, but this doesn't prevent NAP from lurking as the default positive model when economists discuss the “policy relevance” of their work on the economics of education.

In this essay I argue three points.

First, NAP is not a useful first approximation that has some flaws: it has only failures and no real successes. The standard rationales for public sector interventions provided by normative models do not predict *anything* about what governments actually do. NAP does not explain why (1) nearly all governments' support for schooling is “only direct production” as opposed to other instruments (e.g. mandates, subsidies, entitlements, vouchers), (2) why the incidence of schooling is not progressive or the role of displacement effects in public sector supply decisions, (3) the observed productive inefficiency (i) versus private schools, (ii) in the allocation of budget across inputs, or (iii) in the adoption of innovations, (4) the variation across countries in the allocations of public sector support either (i) in total or (ii) across the levels of education (primary versus secondary versus tertiary), (5) the scale of the control of schooling systems.

Second, there exist alternative positive models of schooling policy which do a much better job of accounting for observed policies. Pritchett (2003) develops a simple

alternative positive model, which is a formalization of what everyone, except economists, acknowledges are the important reasons for government engagement in schooling. This model has three simple and obvious features of the “real world”: (a) skills and beliefs are jointly produced in formal schooling, (b) the verifiability of the inculcation of beliefs is very costly and hence there is incomplete third party contracting for schooling, and (c) the “state” as an actor has an ideology and hence cares directly about the socialization schooling provides. I argue this model, which I call State Ideology and Incomplete Contracting on Socialization (SI-ICS, sounds like SIX) can easily explain everything NAP cannot.

Third, if NAP is false then there is no way to defend *positive* claims about the policy relevance of research in the economics of education. There are four distinct claims about the body of empirical work in the economics of education:

- (a) There is a large part of the economics of education that is explicitly about the development of a positive economics of the demand for schooling that has no policy implications even if NAP were true.
- (b) If NAP is not *demonstrated* to be true, there is no way to *prove* the conventional economics of education is not irrelevant to policy as its claims to policy relevance hinges on NAP.
- (c) If, as I argue, NAP is in fact false, it is likely that nearly all of the conventional economics of education, whose policy relevance, if grounded at all, is premised on the truth of NAP, is policy irrelevant (not just cannot be proved to be relevant).

- (d) In alternative positive models of schooling policy economists devoting their time and effort to the conventional economics of education might be *worse than useless* in that economist's pursuit of NAP-relevant research actually *lowers* social welfare by aiding and abetting the adoption of welfare worsening policies.

These four claims about policy relevance are increasingly difficult to defend, but fortunately rejecting the stronger claim does not imply rejecting the weaker. The first claim is obvious (if elided a bit in practice). The second only requires accepting that NAP has not been demonstrated to be true, and most economists easily abandon NAP, but if one jettisons NAP there is no way to defend the claim that research that *would be* policy relevant *if NAP were true* is, in fact, policy relevant even though NAP is false.

The third actually accepts that NAP is false (and again, most economists are willing to concede this) which then implies that whether the conventional economics of education, which addresses questions relevant only within NAP, has no intuitive basis for claims to policy relevance, which depends on asserting a positive model in which one can assess the actual impact of research.

The fourth illustrates that there is no basis for claiming that, even if NAP is false, policy research or "recommendations" that would be welfare improving under NAP are beneficial. There is no reason to believe that the positive model doesn't matter and that "good" recommendations or "good" research has robustly "good" effects on policy or well-being.

The difference between research that is thinking big or thinking small depends in

part of how one imagines the process of the translation of research findings into practice. The phrase often used about innovation is “build a better mousetrap and people will beat a path to your door” reflects a positive mode of the world in which people have a demand for better mousetraps and the key constraint on the adoption of new mousetrap technology is the existence of a demonstrably superior mousetrap. In this case “thinking small” on the engineering of mousetraps is thinking big as the innovation will scale itself (or the mechanisms for scaling exist and are functional). However, if the problem is that educational systems are structured such that there are few, if any, incentives to adopt better mousetraps (or even acknowledge there are mice), few organizational and institutional structures for the dissemination of better mousetraps when discovered then thinking small is just thinking small. Demonstrating the efficacy or lack of efficacy of various new (or old) technical or policy innovations in schooling may have little or nothing to do with whether these will be adopted at scale, it all depends on a postulated positive model of schooling policy, and as part of that, of the diffusion of productivity enhancing innovations.

This potential policy irrelevance of the empirics of the economics of education is not mitigated by the use of rigorous methods, such as randomization. If an empirical parameter is only policy relevant under a given hypotheses ( $H_0$ : NAP is true) that is in fact false, then a more rigorous and precise estimate of that parameter remains just as policy irrelevant—and as unlikely to lead to scaled up impacts—as a less rigorous estimate.

Section I lays out a formal statement of “normative as positive.” Section II lays

out a brief statement of the “State Ideology-Incomplete Contracting on Socialization” model. Section III shows that NAP is completely and utterly without merit and SI-ICS has at least surface plausibility as a positive model. Section IV argues that nearly all existing economics of education, both theoretical and empirical, is not policy relevant. Section V lays out the case that NAP-relevant research is worse than useless, in that it has place economists in the position of being used to support welfare worsening policies.

***I. Normative as Positive (NAP)***

To be a fully specified positive model NAP must explain that policy P is chosen *because* policy P is the *optimal* choice over a suitable aggregation of citizen preferences (social welfare function) over the feasible policy instruments, subject to all the constraints the decision maker faces, for the economic model maintained by the policy maker. Normative analysis shows that, in the presence of a market failure, there exists a potentially large set of policies **P** such that any policy P from this set produces higher maximized social welfare than a policy of “no action.” For NAP to serve as a complete positive explanation of the observed policy, the policy P cannot be just *one of the* possible policies  $P \in \mathbf{P}^{Beats\ no\ action}$  but should be the *optimal* response to the invoked market failure(s)/equity concerns. Without the claim of optimality NAP is underspecified as a positive theory. If NAP only proposed that P was chosen because it was one of many possible policies that led to welfare improvements over “no action” then it would have to be supplemented by another model explaining the choice of the particular policy P from among the set of welfare improving policy instruments.

An analogy with automobiles is perhaps useful. Automobile ownership creates numerous externalities: traffic congestion, safety risks to other drivers, polluting emissions. Almost certainly one could formulate a normative model in which government ownership of car factories and distributors allowed them to address externalities through control of the production and pricing of cars. But as a positive explanation of why a government owned and operated a car factory the answer: “because there are externalities in consumption of automobiles” is obviously inadequate, one would need to show why ownership of factories was chosen over other alternative instruments such as taxes/subsidies or regulation.

A formal statement of NAP requires an objective function as a suitable aggregation of preferences, the policy choice set and constraints, and the maintained economic model of the policy maker.

*Preferences.* The utility of each of the  $C$  citizens depends on: consumption of all non-education goods taken as an aggregate over goods and time, their child’s school, and the schools chosen by their fellow citizens. The utility of the  $c^{th}$  citizen with consumption of non-education goods  $X^c$ , whose child attends the  $j^{th}$  school while the  $C-1$  other citizens attend the (vector of) schools  $j^{-c}$ , can be written as:

$$1) \quad U^c(X^c, j^c, j^{-c})$$

A school is *defined* as a set of skill objectives ( $N_A$  dimensional vector), set of belief/value objectives (dimension  $N_B$ ) and a pedagogical approach to convey those



skills and beliefs (dimension  $N_T$ )<sup>2</sup> so that each school  $j$  is specified as a  $N_A + N_B + N_T$  dimensional vector.

Each citizen's utility from schooling depends on the discrepancies between their ideal and actual schools. Each parent/citizen  $c$  has a different metric ( $\| \cdot \|_c^{A,B,T}$ ) that maps from deviations in each of the sub-vectors of schooling into a single cardinal number, that represents for each citizen  $c$ , the welfare loss from their child being in school  $j$  versus their optimal school in that dimension (some parents might care only about mathematics, others only creativity, others only religious doctrine). The function  $f$  maps from these three sub-components to a single (positive) number.

$$2) \quad j^c = -f^c \left( \begin{array}{l} \|A^{c^*} - A^j\|_c^A \\ \|B^{c^*} - B^j\|_c^B \\ \|T^{c^*} - T^j\|_c^T \end{array} \right)$$

The third component of each citizen's utility is the *direct* effect of ideological choices that *other citizens/parents* make for *their* children. I assume that each citizen  $c$  cares about the *skills* of other citizens' children only insofar as there are externalities that affect citizen  $c$ 's consumption (X). But with beliefs there are two possible effects: one possibility is that beliefs acquired by others may affect  $c$ 's consumption by affecting productivity (e.g. Gradstein and Justman 2000 who assumes homogeneity in beliefs promotes inter-personal trust which promotes higher output) while the other

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<sup>2</sup> I assume all schools are "feasible" such that the pedagogical approach is consistent with production of the skills and beliefs and that this feasibility is common knowledge.

possibility is that citizen  $c$  *directly* cares about other citizens beliefs. The typical citizen  $c$  might not like having other people’s children taught that  $c$ ’s own ethnicity/religion/political beliefs/gender/nationality is inferior or stupid or evil— whether or not these beliefs directly affects  $c$ ’s measured consumption of goods. Exactly how each citizen might care about others beliefs is complex and there is no presumption that the function is linear or symmetric as some citizens may be indifferent (tolerant) in a broad range and yet care strongly when beliefs cross a certain threshold of ideological difference while others may object strongly to even small deviations in certain directions. For simplicity we’ll assume that each citizen  $c$  has a different optimal belief for all others ( $B^{c*}$ ) and has some metric ( $\| \cdot \|$ ) over the  $N_B \times (C - 1)$  stacked vector of ideologies received when children attend schools  $j^{-c}$  (where the notation “-c” indicates a C-1 dimensional vector which excludes c).

$$3) \quad j^{-c} = \left\| \begin{array}{l} B^{c*} - B^{j^1} \\ B^{c*} - B^{j^{c-1}} \\ B^{c*} - B^{j^{c+1}} \\ B^{c*} - B^{j^C} \end{array} \right\|_c$$

*Aggregate Individualized Social Welfare.* The social welfare function aggregates citizen utility. I impose the common constraint that the social welfare aggregation is “inequality averse.” I also impose the common, but often implicit, assumption that the social welfare aggregation is “individualistic.” This imposes that *only* the utility of citizens from their own consumption of goods and schooling is considered in the technocrat’s aggregation of well-being. That is, if citizen  $c$ ’s neighbor

Mr.  $c+1$  plays jazz on his stereo sufficiently loudly that  $c$  can hear it, this is part of  $c$ 's consumption vector and that does enter the technocrat's utility function. But utility from *existence values* are ruled out: citizen  $c$  may dislike it if Mr.  $c+1$  plays jazz (or worships Satan, or tells racist jokes, or watches pornography or is homophobic) at all, *ever*, even in the privacy of Mr.  $c+1$ 's home<sup>3</sup>. The assumption is ubiquitous but usually made implicitly by dropping this element from the specification for individual utility. There is a long tradition of liberal individualism that rules out as inappropriate for policy consideration, all such inter-personal existence values (e.g. envy, prudery, religious intolerance, jealousy, sadism).

In the context of education, I argue the inter-personal concern about beliefs is empirically important, but I want to sharply differentiate policies that can be justified within the *standard* NAP approach using an “individualized social welfare” (ISW) function (which again, many include indirect effects of beliefs via propensity to trust, cooperate that affect consumption via impacts on aggregate production) and those that invoke direct consideration of inter-personal concern about beliefs (which are a subset of the positive models presented below).

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<sup>3</sup> This same distinction is made in the discussion of environmental externalities between *use* values—that I value a clean environment because I may use it someday and *existence* values—that I value the very existence of some unspoiled environment even if I personally never see it.

$$ISW = SW(U^1(X^1, j^1, j^{-1}), \dots, U^c(X^c, j^c, j^{-c})),$$

*Individualistic*

$$4) \frac{\partial SW}{\partial U_1^c} \geq 0, \frac{\partial SW}{\partial U_2^c} \geq 0, \frac{\partial SW}{\partial U_3^c} = 0 \quad \forall c$$

*Inequality averse*

$$\frac{\partial^2 SW}{\partial U_1^c} \leq 0, \frac{\partial^2 SW}{\partial U_2^c} \leq 0$$

***Policy choice set and constraints.*** Policy choices have two elements, the policy instruments under consideration and the constraints on those instruments.

*Instruments.* If the causal explanation of “why policy P?” is that “P was normatively optimal,” then policy P should not just be better than the alternative of “nothing” but should be the *best feasible* policy. So if market failures lead to an inefficiently low level of education with “no intervention”, then there are a variety of possible instruments to raise the level: mandates, entitlements, universal subsidies, targeted subsidies, subsidies to providers, direct production, etc. The feasible policy set is limited by implementation constraints but these should be modeled explicitly either as limitations on the feasible instrument or as constraints on the instrument.

$$5) P \in \mathbf{P}\{\text{set of all feasible instruments}\}$$

*Constraints.* The policy chosen must satisfy a variety of constraints. For instance, any policy that involves positive public expenditures should satisfy the budget constraint—so that expenditures are matched to mobilized revenues. These constraints can also impose feasibility constraints on various instruments: for instance targeted subsidies may be a possible instrument but the efficiency of targeting might be limited by the public sector’s ability to observe household outcomes (e.g. current income might

not be observable). These two elements, feasibility and constraints, are obviously intertwined: if an instrument is included in the choice set, the relevant constraints need to be imposed and if the constraints imply that a certain instrument will never be chosen, this can be incorporated by eliminating the instrument from the feasible set.

6)  $P$  satisfies  $C = \{\text{policy instrument constraints}\}$

*Economic model.* An economic model is a mapping between possible policy actions (including no action) and the resulting equilibrium of the choices by the individual citizens (as consumers and producers) which determines the income/consumption for each citizen and schooling outcomes for each of the  $C$  citizens. This dependency of policy outcomes on the maintained model is denoted by indexing the outcomes by model  $M$ :

7)  $(X^c, j^c, j^{-c}) = X_M^c(P), j_M^c(P), j_M^{-c}(P)$

A great deal is packed into model M—behavioral functions of producers and consumers, market clearing mechanisms, production functions, etc. The standard welfare theorems often specify a general equilibrium model (specifications of production functions, utility functions, behavior of consumers, market clearing) under which no Pareto improving policies exist. A rationale for public sector intervention usually takes the form of some assumption about externalities or other market failure. One common example is argue that governments promote schooling *because* there are externalities to skills (of some type—perhaps literacy). In NAP the relevant model is that model the policy maker believes and hence translates into policy choices.

The “normative as positive” answer to the question: “why did the government do P?” is “because P was  $P_{ISW}^*$  -the optimal feasible policy to maximize the aggregation of citizen preferences ISW under the policy maker’s maintained economic model M, subject to the constraints C.”

8)

*Normative as Positive (NAP): Policy P is chosen because P is  $P^*$ ,*

$$P_{ISW}^*(C, M) = \underset{\mathbf{P}}{\arg \max} ISW(U^1(X_M^1(P), j_M^1(P), j_M^{-1}(P)), \dots, U^C(X_M^C(P), j_M^C(P), j_M^{-C}(P)))$$

*subject to Constraint set C and  $M^{Policymaker} = M$*

**II) *An alternative model: State Ideology-Incomplete Contracting on Socialization (SI-ICS)***

Attacking NAP against an unspecified alternative is easy, but I want to go further and pose a concrete alternative. Nothing in this paper hinges on accepting this

alternative and the reader should feel free to propose their own NAP alternative. But in illustrating the policy irrelevance consequences of NAP it is handed to have a specified alternative model. My alternative combines state ideology and incomplete contracting in the inculcation of beliefs.

If you ask anyone but an economist—either other disciplines (historians, sociologists, political scientists, educationists) or practitioners (educators, politicians)—why governments produce schooling they will refer to the crucial role of schooling in socialization, in the formation of a mass public culture, and in the control of the ideology transmitted. Moreover, this is explicitly what governments *say* they are doing, both historically and today. As an early Meiji era Minister of Education stated: *“In administration of all schools, it must be kept in mind, what is to be done is not for the sake of the pupils, but for the sake of the country.”* Today on the official web site of the Turkish Ministry of Education: *“In this sense, the Turkish education system aims to take the Turkish people to the level of modern civilization by preparing individuals with high qualifications for the information age, who: (a) are committed to Atatürk's nationalism and Atatürk's principles and revolution...”*

An alternative positive model entertains the notion governments really mean what they say (and that in this case other disciplines might actually have it right) and takes the role of socialization as a key function of schooling seriously. This alternative model has two key differences from NAP. First, there is an actor called “the state” which chooses policies. The state has its own objective function which is in general not simply an aggregation of individual preferences (although in a super special case of a

political system that perfectly replicated an aggregation of preferences it could be). The state's objective function has as a *direct* argument the beliefs inculcated in schools.

The history of schooling is replete with explicit battles for control of the ideological content of schools: Communists wanted their ideology to build the new socialist man, Liberals (19<sup>th</sup> century) wanted to reduce the influence of Catholics, Napoleon wanted schools to build a national French identity over regional affiliations, Ataturk wrested control of schooling from the clerics to form a distinctively Turkish (as opposed to either Ottoman or Islamic) identity.

The first element is therefore “state ideology” (SI)—the state chooses policies to maximize its own objective function and the discrepancy between the beliefs inculcated in the schools children attend and the state's “ideal” beliefs enters directly as an argument in its objective function<sup>4</sup>.

The second element is that the effective inculcation of beliefs, unlike the teaching of skills, is very costly for a third party to observe because one cannot pretend to have skills one doesn't have but it is relatively easy to pretend to have beliefs one doesn't have. If the state desires the inculcation of an ideology that a significant fraction of the population do not share (e.g. Communism, secularism, Catholicism, nation-state loyalty over ethnicity) then verification costs are potentially high enough the third party

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<sup>4</sup> The emphasis on the ideological role of schooling is similar to Lott (1998) but the approach is different in two respects. First, his model focuses on the attempt of particular “regimes” to stay in power rather than the interests of “the state.” Second, he models the regime concern about ideology not as a direct argument in the objective function but rather as exclusively instrumental to perpetuation of the regime in power. My approach is much more general as I allow for “states” to have sincere beliefs.



contracting for schooling (e.g. the state gives a voucher) does not accomplish the state objective, as it is undermined by collusion between teacher and student for insincere teaching. A student with the incentive to be able to pass himself off as a Communist or Catholic or Nationalist but with no desire to actually believe the ideology could contract with an instructor “teach me to pass the exam and mimic Communist/Catholic/Nationalist beliefs while at the same time teaching me these beliefs are false.” This second element is therefore the technological constraint of “incomplete contracting over socialization.”

In the SI-ICS model policy P is chosen to maximize the state’s objective function, which has a direct argument the beliefs in schools attended subject to the observational constraints on socialization and political constraints on state viability. The constraints on state viability depend on the political model of both the “state” (broader than the control of any given regime) and the “regime” (who controls the state). Constraints on the state depend on the citizen’s ability to monitor and hold the state accountable—which can vary from next to no control of citizens in authoritarian regimes to tight control of regime behavior by electoral accountability in others. This assumes some discrepancy between the interests of the citizens in maximizing their own welfare (which includes the degree to which their children’s school conforms to their desired socialization and pedagogical approach) and the state and that citizen well-being, rather than being an *objective* of the state is a *constraint* on the state’s pursuit of its own interests, of which ideological control is one element.

**III) As a model NAP has no successes and many failures**

This section presents five common facts about schooling policy around the world that are either inconsistent, with, or at best not explained by, NAP. At the same time I show that SI-ICS provides an alternative model that, if fully elaborated, at least has the potential to explain everything NAP cannot. This is not to argue that SC-ICS is the only alternative to NAP, as there are explicit political economy models of some aspects of schooling, and one can accept the arguments against NAP can be against an unspecified alternative positive model without accepting SI-ICS as the alternative, but for the purposes of the later sections I want to illustrate at least one concrete alternative.

- Support to schooling is predominantly (if not only) through direct production and there is strikingly little reliance on other instruments which would appear to be economically more efficient instruments for the ISW objectives,
- Overall education spending benefit incidence not progressive and governments do not minimize displacement effects,
- Allocation of (i) total budget to education and (ii) across levels of education (e.g. primary vs. secondary) varies widely across countries not explained by NAP,
- Government production of schooling is inefficient in that (i) allocation of budget across activities (e.g. teachers vs. buildings vs. chalk) is often seems biased towards wages, (ii) at least in some instances government operated schools are economically far less efficient than private schools, (iii) adoption of innovations seems slow,
- The scale of the jurisdictions responsible for the production of schooling is much larger than any economics would suggest.

**III.1) NAP and the policy of *only direct production***

NAP is useless with regard to the most basic and common feature of schooling policy—that nearly all governments not only directly produce schooling but that, to first order, direct production is their *only* support to education. Mark Blaug’s (1976) review of the economics of education, although more than 30 years old, remains roughly true: *what needs to be explained about formal schooling is not so much why governments subsidize it as they do, but why they insist on owning so much of it in every country. On this crucial question we get no help, and cannot expect to get help, from the human capital research program, even when it is supplemented by the theory of externalities and public goods of welfare economics.*” (p. 831).

There are three distinct arguments. First, the usual normative economics of education *does not* lead to a positive prediction of “only direct production” as it stops short of showing why production is a superior instrument to other policies for achieving the same objective. Second, NAP cannot be made to plausibly predict “only direct production.” Third, even if in some special case NAP could predict “only direct production” its does not work as a *general* of government behavior.

*NAP does not predict “only direct production.”* Positive externalities, both economic and non-economic, to a minimal level of basic education are often cited as a normative *rationale* for government intervention in the market for basic schooling. Some might argue that (a) there is a widespread belief there are externalities and (b) governments produce schooling is itself a “successful” prediction of NAP. But I will

use this example to illustrate the difficulties with NAP and the arguments can be extended to other market failures (e.g. credit constraints, information asymmetries).

Suppose the policymaker's model has Externalities To Basic schooling ( $M^{ETB}$ ), then the socially optimal amount of basic education exceeds private demand in a “no intervention” equilibrium. But to be a positive model with any predictive content, NAP must show more than ‘only production’ is *one of many* instruments which would could lead to welfare improvements, but that is it the *optimal* instrument.

$$10) P^{Only Production} = P^*(C, M^{ETB})$$

In judging the relative merits of potential policy instruments for addressing normative market failure or equity concerns I assert that economists tend to have four general propensities. While each of these could be proved as theorems in specific contexts, here I just assert them as broad propensities.<sup>5</sup>

***Propensity among Policy Alternatives I (Choice):*** *In choosing between two policies that can address the same problem, the policy that allows greater scope for individual choice is more likely to be optimal.*

***Propensity among Policy Alternatives II (Entry and exit):*** *In choosing between two policies the policy that produces freer entry and exit of producers is more likely to*

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<sup>5</sup> I would argue that most trained economists are sympathetic to these propositions and might even believe them to be generally true—by which I mean these propositions can be stated technically and proved as theorems under certain conditions and economists tend to believe that the conditions are empirically quite widely applicable—though there will be important exceptions to each.

*be optimal (as this is more likely to result in productive efficiency and diffusion of innovation).*

***Propensity among Policy Alternatives III (Tax minimizing):*** *In choosing between two policies the policy that minimizes the distortions induced from mobilizing public sector revenue is more likely to be optimal.*

***Propensity among Policy Alternatives IV (Instruments to targets):*** *The optimal solution matches as closely as possible the instrument to the objective.*

Can NAP show the optimality of only direct production? An alternative policy to address externalities to basic education is to enforce a mandate that every child must receive at least some minimal standard of education (with the minimum specified either in terms of passing a minimal number of years, attending until a certain age, or achieving some level of actual performance level test—say, literacy). *Mandates* are widely used as a policy instrument to address externalities in other domains (emissions testing, food safety requirements, occupational certification, zoning restrictions, immunization requirements, etc.) Mandates are plausibly a better response to positive externalities than direct government production because mandates: (a) maintain consumer choice of provider (PAPA I), (b) allow for competition in production (PAPA II), (c) use fewer tax resources as there are expenditures only in enforcement (PAPA III), and (d) the mandate is can be directly matched to the externality—if the externality is to a particular level of education (basic) or set of skills (e.g. literacy) then the acquisition of those skills is mandated while leaving the other content of schooling and the total level achieved to citizen choice (PAPA IV). This argument isn't intended to

prove mandates *are* the optimal response, but only to show that the existence of externalities alone does not imply NAP predicts *any* public production (much less *only* production) unless it is shown to be superior to mandates (and all other alternatives).

To get NAP with the policy maker economic model  $M^{ETB}$  to explain only direct production one might add additional features to the constraint set on policies or restrict the range of feasible policies. For instance, one could assert mandates are not the optimal instrument because some parents “cannot afford” the mandated minimal standard. To formalize this one might add an additional constraint on the policy set, that the mandated expenses not exceed some fraction of household expenditures<sup>6</sup>.

With both externalities and affordability constraints a policy of a mandate supplemented by targeted transfers or fee waivers (again, commonly implemented in other policy domains) is arguably superior to production (again by invoking PAPA I-IV). Further complications might be added—perhaps some people cannot afford the mandated standard and governments do not have information to target on household ability to pay.

The policy choice problem is now ( $M^{\text{Policymaker}} = M^{ETB}$  and the constraint set is  $\{\text{“Mandated expenditures cannot exceed threshold” and “Cannot target on ability to pay”}\} \in C$ ). With externalities *and* affordability constraints *and* inability to target, a mandate plus a universal “demand side subsidy” (e.g. vouchers) might still be superior to direct production as it still allows consumers to choose their schools (PAPA1),

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<sup>6</sup> Of course, if the policymaker has access to lump-sum taxes and transfers the “instruments to targets” would suggest implementing the joint policy of optimal transfer to address the “equity” issue and the use of the mandate to address externalities. But we have excluded lump-sum taxes in PAPA III.

allows for competition (PAPA2), and reduces public resource use (in the absence of cost recovery—see below).

$$11) P^{Only Production} = P^*(C^?, M^{ETB})$$

The first point is that NAP typically fails because it does *not* constitute a fully articulated positive explanation of the widely observed policy of only direct production. The model and constraint set under which this is the optimal policy instrument are not specified<sup>7</sup>.

*NAP cannot be made to predict 'only direct production'.* In a paper titled “Ideal Vouchers” Caroline Hoxby’s (2001) takes this argument further showing that essentially *anything* direct production can do (that is observable) vouchers can do better. In particular, one might imagine that in addition to standard externalities to schooling perhaps schooling has social objectives, like achieving social integration. She shows that even for goals for schooling, such as encouraging racial or ethnic diversity, well designed vouchers are still superior to government production. Her argument is an extension (and formalization) of the heuristic arguments made above as PAPA I-IV<sup>8</sup>. Under standard normative public economics, as reflected in propensities

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<sup>7</sup> Many developing countries have at some point banned the private production of education at the primary or secondary level (and some even banned it at the university level) (World Bank, 1993). Reconciling a ban on private education with NAP is perhaps not impossible—but no one has, and it would require some ingenuity to show why a technocrat with the objective to increase skills through education would prohibit voluntary, skill enhancing, public budget reducing, agreements between parents and providers. Perhaps there is a model with important peer effects in which the only way to preserve the positive externalities of “high quality” students is to force them into public schools.

<sup>8</sup> Which are roughly the same as famously presented by Milton Friedman in his argument for school vouchers over 40 years ago in *Capitalism and Freedom*.

among policy alternatives (PAPA I-IV) the one can make the bold assertion that “anything q can do, p can do better” or that there is always a policy superior to “only direct production” and hence NAP *cannot* predict the world’s most widely observed schooling policy.

$$12) \forall C, M \exists P \text{ such that } ISW(P) > ISW(P^{\text{Only Direct Production}})$$

The fundamental difficulty with constructing a positive model that predicts government production is that the market failures for schooling are nearly always *demand side* market failures (e.g. externalities, credit constraints, information asymmetries) but it is the characteristics of *production* that usually occasion government *ownership* as an economically optimal response. Governments often directly produce pure public goods (non-rival and non-excludable). Governments also often end up owning assets that provide services for which excludability is difficult (e.g. urban roads) while inter-urban highways are at least in some instances served with toll roads. Governments also often end up owning industries which either because of network externalities in the delivery of the service (e.g. urban sanitation, natural gas) or large economies of scale or both when vertically integrated, e.g. power) were considered “natural monopolies.” In these cases the “make or buy” choice between government ownership or private ownership with regulation is complex.

In contrast, on the supply side, schooling (certainly primary and secondary and nearly all of tertiary) is a garden variety, plain vanilla, private good. Schooling is fully



excludable. Schooling is rival<sup>9</sup>. Except in very small and remote places the economies of scale are small relative to the total market<sup>10</sup> and there are few infrastructure-like network externalities<sup>11</sup>. The supply of basic schooling is probably near infinitely elastic<sup>12</sup>.

There are few markets when, left to their own devices, look more like the economist's model of competitive markets with atomistic producers than for-profit training. Take markets for language instruction or computer skills or tutoring or "lessons" (e.g. athletic, music). Walk down any even medium sized town in a developing country you will be bombarded with advertisements for these services from a huge multitude of suppliers. If one thinks of schooling as sequenced, multi-topic training then one at least suspects the same competitive nature of the industry would apply when entry is allowed—which is consistent with the evidence of many small scale producers rather than large market players when there is significant private sector entry.

*The "all countries" problem with direct production and NAP.* Economists can famously be simultaneously clever and stubborn in ignoring the obvious. If taken as a

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<sup>9</sup> This is a little complicated as over some ranges of class size one additional student may impose only small costs on other children but this is over a very narrow range compared to the market.

<sup>10</sup> A census of schools in Pakistan found that in the typical rural village in the Punjab there are now many public and many private schools.

<sup>11</sup> Especially if one divides the overall production of schooling into components, such as curriculum, setting standards, creating textbooks, external assessment and those parts of the daily operation of the school (see Pande and Pritchett 2004). Since these can easily be separated in practice vertical integration is not a necessary feature of the industry.

theorem, that no NAP model could explain “only production” as an optimal policy a sufficiently clever economist might take a proof by counter-example approach. Perhaps by tweaking assumptions here and there one might concoct a model in which NAP does predict production in some configuration of economic and political circumstances<sup>13</sup>.

But to be a *general* model NAP would have to deal with the “all” problem. Think of any list of developing countries: Bolivia, El Salvador, Haiti, Morocco, Egypt, Kenya, Malawi, Cote d’Ivoire, Nepal, Pakistan, Malaysia, Vietnam, Zaire. In *all* of these countries the government produces schooling and at *all* levels—from primary to tertiary. In *all* of these countries public schooling has expanded massively. As a particularly strong example, according to official statistics the number of children 8-15 in schooling in the Ukraine almost doubled from 1928-29 to 1932-33 and enrollment reached 4.5 million. During 1932-33 there was also a combination of purge of Ukrainian elite with “nationalist” sympathies and a famine that cost somewhere between 3 and 5 million lives. Was Stalin of two minds about the Ukraine—expanding schools for benign normative motives and yet killing, deporting, and confiscating food for malign motives on the other<sup>14</sup>? Of course not, the expansion of schooling, the

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<sup>12</sup> At least where the main input (potential teachers) is readily available. Das and Khwaja 2007) show that in Pakistan, where women do not move across villages easily, locally available teachers created by past public schooling strongly influences the *supply* of private schools.

<sup>13</sup> Epple and Romano (1996) also have a model that explains direct production in a voting game in which some mix of market and public provision (with private supplements) is observed. Whatever its merits as a description of some current situations (e.g. voting in the USA) these models can hardly be robust general models of schooling policy. They never suggest their model is general or extends beyond the specifics of the USA.

<sup>14</sup> As Birdsall and James, 1990 point out it is obviously *ad hoc* and unattractive to have one model of government behavior for “good” sectors like education and another for other

purges, and the famine has the same objective—a suppression of Ukrainian nationalism and of opposition to Stalin’s policies. So even if one had a counter-example it would be a special, not a general, model.

While a disinterested social welfare maximizer is a useful imaginary device for normative analysis--as a positive description of the behavior of any real agent it is obviously inconsistent with both the facts and the rest of the economics, which assumes self-interested maximization by all other agents. Moreover, it is obviously inconsistent with the actual behavior of most governments of the world—all of whom do produce education.

*SC-ICS does naturally what NAP cannot do—predict ‘only direct production’ everywhere.* First, the cost of third party observation of the sincerity of socialization is the key assumption that drives government production, which is a supply side assumption and hence naturally predicts production. Second, since the objective is to control socialization this explains the choice of production over other instruments that would increase the total amount of schooling, but outside the control of government (like mandates or vouchers) as this does not advance the objective function of the state. Third, since (nearly) all governments—including democracies (Kremer and Sarychev 2000)—seek to control socialization in schooling the SC-ICS model easily handles the

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sectors and yet no one attempts to explain the entire range of actual developing country government actions as the attempt of a policy maker to maximize social welfare.

“all” problem as democracies are a special case<sup>15</sup>. Fourth, SC-ICS can explain the deviations from only direct production—both in which suppliers are provided public support and in which (very few) countries actually adopt widespread voucher-like programs<sup>16</sup>.

### **III.2) Displacement and Benefit Incidence**

The second most widely known fact about education is that, around the world, children from richer households complete substantially more schooling than children from poorer households (Filmer and Pritchett, 1998) as they are more likely to enroll, more likely to enroll at an early age, and less likely to drop out. Nearly all of the government budget for education goes to direct production and the structure of the cost of that subsidy per child is X if the child is enrolled in a government school, zero otherwise. In those cases in which the gradient of enrollment in private school is not sufficiently large, this implies that in most of the world the public sector cost incidence of overall education spending is less equal than a uniform transfer<sup>17</sup>. Education spending tends to follow enrollment so that as enrollment at any given level (primary,

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<sup>15</sup> Other models besides Pritchett (2003) invoke the importance of the inculcation of beliefs in the education process to explain government production (Kremer and Sarychev 2000, Gradstein and Justman, 2000). These papers are special cases that either invoke an actual production externality to beliefs (Gradstein and Justman 2000) or democracy and a distribution of beliefs (Kremer and Sarychev), neither of which are general.

<sup>16</sup> For instance, in some predominantly Catholic countries public monies are allowed to flow to Catholic schools (e.g. Argentina, Venezuela)—but only Catholic schools. In some predominantly Muslim countries public monies are allowed to flow to Muslim schools (e.g. Indonesia). The only country which has historically provided resources to public and private institutions on a (more or less) comparable footing is Holland where the roots of the policy are clearly in the populations mixed religious denominations

secondary, tertiary) increases the marginal incidence is higher than average incidence (as the richer enroll first) so that incidence “improves” as enrollments expand (see Lanjouw and Ravallion 1999 for an example).

This pattern constitutes an enormous puzzle for the NAP model as, if the goal is to increase the level of schooling, then all costs on students who would have otherwise enrolled in the private sector are infra-marginal and, as “infra-marginal” subsidies imply public costs, with all the attendant costs of mobilizing public sector funds, and hence are inefficient. Under NAP one would expect public policies to be consciously designed to *minimize* displacement from the private sector. The most obvious way to do so would be to have public support flow to poorer households.

This question of displacement sharply distinguishes the NAP from the SI-ICS model. In SC-ICS the state’s objective function *increases* when a student moves from the private to the public sector since the conformity with the desired socialization is higher. If NAP were true one should observe governments designing policies to minimize displacement and maximizing total, not just public sector, enrollment per public sector dollar. The goal would be that all students get schooling. If SI-ICS were true one would expect government’s to maximize *public sector* enrollment—including at times actively discouraging private schools. The goal is that, *of the students who get schooling*, they get publicly produced schooling. This difference on displacement explains many commonly observed empirical facts.

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<sup>17</sup> I use the phrase “cost incidence” rather than the more common “benefit” incidence since, for a variety of reasons, the public sector cost per child may not even approximate the benefit to the

First, this explains the widely observed patterns of benefit incidence, as the state wants to control the schooling of those getting educated and if those come from richer backgrounds then the incidence will follow, rather than lead, the private demand for schooling.

Second, this explains the lack of other instruments (e.g. mandates, entitlements, vouchers) as the state does not wish to push demand ahead of the publicly available supply. While the government production of schools is sometimes used as an argument for their commitment to universal schooling, there is a simple plausible argument that governments *produce* schooling as their *only* support is production precisely because they are *not* committed to universal schooling. It is commonly accepted that there is almost no developing country in which the enforcement of a legal mandate accounts for a significant increase in the amount of education (Basu 1998)<sup>18</sup>. While a mandate with *no* production would not be a puzzling response to an externality, direct production with no mandate is truly a puzzle for NAP. Suppose however the government had a limited commitment to education and really only wanted those who would go to school in any case to attend publicly produced school and was willing to devote only X% of its budget to education. Support only through direct production allows a convenient way

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child.

<sup>18</sup> If a mandatory age were effective and binding one should see a discontinuity in the enrollment profile by age around the mandatory age, as those who were held in the system by the mandate drop out after very near to passing the age limit. While there is some evidence of this type for OECD countries (e.g. Britain) even in many countries where there is a mandatory age on the books there is no empirical evidence of impact.

to ration the exogenously determined budget, not to those who would not have attended but to all, including those who would have attended private schooling.

Third, this explains the historical phenomena of the state creating a public sector educational system by absorbing and controlling existing schools (which is the origin of the government system in nearly every currently developed country). In Japan, there are those who argue that a decade after the consolidation of schooling into nationally controlled schools enrollments were roughly the same—the expansion of government of schools was 100 percent displacement.

Fourth, the policy in many countries *bans* on private schooling. For instance, Pakistan nationalized existing schools and banned private schools in the 1970s as a deliberate policy to push children into government schools (Farooqi and Pritchett, 2002). This is hard to reconcile with goals of maximizing enrollment (NAP) but easy to reconcile with the goal of maximizing the fraction of those enrolled who enroll in a publicly controlled school (SC-ICS).

Fifth, this explains the general lack of calculations of displacement in building new schools. Suppose that the government builds a new school and attendance at that school is 100 children, by how much did the “public sector intervention” increase enrollment? The answer could be 100, or the answer could be zero. If NAP were the correct description of behavior then the magnitude of displacement effects would be a huge empirical issue, both in assessing overall support to education and in the location decisions of individual schools. This near complete lack of interest in displacement effects—I could find only two studies of the topic, both quite recent--is consistent with

an objective function increasing in the proportion enrolled in publicly controlled schools.

### **III.3) Total support and allocation of support across tiers of schooling**

In principle NAP would explain total support to and the variation across the levels of schooling—from basic to secondary to tertiary—both in terms of instruments (e.g. subsidies versus direct production) and budget allocations—as functions of an economic model and set of constraints that led the choices to be welfare maximizing. However, this has never been done. While there is substantial variation both across countries/jurisdictions and across time in the allocation of budget, in total and across the tiers of education there has never been an empirical relationship established between the empirical magnitudes of market failures/equity concerns and (a) the level of allocation in any single country, (b) the variation over time within a single country/jurisdiction, or (c) the variations across countries.

Moreover, the consideration of higher levels of schooling raises again the question of choice between direct production and vouchers. Here there is substantial variation across countries in the extent to which higher education is carried out by publicly controlled versus private institutions. There has never been an explanation of this variation in instruments in terms of variation across contexts in the underlying market model or constraint sets across countries.

The SC-ICS model can be extended to have concerns for socialization/ideological control at both the mass and higher levels—which explains both the government engagement in this area (even without invoking any market failures) and could



potentially explain variations across countries in the level of support across levels of schooling (depending on whether governments most wish to control ideology at the mass or elite levels).

#### **III.4) The efficiency of production**

An implication of NAP is that if the technocrat chooses government production of schooling to promote skills then these government schools should be productively efficient (cost minimizing). Productive efficiency would have three implications: (a) budgets are allocated efficiently across inputs, (b) public and private schooling are equally efficient, and (c) to remain efficient, government schools must also adopt innovations.

*Budget allocations.* Pritchett and Filmer (1997) demonstrate there is not evidence for productive efficiency of the allocation of inputs. First, no one has ever tested the proposition that schools were productively efficient and not been able to reject it. Third, the measured skills increment per expenditure across inputs (e.g. books versus class size), which of course should be equalized in productively efficient units, often differs by often one, two, or even three *orders of magnitude*. Cumulatively the evidence suggests deviations from productive efficiency that are *systematic* and inconsistent with NAP. The deviations from efficient budget allocations are consistent with positive models in which policy makers have objective functions that put substantial weight on factors other than maximization of social welfare (Filmer and Pritchett, 1997).

*Private versus private schools.* In many (though by no means all) cases there is evidence that, even controlling for selection effects, private schools are enormously more cost effective in learning achievement per expenditure than government run schools. This is not to say that private schools will be uniformly more effective at producing learning outcomes—in many countries with effective governance and tight democratic control there are reasons to believe that the differences between public and private school efficiency might be small. But in cases with weak governance the estimated gap between public and private schools in measured learning gain per dollar is large (Jimenez, Lockheed and Paqueo 1991) and can be as large as a factor of two<sup>19</sup>. This is usually because unit teacher costs are enormously higher in government schools either because teacher wages are high (and not well structured) or class sizes are inefficiently low (relative to other inputs).

*Diffusion of innovations.* A third implication of productive efficiency is that schools should be at the productive frontier, including in the adoption of whatever existing innovations (with some lag for diffusion). One thing the series of randomized experiments that have been carried out in education over the last few years have definitively established is that there are a number of easily available, “common sense” interventions (such as tutoring for those behind in reading (Duflo et al 2007), the

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<sup>19</sup> Das, Pandey, and Zajonc (2006) find that, adjusting for student characteristics the private-public gap is 73, 92, and 143 points in Math, Urdu and English in Rural Pakistan even though private schools have substantially lower costs per student. A recent study finds the same for schools in Orissa and Rajasthan in India. A small survey of schools in urban areas of India finds the same phenomena—substantially higher scores (adjusting for background) with lower unit costs (Tooley and Dixon 2005).

adoption of “community” teachers (Dulfo, Dupas, and Kremer 2007) that have not in fact been widely adopted. This is consistent with the commonly observed phenomena of wide gaps in the effectiveness of individual schools (e.g. Crouch 2000) and, at least in some environments, the very wide variation across government schools in effectiveness (e.g. Das, Pandey and Zajonc 2006 for Pakistan).

Since what government is doing under SC-ICS is not in fact attempting to address market failures, there is not particular reason to expect it to be productively efficient in producing learning outcomes.

### **III.5) Scale of government jurisdiction responsible for production**

Even if it were decided that “only direct production” by the government were the optimal policy, there would still be a question of which level of political jurisdiction should be endowed with control over which aspects of schooling. If one were imagining that schooling policy were chosen optimally—what would be the relative roles of national, provincial/state, municipality and local governments in schooling? Moreover, would schooling be controlled by quasi-parallel organizations (e.g. autonomous school boards) or directly as a line ministry function?

The prevalence of national or state/provincial control of the production of schooling over more local bodies is another common feature of schooling for which NAP has no explanatory power at all. There is no suggestion that this could possibly be explained by economies of scale. SC-ICS has a coherent answer—the level of jurisdiction is a political issue and depends on battles over the control of socialization—production national control, the preservation of state/provincial autonomy in federal

systems (e.g. India, Germany) and even less commonly, local control (e.g. USA).

**Table 1: Not a single redeeming virtue to NAP**

	Normative as Positive (NAP)		State Ideology-Incomplete Contracting Socialization (SI-ICS)	
	Theory /Prediction	Reality	Theory/ Prediction	Reality
<b>Direct Production</b>	Array of instruments (e.g. mandates, vouchers)—direct production rare	Only direct production common, other instruments rare	Direct production universal, mandates, vouchers rare	Direct production universal, other instruments rare
<b>Benefit Incidence/ Displacement</b>	Displacement minimized, progressive benefit incidence	Displacement ignored or maximized, benefit incidence neutral	Displacement maximized, benefit incidence passively responds to demand	Existence of active displacement (nationalization, bans on private), benefit incidence evolves with demand
<b>Productive efficiency</b>	Productively efficient, efficient allocation of spending across inputs	Production frequently inefficient (compared to private), input allocation not efficient	No strong prediction on efficiency in learning since socialization strong element of production	Little or no attention to efficacy or efficiency of learning, rarely measured
<b>Allocation of budget across levels</b>	Based on magnitude of market failures/equity concerns across levels of education	Huge variations in allocation across countries, no demonstrated connection with market failures or equity	Allocation across levels dependent on need to control mass versus elite education	Yet to be investigated.
<b>Scale of Production</b>	Based on optimality of productive efficiency	Control at a very large scale (national, state/provincial), politically driven, demonstrated effectiveness of community control has no impact	Based on scale of political jurisdiction which gains control of socialization (national vs state/provincial)	Control at a very large scale (national, state/provincial), politically driven, no community control

**Summary of section on empirical validation of NAP.** There is not a single aspect of actual educational system policy making in practice that normative welfare economics elucidates correctly. I should point out that there are alternative political economy models of schooling that attempt to explain the rise of schooling without NAP. These models mostly explain the expansion of education historically as the result either of the expansion of the franchise, with the “elite” extending schooling under pressure from the “masses” to forestall even larger changes (e.g. Acemoglu and Robinson 2000, Lindert 2006, Bourguignon and Verdier 2005). While these models elucidate some elements of the political economy of schooling, without the explicit incorporation of the role of socialization they cannot hope to be general models of schooling policy. Without incorporation of the socialization and incomplete contracting they cannot handle the “only direct production” versus alternative instruments, nor deal with the rise of schooling in non-democratic environments, nor the displacement problem, nor the problems of efficiency.

#### **IV) What is policy relevant?**

Some may feel the previous section was administering a vicious beating to an already dead horse. It is easy to admit that NAP is wrong, and in fact, surely no one believes that anyone really believes the normative model of welfare economics makes a good policy model of the political economy of policy-making (and not just of schooling policy)? But however much economists may claim not to believe NAP, when it comes to defining what research is “policy relevant” they have no other standard. For instance, in a review article about the empirical basis of education policy in the USA

Poterba (1996) points that “There is virtually no evidence on the empirical magnitudes of many of the key parameters *needed* to guide policy in these areas” (p.g. 278) and “because externalities are invoked to justify intervention...there is a pressing *need* to document the magnitude of the externalities, particularly those associated with the consumption of education” (pg 301).

Claims about what research is “needed to guide policy” or about the “policy relevance” of research are implicitly claims about a positive model of policy. I propose what I regard as a sensible definition of “policy relevant” research. I propose that policy relevant the research changes the distribution of beliefs in such a way that policy implemented under the distribution of beliefs conditioned on the research leads to a welfare superior outcome.

*Definition of " policy relevant " research :*

$F^i(\Theta)$  is the distribution function over a set of parameters of  $i$  actors .

Research is policy relevant under positive model PM iff :

$ISW (PM^{True} (F^1(\Theta | Research), \dots, F^N(\Theta | Research))) >$

$ISW (PM^{True} (F_0^1(\Theta), \dots, F_0^N(\Theta)))$

There is an alternative definition, of *hypothetical* policy relevance. Suppose we parameterize the set of relevant parameters specific to any given positive model of policy as  $\Theta^{PM}$ , then one could do research into the parameters that *would be* relevant if it were the case that the model PM were the true model.

*Definition of hypothetical " policy relevant " research :*

$F(\Theta^{PM})$  is the distribution function over a set of model specific parameters .

Research is hypothetical policy relevant iff :

$ISW (PM^A (F(\Theta^{PM^A} | Research))) > ISW (PM^A (F(\Theta^{PM^A})))$

These simple definitions allow one to distinguish three possibilities for theoretical or empirical research into the economics of education.

First, research that is explicitly not “policy relevant” (under NAP or any other model), but which is relevant to a positive behavioral model of education. An enormous literature estimates the economic returns to schooling using the empirical association of individual’s schooling and their earnings. Running to thousands of studies using hundreds of data sets in more than 60 countries, this has firmly established a quite general positive association of schooling and earnings. This is now, after Engel’s curve, the most widely replicated and accepted empirical fact in economics. The more sophisticated part of this literature uses a variety of identification techniques (e.g. mandatory attendance laws (Krueger), dates of birth (Angrist), geographic spread of schooling (Duflo)) to account for other possible explanations of a earnings-schooling association such as signaling models (Spence) or ability bias and estimate the causal connection between additional years of schooling and additional earnings for the average or marginal attendee. But this research makes no claims to being NAP policy relevant<sup>20</sup>. The earnings increments to individual schooling are relevant to a *positive*

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<sup>20</sup> One of the most confused episodes in the intellectual history of development economics is the misuse of the tables of “social” rates of return published in a series of review articles by Psacharopoulos (1994, updating versions beginning in the 1980s) in which, due to a quirk in one organization’s policies, the difference between *investment* and *consumption* was confused with the existence of a *rationale* for public sector intervention (which can be justified for either production or consumption). That is, the World Bank’s Articles of Agreement specify that the World Bank should only finance *productive* investments and not consumption. As the World Bank wanted to lend for education and countries wanted to borrow, there was a question of whether education could be justified as within the scope of a “productive” investment. So there were a series of review articles showing that education was “productive.” Moreover, to show that this investment had a return even accounting for the cost borne by the public sector, these

theory of schooling—in exactly the same that accurate estimates of returns to the marginal investor in various financial investments are relevant to a *positive* theory of investing but have no obvious and immediate policy implications in standard *normative* model of policy<sup>21</sup>.

Alternatively, research might be claimed to be NAP-hypothetically policy relevant—but without any real assertion that this constitutes actual policy relevance or research might be claimed to be actually policy relevant. But to assert actual policy relevance one must assert a particular positive model as an accurate representation of policy making. This distinction is usually elided and researchers claim NAP-hypothetically policy relevant research as policy relevant—but without wanting to assert the empirical soundness of NAP—which is an inconsistent set of claims.

Take for instance the research into the magnitude of externalities in education of the type Poterba (1996) refers to. These are unambiguously NAP-hypothetical relevant. But can a case be made that they are actually policy relevant—that better estimates of externalities would lead to better policy? Since it has never been demonstrated that empirically observed differences in policy are driven by differences in policy maker

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private rates of return were adjusted for public expenditures to get a “social” rate of return. Obviously since nothing was added to the private return to reflect putative externalities and costs were deducted, the social returns were consistently *less* than the private returns. These tables showing a higher private than social return were then used over and over to justify continued (even increased) *public sector* investment in the production of schooling—which is of course analytically completely backwards, as the rationale for public sector intervention justifies actions in which the social return is *higher* than the private return.

<sup>21</sup> This might be considered to be “conditionally policy relevant” in the sense of predicting what the impact of an expansion in schooling induced by policy would be on wages, without implication this would be a normative welfare maximizing policy.



beliefs (either across countries or over time) about externalities, that claim would simply have to be taken on faith. Moreover, there exist alternative models with at least as much plausibility as NAP (e.g. SC-ICS) in which externalities play no essential role and hence there cannot be an argument that the policy relevance of externalities is “robust” across alternative positive models. Hence it is impossible to conclude that this research is “needed” for actual policy making.

If one accepts the empirical inadequacy of NAP then there is no way to defend the policy relevance of *any* of the existing economics of education without asserting some alternative positive model.

The third possibility therefore is actual policy relevance postulated with respect to a plausible (perhaps even empirically validated) positive model of policy. But this involves the explicit recognition that claims about policy relevance of research *are* empirical claims about positive models of policy making. However, these empirical claims are made often in the complete absence of evidence.

#### **IV.A) NAP with Error and Uncertainty and the “randomization” agenda**

There is a fundamental problem with most claims to the policy relevance of research—which is explaining the need for the research in the first place. After all, if the agent were optimizing over all actions, including the acquisition of information, then they should have already devoted resources to estimating the value of the relevant parameters. The usual, casual, response to this is that knowledge is a public good and hence there is underinvestment in research—but this of course is not true of a welfare maximizing planner who is assumed to internalize externalities. Usually economists’

are cavalier and describe information relevant to a *normative* policy and assume that policy is not already optimal because of exogenously assumed policy maker error or uncertainty about the relevant model. NAP with errors and uncertainty (NAP-EU) is a tempting model for economists because it provides an easy and attractive role for economists to play. The heroic role for the economist is to do the solid research that provides the correct and reliable information to the policymaker that tightens the policy maker's priors around correct parameters and this leads to optimal policies.

The case for the widespread adoption of randomized evaluations of interventions in schooling as a means to improve schooling policy is one of those claims that, at first blush, glows with the possibility of combining doing good science with good work. However, the case for randomization *per se* as a new policy relevant endeavor is so incoherent as to be self-refuting. The randomization agenda as currently sometimes promoted combines a hyper-sensitivity about the internal validity of empirical work that estimates impacts of various interventions with a complete lack of any plausible positive model of policy.

This leads to a glaring inconsistency. One major impetus behind the advocacy of randomization is the belief that empirical estimates of impact effects from non-experimental data (almost no matter how those are identified) are unreliable. This postulates both a stance of skepticism (Bayesian priors are centered on "no-effect") and a methodological stance (Bayesian posteriors are influenced only by evidence from randomized experiments, with perhaps some exceptions for other clean identification).

As an argument for the rules of the language game (in the sense of Wittgenstein) internal to an academic discipline, this is perhaps defensible.

However, this agenda of randomization is pushed not just as a matter of a purely internal disciplinary game, but as a means of improving policy. This is itself an empirical claim: that evidence from randomized experiments will improve policy by more than existing evidence or other research techniques. What is the rigorous scientific basis for this claim? Where is the randomized experiment that shows evidence from randomized experiments influences policy more than from other sources? Moreover, where is the empirically plausible positive model of policy in which information to policy makers (of any type, randomized or not) plays a key role *and* in which randomized information plays a larger role?

So, the randomization agenda asks everyone to reject all existing empirical claims about the impact of, for example, reducing class size on academic performance and only fund (and believe) randomized estimates—but on the premise that estimates of class size are “policy relevant” (an empirical claim) and that randomized estimates are of more policy use than others (an empirical claim), when both premises lack not only rigorous evidence, but *any* evidence, or even any surface plausibility once explicitly stated as empirical claims.

First, this treats policy relevance as an analytical claim, which is only true of *hypothetical* policy relevance. Actual policy relevance is an empirical question. So far there has been no evidence presented that a “lack of knowledge” of key policy parameters on the part of policy makers has in fact been a key constraint on educational

policy. Most experienced practitioners reject this notion explicitly (e.g. Crouch 2000). Moreover, the existing experience with randomized evaluations does not suggest that policy makers are keen to create or act on the evidence that is being generated.

Second, taking the lack of knowledge as exogenous is particularly problematic for the randomization agenda. Randomization is a well-known technique and actually makes empirical analysis much *easier* than research using non-experimental analysis as much of the sophistication in econometric technique exists to compensate for the lack of experimental data. So, there is no argument that the new research agenda represents a technological advance creating knowledge previously unobtainable. Presumably, if the policy maker had wanted reliable estimates of impacts he/she could have already performed the relevant experiments. But the usual reason given for the lack of randomization is not the lack of technical expertise, but the lack of political will. Hence the claim to policy relevance of estimates from randomized studies depends on remedying ignorance which is the result of policy makers deliberately choosing not to carry out randomized studies, which have been within their technical and administrative feasibility for many decades.

Third, in nearly any other industry economists would be interested in the empirics of the “inside the firm” production process either to test the underlying theory of the firm—for instance, the first order conditions emerging from cost minimization, or to examine whether production conditions themselves suggest “supply side” market failures (e.g. economies of scale or mark-up). If one were estimating features of the production function on the supply side that might occasion policy action (e.g.

economies of scale) one might understand this as economics. But no economist imagines he is estimating the relationship between restaurant inputs and outputs (type of vegetable oil and crispiness of fries), or between shoe inputs and shoe outputs (leather to soles), or between law firm inputs and outputs (how many associates per brief) as a foundation for giving *advice* to these firms. But somehow the most routine of production decisions (e.g. class size, textbook availability, ability tracking) of no economic relevance at all are somehow considered interesting areas for “policy relevant” research, without any coherent explanation of how this knowledge will lead to behavioral changes of producers to scale.

**V) Is NAP worse than useless?**

I suspect that at this stage many are convinced that NAP is inadequate and that, technically, this means one cannot defend the policy relevance of the existing economics of education which is, at best, NAP-hypothetical relevant. But I suspect that many also believe that these points are academic (in the bad sense) as roughly the same things would be recommended by “practical” policy people no matter what the positive model because, after all, what is recommended is the normatively best policy. But the “common sense” view that introducing political considerations is a marginal change that leaves the policy recommendations roughly unchanged from the apolitical analysis is simply not defensible. For instance, Gelbach and Pritchett (1997) present a model in which policy recommendations which ignore political constraints are not only sub-optimal—the “politically naïve” policy choices are *pessimally* precisely for the group the

“policy maker” whose objective function he/she trying to help<sup>22</sup>. Fischel (2001) argues that the attempt of the courts in California to impose fiscal equalization in spending across districts in California without understanding the political economy of taxation to support schoolings led to the destruction of voter for educational spending and was, at least in part, responsible for undermining educational budgets in California.

The fundamental problem with NAP is that economists have bought into two notions. First, economists have characterized the objective of schooling as exclusively the “skill acquisition” dimension and have either (a) completely ignored the socialization component or (b) bought into the notion that state control of socialization is a legitimate and needs no further attention. Second, the analytical frame that the policy maker is maximizing welfare and hence is the focus of potential improvements in schooling—the agent who lacks information is the “policy maker” and the “scaling” of interventions happens as a top-down process of dissemination and diffusion from above.

Let me start with a provocative example of the first feature of ignoring actual consumer welfare. Basic consumer theory suggests that if new goods acquire market share it is because consumers find them superior to old varieties and hence there is an increase in social welfare—a gain in social welfare that may not be adequately reflected in price indices that fail to account for the value of product variety. In a paper

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<sup>22</sup> Gelbach and Pritchett (1997) show that the recommendations on targeting that emerge from a “naïve” political economy in which budgets for transfers are fixed independently of the targeting transfers are in fact the recommendations that, if implemented when in fact there was voting over the budget, would be not only sub-optimal, but are welfare *minimizing* for the poor.

attempting to estimate these gains Hausman (1997) estimates that the welfare gains in the USA of introducing Apple Cinnamon Cheerios (given the existence of other varieties from the same company, such as Cheerios and Honey Nut Cheerios, and varieties from other brands such as Apple Jacks) as being on the order of sixty million dollars a year (and when extrapolated imply the CPI for ready to eat cereals was understated by 20 percent)<sup>23</sup>.

Contrast this with the discussion of the gains from Chile's privatization of schools. The conventional wisdom is that there were some gains from individuals shifting from public to private schools but that in general equilibrium, given peer effects, the overall impact of privatization was small (Urquiola and Hsieh 2003). Over the course of the privatization the share of students in private schools increased by roughly 20 percentage points—from 28 to 48 percent of all students. This suggests that roughly one in five parents is in a different school because of vouchers which, by revealed preference, suggests that relative to their own rankings of well-being they are better off. Where are the calculations of the welfare gains of this massive shift across *varieties* of schools? To the best of my knowledge there are none. The reason is that the existing economics of education does not seem to believe in consumer sovereignty. Suppose that public and private schools were exactly as productive in producing learning outcomes on skills but that private schools product differentiated on socialization—some were more Catholic, some were more left-progressive, etc. then by

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<sup>23</sup> These calculations are themselves controversial (see for instance the interchange between Hausman and Breshnahan) as they rely on particular identification assumptions, but the

any standard approach to economics there are welfare gains to allowing choice. Valuation of these gains is not so difficult as there were many people who, in the absence of vouchers, enrolled their children in private school and hence the marginal household choosing a private school was just indifferent between a low cost publicly provided education whose socialization content was not their preferred variety and paying the full cost of the private education for a more preferred variety (plus perhaps some learning gains, that may be peer effect influenced) so the estimate of the valuation difference for the marginal switcher is the difference in the prices of the two alternatives. This is a *huge* number, crudely around .5 percent of GDP<sup>24</sup>--that makes Chile's move to a voucher like scheme a massively successful policy.

The point is that in the existing economics of education the household's valuation of the "school match" on socialization and pedagogy is completely ignored, only the "skills" component is valued as "output" of schooling. This either ignores the socialization role of schooling entirely or, implicitly, assumes that only the state's views on socialization are worthy of consideration. In fact, this is explicitly the view of governments who view the expansion of schooling an integral part of "modernization" which intends to create new affiliations (to the state and nation), respect for new institutions, and acceptance of the ideology of the state, in other words, explicitly

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fundamental approach to consumer welfare and price indices is standard.

<sup>24</sup> Here is a crude, back of the envelope, calculation. Public cost per child in school is roughly 12.5% of GDP per capita (assume teacher wage 2 times GDP per capita, 25 students per teacher, teacher costs 80 percent of total), if 20 percent of population are school aged children and 20 percent of those switched then the total welfare gain (attributing the full difference in cost as the gain to the marginal switcher, applied to the average switcher) is .5 percent of GDP.



override the preferences of perhaps a majority or only a substantial minority of its citizens. Why did economists, who are typically staunch defenders of consumer sovereignty *ever* buy into this?

One reason is that, at least in the developing world this was part and parcel of the agenda of “modernization” through the creation of strong, centralized, nation-states in ex-colonies where, in many cases, none previously existed. This agenda, which Scott (1998) refers to as “bureaucratic high modernism” was so widely supported among the “development” world as to be invisible. As Ferguson (1994) points out the “development” discourse was constructed as an “anti-politics machine” so as to make policy decisions seem the realm of technocrats and experts, not actual citizens.

This meant that, in the interests of promoting “national” development the notion of citizen preferences took a back seat. School choice was so obvious a principle it was included in the 1948 UN Charter (Article 26(3) “Parents have a prior right to choose the kind of education that shall be given to their children”), which combined with a commitment for free elementary education implies a fundamental right to state support of the schooling parents chose. However, in the subsequent pushes to “universal” schooling what was taken as the norm was universality of government *produced* schooling.

I take arguments for the superiority of vouchers (both in learning and in welfare) in almost exactly the opposite of the usual arguments that take the “policy maker” as the locus of decision making and “learning” as the primary goal of schooling. I do not

conclude that if vouchers are a superior instrument for improving welfare governments this constitutes a “policy recommendation” that governments adopt vouchers. I am arguing that *if* real, actual, governments concerns in education were in fact those posited in normative models (e.g. maximizing welfare, addressing market failures, improving equity) then they would have *already* adopted vouchers. But they haven’t. The conclusion is not that therefore governments don’t know about vouchers (vouchers or ‘voucher like’ money-follows-the-student instruments have been around for hundreds of years) or their potential impacts. The Netherlands has had a functional choice based system since the nineteenth century. Chile adopted a choice based system in 1981<sup>25</sup>. There are now hundreds of countries in the world, each of which could adopt a voucher like system if they so chose. Governments are *not* making “policy mistakes” because of error or uncertainty in the impact of vouchers that more and better research on the impact of vouchers on learning could possibly remedy. If governments do not produce schooling because of the “normative” issues of market failures or equity concerns but because of a desire to control socialization then the “policy relevant” research agenda is the agenda that informs parents as citizens on how to achieve superior welfare outcomes, not informs policy makers.

So, how can the economics of education be *worse* than useless? Suppose that the SC-ICS model is a reasonable representation of the formation of schooling policy. In this model the state is pursuing its own interests, subject to political constraints. The main pressure for more and better schooling is not the “policy maker” but parents. It is

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<sup>25</sup> The Czech Republic adopted a choice based system in the 1990s (Munich and Flier 2000).

perfectly possible that the usual economics of education, by assuming that the beliefs of the policy maker are the key constraint to better policy and use hypothetical-NAP as the frame for deciding on which issues to research has two deleterious effects.

First, it legitimizes and, to the extent in a developing country context economists have leverage with development assistance, adds resources to, a system of state control that may, or may not, have any benign objectives. The view that schooling is a “public good” rationalizes the exclusion of parents from decision making in schooling.

Second, it focuses the provision of research and information on the “policy maker” rather than on citizens and communities. In doing so it may delay the formation of the coalitions pressing for better schooling. For instance, many of the assessments of learning quality have been carried out in close cooperation with “policy makers” (e.g. ministries of education) with the consequence that the results are never disseminated to the public. In 1995 Mexico participated in the TIMSS and then explicitly refused to allow the results to be published. In other, plausible positive models it is the lever of expanding access to information to citizens that will change the constraints states face that will lead parents to have more power and the state to have less latitude that will lead to improvements.

Third, it perpetuates false notions about how innovations are going to go to scale. Brafman and Beckstrom (2006) use the metaphor of the spider and starfish to illustrate the differences between top down directed action (spider at the center of web receiving information and reacting) and the starfish (distributed localized information and response) in organizations. Economists usually think about the diffusion of innovations

in a star fish way—there are many organizations, each trying to improve, and when one discovers something superior it expands its share of the market and other imitate, respond, so that the innovation diffuses as a emergent property of a set of incentives created by decentralized decisions makers, no one of whom intends the system properties (diffusion of information is non-teleological).

The spider model of innovation is that someone “learns” (perhaps through a randomized experiment) and then mandates the adoption of innovation as a “policy”—so we could discover some parameter about the world (e.g. impact of class size on performance is such that reducing class size is a cost effective means of improving learning) and then enshrine this parameter in policy for an entire organization—e.g. actions to reduce class size.

However, this may not be a very useful model about how the innovations that are relevant to improving schooling are going to be discovered, validated, and diffused. In particular, if the “spider” model of the control of schooling has been adopted not because it is regarded as a superior way of achieving learning performance but because of the desire to control socialization, then it may well be that a complete lack of interest in innovations that improve learning is the key constraint. The longer this goes unacknowledged and unspoken—including by researchers pretending the spider has motivations it does not—the longer the adoption of needed reforms might take.

*Conclusion*

So now the big question: Who cares? You should. How societies organize themselves, socially, economically, politically and administratively to prepare the young for the future is perhaps the most important driver of long-run well being. Solid science that contributes to that goal is therefore win-win. While it appears there are three agendas, there are really only two agendas within economics that address the efficacy, efficiency and quality of service delivery in developing countries generally, including education. One is the traditional economics of education and the other is, for lack of a better term, the “accountability agenda.”

The economics of education is either a *positive* science of the behavior of consumers of/investors in education or a *normative* analysis of how a hypothetical agent (a “planner” or “policy maker”) endowed with a particular objective function ought to behave. But actual policy relevance, predicting which actions, including self-referential analysis of the impact of more and better research, will change actual policy requires a serviceable general positive model of policy. Normative analysis as a positive model (NAP) is completely worthless. This means that research in the economics of education estimating parameters that would be relevant if NAP were true is not (or at the very least cannot be defended as) policy relevant--irrespective of the methodological purity of those estimates, see below. Claims that estimates of the externalities to education or the credit constraints to financing education or the “production function” will policy by altering the Bayesian *posterior* distribution of the social planner about this NAP-

relevant parameters are *empirical* claims about a *positive* model—claims which have never been validated and which have not even a patina of plausibility.

By way of illustrating an alternative, I provide a description of an alternative positive model (SC-ICS), which I argue outperforms NAP in predicting the key observed features of schooling policy, in which none of the NAP parameters are essential, and may well be irrelevant. In fact, it cannot be ruled out that the same research which is policy improving if NAP has no impact, or could even worsen citizen welfare, under SC-ICS. Even if one chooses to reject SC-ICS (and its variants) the illustration holds true: there is no basis for a general claim that hypothetical-NAP relevant research is welfare improving if NAP is false—this depends on *which* positive model *is* true.

The second movement is the “accountability agenda” which attempts to construct a complete positive model of the efficacy of services as the endogenous result of the operation of accountability relationships between the major actors involved in the public provision of services. This agenda takes the founder of welfare economics seriously, as Pigou (1920) puts the case:

*It is not sufficient to contrast the imperfect adjustments of unfettered enterprise with the best adjustment economists in their studies can imagine. For we cannot expect that any State authority will attain, or will even wholeheartedly seek, that ideal. Such authorities are liable alike to ignorance, to sectional pressure, and to personal corruption by private interest.*

The accountability agenda in grappling with the systemic incentives embedded in politics, administration, and markets is messy, imprecise, and does not lend itself well

to small scale experimentation—but is attempting to be policy relevant. The agenda does not depend on changing the views of a “policymaker” alone, but is open as to which change in power or availability of information provided to which actor will be the instrument of actually improving outcomes for children.

Finally, it may appear as if there is a third option, the “randomization” agenda. The claim of this movement is that the lack of rigorous evidence, often limited to mean only that from randomized field experiments, about the impact of a variety of potential public sector actions is a key constraint to improved policy and hence outputs and outcomes. However randomization is only a methodology and does not, in and of itself, specify what the interesting questions to which it should be applied are. If randomization is taken exclusively as a proposal for the internal disciplinary logic or “rules of the game” for the traditional practice of the “economics of education” this movement is of almost no real interest to anyone outside of a picayune dispute over proper methods of identification. If this is only a methodological twist on estimating standard questions of the economics of education (like aspects of the “production function”) then the randomization agenda inherits the complete lack of serious claims to policy relevance from its parent, the economics of education. Moreover, taken as a contribution to the traditional economics of education the randomization agenda as a methodological approach inherits an enormous internal contradiction—that all empirical claims should only be believed when backed by evidence from randomization excepting of course those enormous (and completely unsupported) empirical claims about the impact of randomization on policy. But since the randomization agenda is

only a method and not a movement, it can easily take its methodological approach to estimating empirical impacts and apply it to questions within the accountability agenda by varying not across inputs (e.g. textbooks, class size) but also across modes of accountability.

The question of thinking big versus thinking small resonates with debates in development since there has been an intellectual endeavor called “development.” On one level that “thinking big” has led to centralized, top-down programs of the “big push” variety, against which there is a backlash of “thinking small” in allowing more local variation and experimentation and more market like mechanisms of allowing the emergent properties of the small to transform the big. But, if the problem is that the system as structured creates no pressures or spaces for scaling of innovations then thinking big does require attention to systemic issues for the small to have a chance.



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