## **Apresentação**

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## O princípio da mão escondida no processo de desenvolvimento

A história narrada por Hirschman no texto escolhido para compor este número da revista se inicia, poeticamente, com uma imagem do florescimento do bambu destinado a abastecer a usina Karnaphuli de papel e celulose, em Bangladesh, e termina como uma apologia à capacidade que a natureza, inclusive a natureza humana, tem de surpreender. Depois de descrever um domínio inóspito para o progresso social, constrangido pelas múltiplas carências dos países em desenvolvimento, o autor desemboca em uma quase fábula sobre a capacidade humana de gerar a energia requerida pela transformação social.

Um breve exercício de reconstituição histórica pode situar o leitor no contexto em que Hirschman escreveu o texto em questão. Ele constitui o primeiro capítulo do livro *Development projects observed* (HIRSCHMAN, 1967), definido pelo autor como "o mais provocativo", por razões que aqui procurar-se-á esclarecer. *Development projects observed* nasceu de um relatório das viagens realizadas por Hirschman para projetos do Banco Mundial em quatro continentes: África (Etiópia, Nigéria, Uganda); América Latina (Equador, Peru, El Salvador, Uruguai); Ásia (Bangladesh, Índia, Tailândia); e Europa (Itália). Hirschman, que na época era professor na Universidade de Columbia, na cidade de Nova York, negociou com o Banco Mundial a avaliação de uma amostra de seus projetos, selecionada de forma a cobrir uma extensa área geográfica e diferentes campos de atividade: usinas hidroelétricas, pro-

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gramas de irrigação, reformas de pastagens, projetos de modernização de ferrovias e do sistema de telecomunicações.

Foi graças a esse programa de visitas a campo, que se estendeu de julho de 1964 a agosto de 1965, que Hirschman teve contato próximo com a experiência de países empenhados em modernizar sua economia e superar a pobreza. Aos 40 anos de idade, o economista queria entender os obstáculos ao desenvolvimento enfrentados pelos governos e pela população desses países, bem como as razões do êxito ou fracasso dos projetos implantados com apoio do Banco Mundial. Pretendia investigar de perto os resultados da aplicação de políticas de cunho desenvolvimentista a circunstâncias históricas e geográficas delimitadas, não só diferentes das desfrutadas pelos países já desenvolvidos, como também bastante heterogêneas entre si.

Em sua experiência anterior com iniciativas do Banco Mundial, particularmente na Colômbia, onde residira em meados da década de 1950, Hirschman já havia manifestado seu ceticismo em relação à eficácia de grandes planos nacionais integrados de desenvolvimento (BIANCHI, 2011). Antes de mais nada, ele questionava a crença na uniformidade dos processos de industrialização através do mundo e dos tempos, sustentando que a transformação dos países de industrialização tardia (*latecomers*) era um processo necessariamente desequilibrado, no qual os desequilíbrios provocados pelo avanço de setores líderes gerariam os desdobramentos (*linkages*) responsáveis por sua difusão. Assim, Hirschman diverge de pioneiros como Rosenstein-Rodan, Nurkse, Lewis e Scitovsky, que advogavam uma solução simultânea para os vários setores da economia.

A percepção da necessidade de estimular projetos específicos, que desencadeariam investimentos em outros setores, era consistente com a mudança de diretrizes do próprio Banco Mundial, principalmente a partir da gestão de George Woods (ALACEVICH, 2009). Gradualmente, as missões econômicas de amplo escopo, encarregadas de relatórios compreensivos com base nos quais planos nacionais de desenvolvimento eram elaborados, foram substituídas por missões com metas mais restritas. Em meados da década de 1960, os financiamentos intermediados pelo Banco deixaram de ser canalizados para grandes planos nacionais e passaram a beneficiar programas e projetos específicos. Mais ainda, os dirigentes da instituição foram convencidos da importância de uma avaliação periódica desses projetos, com vistas a corrigir seus erros e definir prioridades para futuros empreendimentos (MASON; ASHER, 1973). Um dos frutos do relatório de Hirschman foi justamente a sistematização desse tipo de avaliação, que se tornou rotineira na década de 1970.

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Contudo, a negociação de Hirschman com dirigentes e técnicos do Banco Mundial teve lances insólitos. Tanto sua proposta inicial como seu relatório de viagem foram objeto de muita controvérsia, e a publicação do livro resultante da pesquisa não teve a chancela oficial da instituição. Um dos principais pontos de desacordo proveio da relutância manifestada por Hirschman quanto à adoção da análise de custo-benefício, que era então considerada a principal ferramenta de avaliação de projetos. O mecanismo, que se difundira entre os especialistas a serviço do Banco, tinha como vantagem presumida a possibilidade de ordenar os projetos a partir de um único indicador sintético, que era a taxa de retorno do empreendimento (KING, 1967). Desde sua proposta inicial, Hirschman (1963) manifestou sua descrença em relação a esse propósito, argumentando que se baseava em uma pretensão descabida de prever os custos e benefícios de um projeto

É bom notar que não faltava a Hirschman traquejo no manuseio de dados estatísticos, exibido desde seus primeiros escritos. Suas restrições diziam respeito, especificamente, à análise custo-benefício. A despeito do tom conciliatório que adota na segunda versão de sua proposta de pesquisa, a contundência de suas críticas volta a aumentar no relatório final e em *Development projects observed*. No livro Hirschman (1967, p. 175) censura o "cenário simplista" desenhado pelos adeptos da técnica, que não só desconsideravam completamente fatores de natureza política e social, seja no lado dos custos, seja no dos benefícios, como partiam da absurda suposição de um futuro plenamente previsível.

Na elaboração do relatório de pesquisa que originou o livro, Hirschman adverte que fez um esforço para "olhar além da tecnologia", ou seja, para investigar o ambiente social e cultural no qual projetos de desenvolvimento se implantam e buscam criar raízes. Na procura de explicação para as regularidades que observou, consultou uma vasta literatura de psicologia social - mais precisamente, da então florescente psicologia da percepção de Piaget e outros estudiosos. Isso o levou a reformular a célebre frase de Marx – "A humanidade sempre toma para si apenas os problemas que ela consegue resolver" -, transcrita mais de uma vez em seus cadernos de campo e reproduzida no primeiro capítulo de seu livro. A certa altura de suas anotações, Hirschman se dá conta de que a frase precisa ser reescrita - "A humanidade sempre toma para si apenas os problemas que ela pensa poder resolver". Dito de outra forma, os seres humanos frequentemente superestimam sua capacidade de resolver problemas, mas isso, paradoxalmente, coloca em ação mecanismos que lhes ajudam a resolvê-los. Produz-se uma dissonância cognitiva de sinal invertido, em que a ação concreta reduz o desajuste entre a realidade e a maneira como ela é percebida (MELDOLESI, 1995, p. 60).

É nesse ponto que o princípio da mão escondida (*hiding hand*), que dá título ao capítulo selecionado, torna-se realidade. Mais do que a ação de uma força cósmica ou o sopro de uma providência camarada, trata-se de um traço psicológico coletivamente forjado que desencadeia o mecanismo social capaz de conduzir à superação das dificuldades. Nos exemplos tratados por Hirschman, o problema causado pela subestimação da demanda de bambu na indústria de papel e celulose de Bangladesh foi contornado com a descoberta de matérias-primas alternativas; a reforma do sistema de pastagens no Uruguai obrigou proprietários absenteístas a permanecerem por mais tempo em suas terras, e assim impulsionou significativamente sua pecuária; e o projeto de irrigação do Rio San Lorenzo, no Peru, acabou por promover um vigoroso processo de transformação fundiária.

Algumas das mais persistentes convicções de Hirschman a respeito do processo de desenvolvimento encontram assim acolhida no texto selecionado. Além da tese de que não há uma receita universal capaz de prover solução para os problemas do desenvolvimento, trata-se da intuição de que o futuro é indeterminado, o que impossibilita definir de antemão as circunstâncias da implementação de um projeto. Nos episódios em que a mão escondida se faz presente, é como se um conjunto de agentes econômicos fosse vítima do autoengano. Poder público, empresários individuais e trabalhadores, empenhados no êxito de determinado projeto, superestimam sua capacidade de enfrentar as adversidades, mas, ao mesmo tempo, reagem positivamente uma vez que elas se manifestam.

Hirschman (1998) designa esse padrão de "possibilismo", em alusão à crença de que, embora difícil, a mudança é sempre possível, desde que os agentes sejam hábeis para explorar as circunstâncias. Outros comentaristas reforçam a centralidade dessa noção em sua obra (ADELMAN, 2013; LEPENIES, 2009). Eis que no princípio da mão escondida existe o germe de uma concepção do processo de aprendizado social, que permite o desenvolvimento. (CALAFATI, 2000; ELLERMAN, 2001). Decisões arriscadas implicam exposição ao erro, mas esta, por sua vez, proporciona oportunidades de aprendizado. A implementação de um projeto em circunstâncias de alta incerteza pode envolver uma longa viagem de descoberta através dos mais variados domínios, dos enigmas envolvidos na aplicação de uma nova tecnologia a revezes e oscilações de natureza física, econômica e política. É nessas circunstâncias que a criatividade humana tem oportunidade de florescer. Hirschman (1998, p. 96) manteve-se atento para detectar essa ocorrência, sempre mais interessado em "ampliar a área do possível, daquilo que pode ocorrer" do que em prever, com base em raciocínio estatístico, o que irá de fato acontecer.

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Outro aspecto importante a ser ressaltado no texto é a ideia de que a implementação de um projeto proporciona um tipo de conhecimento que vem com a prática, graças ao qual são corrigidas tendências resultantes de decisões prévias e desenvolvidos mecanismos para superar dificuldades, que não estavam e nem poderiam estar no horizonte do planejador (SCHÖN, 1994). Aqui se expressa a confiança de Hirschman em uma política formulada na atividade cotidiana e, mais ainda, uma política que proporciona um tipo de entendimento sem o qual a teoria não pode ser construída. Não há fórmulas prontas, não há receitas mágicas, mas isso não implica a impossibilidade de identificar padrões, a partir dos quais se possa preconizar uma terapêutica qualquer. Ocorre que a realidade é complexa e dinâmica, e as soluções devem ser encontradas no próprio processo de lidar com as dificuldades (ROTHSCHILD; SEN 2013). Pelo mesmo princípio, o investigador social deve ser capaz de refletir esse desafio da prática em sua teoria.

A metáfora da mão escondida exprime uma das ideias mais caras a Hirschman, que é a busca de racionalidades ocultas. Sua inspiração pode ser encontrada no conceito de consequências não intencionais da ação humana, cuja força se faz notar na obra clássica de Max Weber: ao assimilar uma certa ética, os líderes calvinistas, sem o saber (e sem mesmo ter essa intenção), acabam por favorecer o espírito do nascente capitalismo e difundir uma forma particular, historicamente consagrada, de fazer negócios e operar a economia.

Mas, cabe perguntar aqui, o princípio da mão escondida sempre atua no sentido de gerar consequências benéficas? Críticos como Streeten (1984) enxergam um excesso de otimismo na perspectiva de Hirschman, ao mesmo tempo que Cardoso (2013) o define como um "otimista cético".

Sem dúvida, tudo é possível na "aventura do desenvolvimento", e nem todas as histórias narradas por Hirschman têm um final feliz. No caso das ferrovias da Nigéria, brevemente tratado no texto selecionado, os agentes não conseguem superar seus conflitos e oferecer uma resposta satisfatória aos impasses surgidos. Segue-se que Hirschman não nega a possibilidade de consequências indesejadas, embora concentre sua atenção nos exemplos bem-sucedidos; possivelmente porque esta, mais do que outras noções que ele elabora, espelha o encanto com que o autor, testemunha ocular da "epopeia do desenvolvimento", foi capaz de descrevê-la para o mundo.

Para concluir, é possível dizer que o interesse despertado pelo capítulo selecionado para constar desta revista é tanto maior pelo caráter polêmico que exibe desde sua primeira versão. Hirschman definiu a si próprio como um dissidente, um economista não convencional. Sua atenção aos aspectos sociais do desenvolvimento

o identifica com outros pioneiros do campo, que deixaram uma marca importante, infelizmente abandonada na teoria mais recente.

No mais, algumas décadas se passaram desde que os escritos desenvolvimentistas de Hirschman foram dados a público, e as circunstâncias hoje vivenciadas pelas nações do mundo são com certeza bem diferentes. Se a teoria e a política não podem ser as mesmas, a grande lição que Hirschman transmite ao pesquisador contemporâneo é essa disposição para investigar a realidade sem desrespeitar sua condição de processo dinâmico e cheio de surpresas.

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CHAPTER ONE

## The Principle of the Hiding Hand

THE KARNAPHULI pulp and paper mill is one of the earliest large-scale industrial enterprises to have been set up in Pakistan after Partition and Independence. Planned by the official Industrial Development Corporation to utilize the vast resources of the bamboo forests of the Chittagong Hill Tracts along the upper reaches of the Karnaphuli River in East Pakistan, the mill started to operate in 1953. It had perhaps more than its share of technical and managerial teething troubles, but considerable progress had been achieved by 1959 when its management passed into private hands. Soon thereafter, a major upset endangered the very life of the mill: the bamboo began to flower, an event entirely unforeseen and probably unforeseeable in the present state of our knowledge since it occurs only once every fifty to seventy years: given the resulting paucity of observations, the life cycle of the many varieties of bamboo is by no means fully known. In any event, the variety that supplied the Karnaphuli mill with some 85 percent of its raw material flowered and then, poetically but quite uneconomically, died.

It was known that flowering of the bamboo results in death of the whole plant and in regeneration from the seeds rather than, as normally, from the rhizomes; but it was not known that the bamboo that dies upon flowering would be unusable for pulping since it would disintegrate upon being transported and floated down the river. Another unpleasant surprise was the discovery that, once flowering was over, a number of years would have to pass before the new bamboo shoots would grow to a size fit for commercial exploitation. In its seventh year of operation the mill therefore faced the extraordinary task of finding another raw material base.

In a temporary and costly way, the problem was solved by importing pulp, but other, more creative responses were not long in coming. An organization was set up to collect bamboo in villages throughout East Pakistan (the waterways crisscrossing the country make for cheap transportation of bulky cargo), sundry lumber was cut in the tracts, and, most important, a research program was started to identify other fast-growing species that might to some extent replace the unreliable bamboo as the principal raw material base for the mill. Permission was obtained to plant an experimental area of six square miles with several of the more promising species, and plans to cover a much larger area are underway. Thus, the crisis of the flowering bamboo may in the end lead to a diversification of the raw material base for the mill.

Looking backward it may be said that the Karnaphuli mill was "lucky": its planners had badly overestimated the permanent availability of bamboo, but the mill escaped the possibly disastrous consequences of this error by an offsetting underestimate—or, more correctly, by the unsuspected availability—of alternative raw materials.

The question I wish to explore is whether this experience really was a matter of pure luck or whether there are reasons to expect some systematic association of such providentially offsetting errors. A similar phenomenon often occurs in successful irrigation and irrigation-hydroelectric projects: the river that is being tapped is frequently found not to have enough water for all the power, agricultural, industrial, and urban uses that had been planned or that are staking claims, but the resulting shortage can then often be remedied by drawing on

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other sources that had not been within the horizon of the planners: ground water can be lifted by tubewells, the river flow can be better regulated through upstream dams, or the water of more distant rivers can be diverted. At present such plans are afoot for the San Lorenzo irrigation scheme in Peru, and for the Damodar Valley in India, among our projects; a similar overestimate of the waters available from the to-beharnessed river which can, however, be corrected by "newly discovered" water from other rivers and areas has been reported for the Bhakra Nangal project in India "though no specific provision was made in the project for the investment on this account."

It would obviously be silly to expect that overestimates of the availability of a given material resource are always going to be offset by underestimates of alternative or substitute resources; but if we generalize a little more, we obtain a statement that no longer sounds wholly absurd: on the contrary, it is quite plausible and almost trite to state that each project comes into the world accompanied by two sets of partially or wholly offsetting potential developments: (1) a set of possible and unsuspected threats to its profitability and existence, and (2) a set of unsuspected remedial actions that can be taken should a threat become real.

The experience of several of the projects visited fits this very broad proposition. For example, the San Lorenzo irrigation project in northern Peru suffered serious, and at times exasperating, delays caused by political change and second thoughts on the kind of irrigation farming the project should promote. But the considerable economic losses implied by the delays were in part offset by the fact that, as a result of the second thoughts, the San Lorenzo irrigation eventually became a pilot

1. K. N. Raj, Some Economic Aspects of the Bhakra Nangal Project (Asia Publishing House, 1960), pp. 53, 58.

project for the subdivision of land into small but viable family farms and for the granting of credit and technical assistance to previously landless farmers. The project thus set an entirely new pattern for Peruvian agriculture and turned unexpectedly into a breeding ground for administrators who could apply elsewhere in Peru the lessons learned in San Lorenzo.

The Uruguayan livestock and pasture improvement project also experienced extraordinary delays, first because of slowness in political and administrative decision making and then because the key technical task of improving the natural grasslands by introduction of legumes into the soil turned out to be unexpectedly complex. Yet the solutions that were gradually found through scientific research and practical experimentation and were then applied over an expanding area have now started to make this program into a particularly successful operation and have served to spread the spirit of innovation among a large group of Uruguayan farmers.

Somewhat similar sequences can be found in other projects, although the experience of the Nigerian Railway Corporation serves as an emphatic warning that by itself trouble does not constitute a sufficient condition for a "creative response."

The common structure of the Pakistani, Peruvian, and Uruguayan projects can now be formulated as follows:

- 1. If the project planners (and this usually includes the World Bank officials involved in financing the project) had known in advance all the difficulties and troubles that were lying in store for the project, they probably would never have touched it, because a gloomy view would have been taken of the country's ability to overcome these difficulties by calling into play political, administrative, or technical creativity.
- 2. In some, though not all, of these cases advance knowledge of these difficulties would therefore have been unfortunate, for the difficulties and the ensuing search for solutions

set in motion a train of events that not only rescued the project but often made it particularly valuable.

WE MAY BE DEALING HERE with a general principle of action: Creativity always comes as a surprise to us; therefore we can never count on it and we dare not believe in it until it has happened. In other words, we would not consciously engage upon tasks whose success clearly requires that creativity be forthcoming. Hence, the only way in which we can bring our creative resources fully into play is by misjudging the nature of the task, by presenting it to ourselves as more routine, simple, undemanding of genuine creativity than it will turn out to be.

Or, put differently: since we necessarily underestimate our creativity, it is desirable that we underestimate to a roughly similar extent the difficulties of the tasks we face so as to be tricked by these two offsetting underestimates into undertaking tasks that we can, but otherwise would not dare, tackle. The principle is important enough to deserve a name: since we are apparently on the trail here of some sort of invisible or hidden hand that beneficially hides difficulties from us, I propose the Hiding Hand.

Before relegating the Hiding Hand to the developing countries as its special realm, we shall briefly elaborate the statement that we may be dealing here with a fairly general phenomenon that permits us to understand or reinterpret certain aspects of human behavior and history. The principle suggests that, far from seeking out and taking up challenges, people typically take on and plunge into new tasks because of the erroneously presumed absence of a challenge, because the task looks easier and more manageable than it will turn out to be.

What we are trying to say can be well conveyed by taking Marx's famous sentence: "Mankind always takes up only such problems as it can solve," and by modifying its wording slightly, but its meaning fundamentally, to read: "Mankind always takes up only such problems as it thinks it can solve." Addition of the italicized words thoroughly blurs the neat determinacy of Marx's original statement; for, with this version, it is possible that, as a result of various misconceptions about its problem-solving ability, "mankind" will take up either more or fewer problems than it actually can solve at the moment it takes them up. Up to a point, the Hiding Hand can help accelerate the rate at which "mankind" engages successfully in problem-solving: it takes up problems it thinks it can solve, finds they are really more difficult than expected, but then, being stuck with them, attacks willy-nilly the unsuspected difficulties—and sometimes even succeeds.

Looking backward on this kind of sequence, an interpretation in terms of some challenge-and-response mechanism seems to be quite consistent with the facts and, of course, it is much more flattering to our ego. Indeed, people who have stumbled through the experience just described will tend to retell it as though they had known the difficulties all along and had bravely gone to meet them—fare bella figura is a strong human propensity.<sup>2</sup> While we are rather willing and even eager and relieved to agree with a historian's finding that we stumbled into the more shameful events of history such as war, we are correspondingly unwilling to concede—in fact we find it intolerable to imagine—that our more lofty achievements, such as economic, social, or political progress, could have come about by stumbling rather than through careful planning, rational behavior, and the courageous taking up of a

<sup>2.</sup> Exceptions to this behavior are provided by exceptional men such as Luther who, upon looking back on his life, acknowledged the role of the Hiding Hand most explicitly: "Had I known all in advance, God would have been put to great trouble to bring me to it.... God has led me on as if I were a horse and he put blinkers on me so that I could not see who came running up upon me." Quoted from the Tischreden in Wilhelm Pauck, The Heritage of the Reformation (rev. ed.; Free Press, 1961), pp. 20–21. This passage was shown to me by Lisa Hirschman.

clearly perceived challenge. Language itself conspires toward this sort of asymmetry: man falls into error, but not into truth.

WHILE SOME PRESENCE of the Hiding Hand may be helpful or required in eliciting action under all latitudes, it is no doubt specially needed where the tradition of problem-solving is weak and where invention and innovation have not yet been institutionalized or routinized. In other words, in developed countries less hiding of the uncertainties and likely difficulties of a prospective task is required than in underdeveloped countries where confidence in creativity is lacking. In the former there are large numbers of achievement-motivated actors who have acquired "the conviction that [they] can modify the outcome of an uncertain situation by [their] own personal achievements";3 in the latter, on the contrary, new tasks harboring many unknowns must often be presented as though they were all "cut and dried" in order to be undertaken. Hopefully, the experience that difficulties can be successfully handled will eventually permit a more candid appraisal of tasks and projects.

The Hiding Hand principle has several fairly close relatives. The idea that failure fully to visualize prospective internal costs can be growth-promoting is, in a sense, an extension of the more familiar and more obvious thought that disregard of the costs a new project or industry will inflict on third parties—that is, failure to internalize external costs—can serve as a stimulus to enterprise. In both cases, total costs are underestimated and investment decisions activated in consequence.

<sup>3.</sup> David C. McClelland, The Achieving Society (Van Nostrand, 1961), p. 224.

<sup>4.</sup> I discussed this possibility at some length in The Strategy of Economic Development (Yale University Press, 1958), pp. 57-61. Failure to internalize external costs is probably most typical of new ventures in product-substituting (rather than product-adding) industries, while the failure fully to visualize internal costs affects the various categories of public and private investment decisions in quite a different pattern. See below, pp. 17-21.

There is, however, an important difference: When internal costs or difficulties are inadequately visualized, the project or firm will find itself in financial trouble unless an offset to these costs is encountered. When external costs are disregarded, on the other hand, the venture can yield a private profit without further ado. Nevertheless, the external costs too require an offset if the venture is to be judged a success from society's point of view.<sup>5</sup>

An even closer approximation to the Hiding Hand principle was formulated several years ago by an economic historian, John Sawyer, Having looked at development projects that were undertaken in the first half of the nineteenth century in the United States, he noted that underestimates of cost resulting from "miscalculation or sheer ignorance" were, in a number of great and ultimately successful economic undertakings-particularly in transport and in the opening up of new resources— "crucial to getting an enterprise launched at all." "Had the total investment required been accurately and objectively known at the beginning, the project would not have been begun." The eventual success of these ventures, in spite of the large initial miscalculation and the consequent financial trouble at various stages, derived from the fact that, once the necessary funds were secured and the project was brought to completion, "the error in estimating costs was at least offset by a corresponding error in the estimation of demand."6

The resemblance between this idea and the Hiding Hand principle is obvious. There is a double underestimate of both costs and benefits in Sawyer's scheme, while we have observed similarly, if more broadly, a double underestimate of the variout difficulties that lie across the project's path, on the one

<sup>5.</sup> For the nature of this offset, see ibid., p. 61.

<sup>6.</sup> John E. Sawyer, "Entrepreneurial Error and Economic Growth," Explorations in Entrepreneurial History, Vol. 4 (May 1952), pp. 199,

hand, and of the ability to solve these difficulties, on the other. The difference is that Sawyer's model is focused primarily on the underestimate of costs which is presented as being due to the entrepreneur's activity drive and optimism combined with the knowledge that there is a ceiling to the amount that can be raised for the project. The underestimate of benefits is unexplained and acts rather as a deus ex machina to save selected projects that turn out to cost much more than expected.

In our Hiding Hand principle, Sawyer's unexplained underestimate of benefits becomes the underestimate, on the part of the project planner, of his own problem-solving ability and. as we have seen, this underestimate has a satisfactory rationale. The principle then goes on to state that in view of this underestimate an offsetting underestimate of the difficulties themselves is required so that perfectly feasible and potentially productive projects will actually be undertaken. We shall now explore in more detail the circumstances under which the Hiding Hand is likely to come into play. Which are the projects, in other words, that tend to be undertaken because their difficulties are liable to be underestimated? And which ones tend to be systematically neglected because their difficulties are too obvious? These questions make it evident that the Hiding Hand, while permitting an increase in the rate at which projects are taken up, also leads to a bias in project selection.

It becomes clear, for example, that projects derive a crucial advantage from being based on a technique that looks transferable even though it may not actually be nearly as copiable as it looks. This is perhaps a principal reason that infrastructural and industrial projects have so large an edge over others: not that the techniques involved are in fact so exceedingly transferable, for time and again industrial projects, particularly those that are not limited to administering "last touches" to a host of imported semifinished inputs, run into considerable

technical and managerial difficulties when they are transplanted to a different environment. But factories look as though they could be picked up and dropped anywhere, whereas in such activities as agriculture and education the need for adaptation and the concomitant problems are immediately obvious. Industry thus lends itself eminently to the operation of the Hiding Hand, whereas agricultural projects suffer from the abandon and sincerity with which they flaunt their prospective difficulties.

This conclusion is reinforced when the principle of the Hiding Hand is viewed in the perspective of time. For its mechanism to work, it is necessary that the operators be thoroughly "caught" by the time the unsuspected difficulties appear—caught in the sense that having spent considerable money, time, and energy and having committed their prestige, they will be strongly motivated to generate all the problem-solving energy of which they are capable.

Just as the Hiding Hand principle states that the to-beexperienced difficulties should be hidden at the moment of the decision to go ahead with the project, so it *implies* that these difficulties should not appear too early after the execution of the project has started, for, at least within a certain range, the propensity to tackle the difficulties will be roughly proportional to the effort, financial and otherwise, already furnished. Therefore, a given level of difficulties may be wholly discouraging for the prosecution of the project if it turns up early, while it would be tackled with alacrity and perhaps solved if it arose at a later stage.

7. In the last section of this chapter, we discuss the exaggeration of benefits as an action-inducing mechanism which is an alternative to the Hiding Hand when a project's prospective difficulties are too obvious to be hidden away. But agricultural projects do not lend themselves too well to the operation of this mechanism either.

In spite of the somewhat paradoxical ring of this assertion—paradoxical only because medical science has impregnated us with the notion that the sooner a malady is recognized and diagnosed the better—it appears to be confirmed by experience with development projects, and it again underlines the disadvantageous position of agricultural as compared with industrial and infrastructural projects. With the (important) exceptions of irrigation and tree-crop projects, agricultural projects have a short gestation period and therefore production or marketing difficulties unfold rather soon after the projects have been started; hence, attempts to rescue them are often half-hearted and they are readily pronounced failures and abandoned. This is the story of many colonization projects in Latin America and Africa.<sup>8</sup>

In projects with longer gestation periods and more permanent structures, similar difficulties tend to appear much later, and far more serious efforts are made to overcome them. This difference between projects with short and long gestation periods is well illustrated by the contrasting fates of the East African Groundnut Scheme and the Owen Falls Hydroelectric Station in Uganda. Undertaken at the same time (in the immediate postwar period), in the same region, by the same kind of colonial administrators wishing to turn over a new progressive leaf and harboring similar illusions about the nature of the development process, both schemes were financially unsuccessful during their early years. The Groundnut Scheme was soon abandoned and hardly anything remains of it; the Owen Falls Station, on the other hand, had many lean years,

8. It is difficult to gain an understanding of the history of these projects, for they leave hardly any trace behind as the once-to-be-colonized lands revert to bush and the project planners and operators to silence. One good case study is in K. D. S. Baldwin, The Niger Agricultural Project: An Experiment in African Development (Harvard University Press, 1957).

but it endured and finally came into its own and will soon have to be supplemented by new generating capacity. Once it had become clear that the originally anticipated industrial boom in the Owen Falls area was not going to materialize, the Uganda Electricity Board made an effort to tap new markets for its power, building transmission lines to neighboring Kenya at first and then to a host of smaller industries and towns of Uganda.

By itself, the mere ability of the Owen Falls Station to survive cannot of course be taken as a vindication of the original investment decision. While later administrators were right in considering as bygone the heavy costs that had been sunk into the project in its early years, the project as a whole may still have to be given a poor mark. It is well known that with longgestation projects one runs the risk that good money will be thrown after bad. We are here pointing out that shortgestation projects are subject to the opposite risk: the failure to throw good money after what looks bad, but could be turned into good, if only the requisite rescue effort were forthcoming. When, as is often the case, the outcome of such an effort is highly uncertain at the time it is undertaken, the probability that the effort will be made increases with the costs that will have been sunk into the project by the time the difficulties appear.9

The foregoing remarks permit a policy conclusion: Projects whose potential difficulties and disappointments are apt to

<sup>9.</sup> This proposition is related to the findings of psychologists that members of a club or group who have paid high initiation fees or gone through severe initiation rites are liable to find the group activities more fascinating than low-fee members. Compare E. Aronson and J. Mills, "The Effects of Severity of Initiation on Liking for a Group," Journal of Abnormal and Social Psychology, Vol. 59 (1959), pp. 177–81. In the same spirit, we are suggesting in the text that when there is room for making the group activities more interesting, the required initiative is likely to be forthcoming from the high-fee, rather than from the low-fee, members.

manifest themselves at an early stage should be administered by agencies having a long-term commitment to the success of the projects. They should be developed as much as possible in an experimental spirit, in the style of a pilot project gathering strength and experience gradually, so that they may escape being classed and closed down as failures in their infancy. The Uruguayan livestock and pasture improvement project followed both these precepts and has thus been able to survive and to achieve maturity and success.

PROMOTERS AND DEVELOPERS must long have been dimly aware of the Hiding Hand principle, for they have been remarkably adept at finding ways in which projects that would normally be discriminated against because they are too obviously replete with difficulties and uncertainties can be made to look more attractive to the decision maker.

One widely practiced method consists in pretending that a project is nothing but a straightforward application of a wellknown technique that has been used successfully elsewhere. For example, for a number of years after World War II, any river valley development scheme, whether it concerned the São Francisco River in Brazil, the Papaloapan River in Mexico, the Cauca in Colombia, the Dez in Iran, or the Damodar in eastern India, was presented to a reassured public as a true copy-if possible, certified expressly by David Lilienthal-of the Tennessee Valley Authority. Although obviously two river valley development schemes will differ vastly more from one another than two Coca Cola bottling plants, the impression was created, by the appeal to the "TVA model," that clear sailing lay ahead for the proposed schemes. To be acceptable, it seems, a project must often be billed as a pure replica of a successful venture in an advanced country.

It is no doubt a pity that ventures that are 90 percent indigenous initiative and execution and 10 percent imitation of a foreign model are regularly presented to the public as though the percentages were, in fact, reversed, but this seems to be the price that must sometimes be paid to "sell" projects that would otherwise look too forbidding.

This attempt at making a project's path look smoother than it is may be termed the "pseudo-imitation" technique. When the novelty or difficulty of the task is too obvious for this technique to be plausible another method is often used. It consists in dismissing previous efforts at solving the task as "piecemeal" and in pretending to more insight than is actually available by drawing up a "comprehensive program." It can be called the "pseudo-comprehensive-program" technique.<sup>10</sup>

An excellent example of this technique is supplied by the Uruguayan livestock and pasture improvement project. It started with the avowed aim of "implementing" a joint mission report issued in 1951 by the World Bank and the United Nations Food and Agriculture Organization. The report's recommendations covered an extremely wide spectrum, as will appear from the following incomplete list of topics: subdivision of pastures by fences, grazing trials, tree plantings on permanent grasslands, introduction of legumes, increased use of lime and phosphate, shrub eradication, works to control runoff water, establishment of fodder reserves through silage and hay, better storage facilities, changes in the cropping system to include legumes, establishment of diversified farming combining harvested crops and livestock, improvement in productivity by irrigation, tillage practices, weed and pest control, erosion control, control of animal disease, improvement in transportation, storage and marketing, organization of research

10. This technique is a variant of the "pseudo-creative" response which I discussed in Journeys Toward Progress: Studies of Economic Policy-Making in Latin America (Twentieth Century Fund, 1963), pp. 239 ff.

and technical services, appropriate price and other economic policies, etc.<sup>11</sup>

Such a report tends to give the policy makers and project planners the illusion that the "experts" have already found all the answers to the problems and that all that is needed is faithful "implementation" of these multifarious recommendations. In fact, Uruguayan agriculture had shown prolonged and stubborn resistance to many of the report's proposals which were by no means new; the reason was that considerable and difficult breakthroughs remained to be achieved in technical, organizational, and other realms. But the comprehensive-program technique underplays this need for imagination, insight, and the application of creative energies, and the project planners are, as it were, tricked into undertaking a program whose real difficulties will only gradually become apparent to them.

The comprehensive program whose many components are given equal emphasis and are pronounced to be interrelated in effect covers up the ignorance of the experts about the real cure of the malady they have been summoned to examine; if they knew, they would be proposing a far more sharply focused program. Incidentally, the diffuse kind of program provides at the same time an excellent alibi to the experts in case anything goes wrong: since it is practically impossible to carry out all the proposed actions, any troubles can be blamed on the failure to follow the experts' instructions rather than on the shortcomings of their advice.

Real interdependencies exist, no doubt, and a multipronged attack on a problem is therefore often necessary. But a comprehensive program that stems from real insight into the problem

11. International Bank for Reconstruction and Development and Food and Agriculture Organization of the United Nations, The Agricultural Development of Uruguay, 1951. (Processed.)

will be easy to distinguish from one that is a smoke screen for ignorance, for in the former the nature of the interdependencies will be clearly spelled out and an effort will have been made, in the interests of feasibility, to limit the number of activities that have to be undertaken concurrently.<sup>12</sup> This sort of minimization of balanced growth requirements which has all the marks of insight into the problem was evident in a 1964 plan for the creation of an industrial pole in the Taranto-Bari-Brindisi area in southern Italy: a deliberate effort was made to determine a strictly limited number of establishments producing intermediate goods and providing services, such as tool making, that would have to be available if a certain group of newly planned mechanical industries were to find it attractive to locate at the "pole." <sup>18</sup>

Regional development programs supply additional illustrations that certain comprehensive programs function, in effect, as "servants" of the Hiding Hand. Here also the programs traced out in advance must be as comprehensive and multifarious as possible to build up the morale of the slightly frightened decision makers; for, in addition to overcoming their ignorance about the path to progress for their region or valley, they must do battle with various powerful contrary interests and must therefore form as broad a coalition as pos-

<sup>12.</sup> A recent, very interesting attempt to formulate a theory of design has come to a similar conclusion: the correct method for solving design problems when the ultimate solution has to satisfy numerous interdependent requirements is not to treat the system of requirements as an interdependent whole, but to define "isolable subsystems," that is, subsystems among which there is a minimum amount of interdependence, and then to adjust the resulting partial designs to each other. Christopher Alexander, Notes on the Synthesis of Form (Harvard University Press, 1964), pp. 40–43 and passim.

<sup>13.</sup> Italconsult, Studio per la promozione di un polo industriale di sviluppo in Italia Meridionale (Rome, 1964), Pt. 2, Chaps. 3-4. (Processed.)

sible by promising something to every important section within the region or valley.

The foregoing is a fairly accurate description of what happened in the case of the development program for Italy's south. The Cassa per il Mezzogiorno was charged with undertaking a vast complex of programs and its activities reached virtually into every nook and cranny of its huge territory. But in the course of undertaking its public works programs, the Cassa soon learned that some were far more efficient and growthpromoting than others. In 1958 a prominent meridionalist, distinguishing between the (unserviceable) "bones" and the (valuable) "meat" of southern agriculture, pointed out that the "meat"—the portion where Cassa investments could be expected to yield high returns-comprised only about half a million hectares of irrigated or irrigable valley lands. Most of the rest of the area where the Cassa had operated—some 11 million hectares—were now dismissed as "bones."14 The Cassa's proposed concentration of effort on irrigable land became in effect its new agricultural program when the agency's life was extended for a further period of fifteen years in 1965. It was far removed from the all-inclusive approach the Cassa had set out to implement; but just as the managers of Uruguay's livestock program had come to realize that the key to agricultural progress was the introduction of legumes, so the Cassa had found out in fifteen years of "implementation" of its comprehensive program that the larger payoffs of its agricultural program were to be obtained by concentration on the few fertile flat areas that dot the coastal lands of the south.

14. Manlio Rossi-Doria, Dieci anni di politica agraria nel Mezzogiorno (Bari, Italy: Laterza, 1958), p. xix. In this, his original formulation of the meat-bones (polpa-osso) dichotomy, Rossi-Doria included 1.5 million hectares suitable for highly productive nonirrigable tree crops and vineyards in the "meat." But in later usage, this term became increasingly restricted to irrigable lands.

THE TWO PURVEYORS of the Hiding Hand—the pseudoimitation technique and the pseudo-comprehensive-program technique—are nicely complementary: the former makes projects appear less difficulty-ridden than they really are, whereas the latter gives the project planners the illusion that they are in possession of far more insight into the projects' difficulties than is as yet available. Both techniques act essentially as crutches for the decision maker, permitting him to go forward at a stage when he has not yet acquired enough confidence in his problem-solving ability to make a more candid appraisal of a project's prospective difficulties and of the risks he is assuming. The experience of meeting with these difficulties and risks and of being able to deal with them should then enable him to discard these crutches and to achieve a more mature appraisal of new projects. The recourse to the Hiding Hand thus becomes less necessary as development proceeds, and one of the indirect benefits of projects is precisely that the willingness of the decision maker to face uncertainty and difficulty is increased. The Hiding Hand is essentially a mechanism that makes the risk-averter take risks and in the process turns him into less of a risk-averter. In this manner, it opens an escape from one of those formidable "prerequisites" or "preconditions" to development; it permits the so-called prerequisite to come into existence after the event to which it is supposed to be the prerequisite. In our model, risk-taking behavior is engaged in actively (though involuntarily) prior to the arrival on the stage of the "risk-taking, achievement-motivated personality"; instead, it is this personality that is fashioned by risktaking behavior.15

<sup>15.</sup> For a general argument about this sort of inverted sequence, and an appeal to the theory of cognitive dissonance for explaining it, see my article, "Obstacles to Development: A Classification and a Quasi-Vanishing Act," Economic Development and Cultural Change, Vol. 13 (July 1965), pp. 385-93.

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The Hiding Hand model is helpful in understanding the process of growth from yet another point of view. It has often been remarked that what is most needed at an early stage in development is unqualified success for the ventures that are undertaken so that the spirit of entrepreneurship may become strong and widely spread. But this prescription is singularly unhelpful since in the early stages of any development effort numerous disappointments are inevitable, and mere survival is a feat for the innovator. How is development possible then? Perhaps because among many of the ventures that do survive, the Hiding Hand has been at work: in them, the entrepreneurs' experience will have been neither wholly better nor entirely worse than expected, but in a sense both worse (getting into unsuspected trouble) and better (getting unexpectedly out of it); and even though their financial success is not striking, the resulting infusion of confidence, and perhaps the discovery of a more "exciting" way of life, will strengthen the spirit of enterprise.

In effect, then, the contribution of development ventures depends not only on their—properly discounted—financial returns, but on important side effects which will often be reflected in the time shape of these returns. Specifically, when a venture has gone through considerable teething trouble as a result of the intervention of the Hiding Hand, it is likely to deserve a higher ranking than one with a similar return but no such experience.

We have ended up here with an economic argument strikingly paralleling Christianity's oft expressed preference for the repentant sinner over the righteous man who never strays from the path of virtue. And essentially the same idea, even though formulated, as one might expect, in a vastly different spirit, is found in Nietzsche's maxim "That which does not destroy me, makes me stronger." This sentence admirably epitomizes several of our project histories.

HAVING ACHIEVED, in a roundabout way, a convergence of benefit-cost analysis with the teachings of philosophy and religion, I should probably stop right here. Unfortunately, however, this dramatic effect must be spoiled; for something must be said about the dangers and failures of the Hiding Hand. As noted before, its principal usefulness is in inducing riskaverters to commit themselves to risk-taking behavior. This commitment permits an acceleration of economic growth; as a result of their experiences, decision makers are likely to become readier to look newly emerging risk-laden situations straight in the face. The Hiding Hand is thus essentially a transition mechanism through which decision makers learn to take risks, and the shorter the transition and the faster the learning the better. For this mode of learning about risk is not without grave dangers. One has to be rather lucky to be lured by the Hiding Hand into ventures whose emergent problems and difficulties can be successfully tackled. As long as one needs this "crutch" in order to act, the probability of committing major errors and of undertaking projects that will turn into failures is obviously higher than when he is able to differentiate between acceptable and nonacceptable risk.

Moreover, those servants of the Hiding Hand—the pseudo-imitation and the pseudo-comprehensive-program techniques—have hardly been described in flattering terms. One reason is precisely that while these techniques facilitate decision making, they can easily be habit-forming rather than self-liquidating. The camouflage they use to disguise pioneering entrepreneurship may go undetected for a long time and may continue to be used when it is no longer needed. Moreover, these techniques have a number of undesirable side effects. The pseudo-imitation technique will not permit a country to reap the full psychological benefit of the ventures successfully launched under its auspices since there will remain a lingering feeling that any achievement is due to the imitation of a for-

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eign model. The pseudo-comprehensive-program technique may, even after a favorable outcome, leave a sense of disappointment and frustration; for, if our description of the process by which insight into the problem is finally achieved is correct, then a number of originally enunciated measures and objectives that were important elements in the "comprehensive program" will no longer be actively pursued once the most promising approach is discovered. As a result, public opinion will tend to lament the abandonment of originally much touted programs and the project, even though a success, will leave behind a vague sense of failure. This is exactly what happened when the Cassa decided to pick the "meat" from the "bones" and when the Damodar Valley Corporation concentrated its work more and more on power generation.

BEFORE CONCLUDING it may be of interest to place the phenomenon here described in a wider context. The Hiding Hand is essentially a way of inducing action through error, the error being an underestimate of the project's costs or difficulties. As Sawyer noted for his related theory of entrepreneurial error, the argument smacks uncomfortably of "praise of folly"—a praise that is sometimes deserved but always needs to be narrowly circumscribed.

We bestowed limited praise on the Hiding Hand because, by hiding prospective difficulties and by thus inducing an underestimate of costs, it serves to offset another error that project planners are liable to commit through their propensity to underrate their own inventiveness and problem-solving ability; when this propensity is present, the chances for correct project decisions to be taken will actually improve, up to a point, as the Hiding Hand does its handiwork. Suppose, however, that prospective difficulties stand clearly revealed and that the actors are afflicted by the same lack of self-confidence; the prospective costs will now tend to be overestimated, and

the only remaining way by which action on perfectly feasible projects can still be induced is through a corresponding over-estimate of the prospective benefits—we need a magnifying glass for benefits, to take the place of the mechanism that hid the difficulties and shrunk the costs. Thus, the same basic infirmity, namely lack of confidence in one's ability to overcome difficulties, requires correction either by understating the difficulties or by compensating the exaggerated image they project by a similar exaggeration of the project's expected accomplishments

Exaggeration of prospective benefits is at least as common a device to elicit action as underestimation of costs. This error, specially when it is combined with an underestimate of costs, has of course often led to disaster—history abounds with examples, from bankruptcies and white elephants to lost or ruinously won wars. But just as the hiding of costs, the exaggeration of benefits can occasionally serve to ward off another, less visible, but nonetheless real, disaster: missed opportunity.

This is the case when difficulties in the project's path are unhideable. Take, for example, projects that clearly require from the start the making of politically difficult decisions such as a change in existing administrative structures around which considerable vested interests have gathered. This was the case of the Damodar Valley Corporation whose basic charter meant surrender of important powers of the states of West Bengal and Bihar (and to some extent also of the central government) to the new agency. To justify so unprecedented a move, it became necessary for the promoters of the agency to make such extravagant claims as that it would transform the Damodar Valley into "India's Ruhr" or that it would promote rapid, harmonious, and integrated development of all of the valley's natural and human resources, when in effect its task was rather narrowly limited to flood control, electric power generation, and some irrigation.

Extravagance in promising future benefits can thus often be found and may play a useful role in those development projects that require difficult initial decisions, be it a change in existing institutions or a fiscal sacrifice demanded of some or all of the citizenry. Actually the promise of some sort of utopia is most characteristic of larger-scale undertakings such as the launching of social reforms or of external aggression because they are likely to require heavy initial sacrifices.

Recourse to the utopian vision as a stimulant to action has on occasion been advocated in a sweeping way. The Hiding Hand or, in its absence, the exaggeration of benefits has been considered useful as a means of dealing with a specific and temporary infirmity of some societies, that is, man's inadequate acquaintance with his ability to solve difficulties. A far more generalized pessimism about human nature as weak-willed, routine-ridden, and decadence-prone led Georges Sorel to the belief that humanity required "myths"—inspiring images of battle and triumph—for any substantial forward movement. He was so well aware of the disproportion between the promises of these myths and the ensuing reality that he simply vetoed what is today called project reappraisal: "We should be especially careful," he said, "not to make any comparison between accomplished fact and the picture people had formed for themselves before action."16 It is strange that Sorel did not realize how unlikely it was that his injunction against looking back would be heeded any more than that of Hades to Orpheus.

A far more appealing and convincing defense of the occasional need for exaggeration of prospective benefits appears in an essay by Kolakowski, the Polish philosopher:

<sup>16.</sup> Reflections on Violence, trans. T. E. Hulme (Peter Smith, 1941), p. 22.

The simplest improvements in social conditions require so huge an effort on the part of society that full awareness of this disproportion would be most discouraging and would thereby make any social progress impossible. The effort must be prodigally great if the result is to be at all visible. . . . It is not at all peculiar then that this terrible disproportion must be quite weakly reflected in human consciousness if society is to generate the energy required to effect changes in social and human relations. For this purpose, one exaggerates the prospective results into a myth so as to make them take on dimensions which correspond a bit more to the immediately felt effort.... [The myth acts like] a Fata Morgana which makes beautiful lands arise before the eyes of the members of a caravan and thus increases their efforts to the point where, in spite of all their sufferings, they reach the next tiny waterhole. Had such tempting mirages not appeared, the exhausted caravan would inevitably have perished in the sandstorm, bereft of hope.17

This fine passage permits two observations. First of all, in contrast to what must have been Sorel's assumption when he issued his injunction against looking back, the Kolakowski image definitely conveys the message that the effort of the caravan was worth the cost and the suffering since it permitted survival. Secondly, the effort would not have been forthcoming had there not been the Fata Morgana, that is, a rather serious overestimate of the benefits.

The similarity to the justification for the Hiding Hand is striking. In Kolakowski's thought (which is of course concerned with large-scale sociopolitical movements and action rather than with development projects) the exaggeration of benefits is required for precisely the reason indicated earlier: the actors underestimate the strength that is left in them; therefore the to-be-furnished effort is felt as "impossible" until the required social energy is generated by the mirage.

17. Leszek Kolakowski, Der Mensch ohne Alternative (Munich: R. Piper, 1961), pp. 127–28. My translation from the German translation.

The Fata Morgana image contains one other suggestion, rather different from the use Kolakowski makes of it: there may be special difficulties in visualizing in advance intermediate outcomes or partial successes such as the "tiny waterhole." In other words, the utopian vision may be necessary not so much to offset the inflated costs of the proposed enterprise as to compensate for an infirmity of man's imagination; for even though costs may not appear unduly high, man may simply be unable to conceive of the strictly limited, yet satisfactory, advances, replete with compromises and concessions to opposing forces, which are the very stuff of "incremental politics" 18 as well as the frequent result of ambitious socioeconomic development moves. The Damodar Valley story furnishes a good illustration for this kind of development: from the early fifties on, the Damodar Valley Corporation was increasingly hemmed in by encroachments on its original powers by the states of West Bengal and Bihar, and little remained in the mid-1960's of the majestic vision of integrated development of the valley's resources under the agency's unified command; yet the contribution of the agency's installations to industrial, urban, and resource development has fully justified the major portion of the investments the agency undertook, and it is doubtful that these investments would have been made without the stimulus of the initial vision.

We have now identified two situations in which overestimates of benefits can play a positive role: (1) when, because of inexperience in problem-solving, the actors have an exaggerated idea of the costs and difficulties of action, and (2) when, because of inexperience with the actual processes of change, the actors are unable to visualize intermediate outcomes and limited advances. As in the case of the Hiding Hand with its

<sup>18.</sup> David Braybrooke and C. E. Lindblom, A Strategy of Decision (Free Press, 1963), pp. 71-77.

underestimate of costs and difficulties, and pending the correction of these various inexperiences, the overestimate of benefits must therefore be recognized as a useful development mechanism for a transitional phase.

But, for the reasons already given, it is much to be desired that this transitional phase be short. The very descriptionexposé of these mechanisms of self-deception that has been attempted here may persuade project planners to dispense with these crutches as soon as it is possible for them to do so.

A more effective cure could come with improved knowledge of various aspects of project behavior. To acquire elements of such knowledge is the purpose of the next chapters.