

Floating Contracts: A New Way to Resolve the Prisoner's Dilemma and Achieve Social Change

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Abstract: The prisoner's dilemma affects human welfare at all levels, adversely affecting everything from a local art program to global warming and border disputes. The standard approach to resolving it is government action. However, in the age of the Web, we are presented with a new mechanism for suppressing the prisoner's dilemma, namely, conditional contracts on a large scale. Items which benefit a large group of people, possibly in varying degree, may be purchased in concert, and only when enough people and money are willing to do so. The approach contrasts with government because only willing participants bear the financial costs. The approach also contrasts with charity in a few ways. There are no stages to the drive. Money is never spent on a lost cause. Most importantly, it does not rely on altruistic good will or "feel-good" sense of identity gained from participating in a cause. Although such factors may contribute, the floating contract is designed to be executed when the individual will receive direct advantages which exceed her contribution. In its essence, it is like an n -fold corporate matching scheme, where n is in the thousands or the millions. The cost of organizing such contracts has until quite recently been extremely high. At this moment, however, it is quite low, awaiting only a public awareness of the technique. Among the most important applications are the world wide purchase of items with low marginal cost of production, such as vital medicines for AIDS and malaria, or music, or computer programs. However, wherever the prisoner's dilemma is suppressing the best outcome for human beings, the floating contract can serve its function, from supporting public radio to persuading nation states to abandon conflicting territorial claims.

1. Introduction and Nomenclature: The Problem of Group Goods

Any object or outcome which benefits people more than it harms others may be considered a commodity. The next goal is to enable the willing transfer of wealth requisite to ensuring that everyone benefits from the introduction of the object or the accomplishment of the outcome. Such is the moral function of markets. Before we describe markets and alternatives to them in detail, we should first characterize the commodities or goods with which they deal. For the purposes of this paper, only one dimension is important, namely the number of people and the extent to which they

are benefited (or harmed) by the outcome. The benefit of the outcome as it is spread across all people is the benefit function or value function. Each commodity or good will be characterized by such a function, called its social benefit or social value, whose integral is called the total benefit or total value. An outcome with a value function is called a group good.

In the sense that every commodity has such a function, every commodity may properly be called a group good. However, there is a marked difference between good outcomes where only one person benefits and good outcomes where multiple people benefit. In the first case, the benefit function has only one entry above zero and any number below. Let us call this a *delta* function. A delta function group good is an *individual good*. It is a commodity or outcome that benefits only one person. We may also refer to this as a *trivial* group good.

A *public good* is a group good with a constant benefit function. It may also be referred to as a *uniform* group good. In most contexts within this paper, the term group good will be used to designate a good that is neither trivial nor uniform. As further terminology, we may describe as 1-goods, n -goods, and Ω -goods the individual goods, the non-trivial non-uniform goods, and the public goods. The purchasing of group goods may also be discussed in terms of the nomenclature of suppressing negative externalities. However, since these alternative economic terms are counterintuitive to the issues at hand, they will be avoided in favor of the more symmetric terms of 1-good, n -good, and Ω -good.

Further, let us refer to all the people who are harmed in the execution of a group good the *producers*. Let us refer to all the people who benefit as the *consumers*. The economic problems arising from a large number of producers are easily met by traditional mechanisms. The economic problems arising from a large number of consumers have not been.

The basic problem of non-trivial group goods is that they require large amounts of organization to enable their purchase, and the cost of this organization may far exceed the social benefit of the good. The purpose of floating contracts is to provide a mechanism which lowers the cost of organization tremendously and thus enables these new benefits to society to occur through voluntary exchange.

2. The Mechanism

Especially in the case of trivial group goods, the good is purchased once all the agents are have informed each other how much they are willing to pay, once the law holds them to their offer, and once the total amount offered by the agents exceed that demanded by the producers. In the trivial case, this amounts to nothing more than a

single individual offering more cash than the price of an object. We depart from the trivial case when we see a couple, whose finances are separate, offer to split the price of a refrigerator. Each thinks half of the total cost exceeds his or her personal value. In general, however, such bidding need not be uniform. A person might be willing to pay more than others to have a group good outcome occur. Howsoever the money they are willing to pay piles up, once it exceeds the cost to the producers, there is no reason why the good should not be enacted.

The important thing to notice is that the willingness to pay needs to pile up, not necessarily the money itself. The floating contract is just this: each person who signs one expresses and is contractually bound to follow through on her willingness to pay a certain amount should the total amount eventually exceed the cost demanded by producers. At that point, the contract “kicks in.” Everybody loses their money and gains their personal reward of the group good.

The purchase of an individual good by a single agent may be seen in this light. However, it is naturally trivial. He needs to wait until enough people agree to put up money toward the group good. He appeals to the courts, the police and the banks both to ensure and insure non-compliance. Once enough money for the price of the item is put in a willing state, the transaction goes forward. Everyone involved profits. It is not an altruistic act.

The same hold for an n -good. However, the mechanism is no longer trivial. Some time may elapse between the first person surrendering his money and the last person. Each person will need to be bound into a contract by the forces which enforce rights and property. People need to be informed that the transaction has gone through and that their money is spent.

In fact, we should introduce a term, *surrender*, which describes this new state in which one’s money can be. In old fashioned contracts, the money merely changes hands. In the floating contract, the money is first *surrendered*, that is placed in a situation in which it will be spent without any further authorization by its owner should the price of the good be exceeded. Money that is spent from a surrendered state belongs to the seller. A claim by its previous owner to recoup it is merely theft.

When money is surrendered, however, it is not lost. At any point in time before the price is exceeded, a duration we shall call the *floating period*, the owner of the money may exit the contract, or *rescind*. She may regain unconditional rights over her money, and the amount pooled toward eventual purchase will fall accordingly. A floating contract goes through only when all the participants are in a legal state of willingly surrendering their money.

While floating contracts have always been theoretically possible, and while many, no doubt, have been actualized, the advent of the Web makes such contracts inexpensive and easy. A floating contract may be entered into by millions of individuals living in diverse places. Merely by providing a credit card number or check routing number to a web site formally dedicated to the purchase of a particular group good, a person may surrender any desired sum to the cause of buying that good.

Once the monetary goal is achieved, all the money that has been surrendered is by law transferred to the providers. In today's world, this is an instantaneous action governed by banks. Thus, the cost of organizing the intent during the floating period is minimal, and the cost of eventually transferring the money and providing the group good is negligible.

3. The Difference

Most 1-goods are purchase quite easily and efficiently in our economy. A complex process of investment and return organizes a multiplicity of producers. However, the efficiency of all present schemes for organizing the consumers and buying group goods is so low that, roughly speaking, most group goods go unbought. Therefore, a tremendous amount of possible value is left uncreated. Outcomes of great benefit are unrealized.

Most group goods, which are in fact purchased, are bought by governments. The drawback is that government execution does not line up with aggregate interest, except very roughly. It is certainly possible for a government to buy an outcome (or order it) that is not beneficial to society. It is also easy for it to fail to buy things it should. This applies to all types of governments, from partnerships to nations.

One notable aspect of the purchase of group goods by government is that people who do not gain by the outcome (or who even lose) are typically forced to pay into the price. This is to be contrasted with floating contracts. While in government, the set of people benefiting might be significantly different from the set enfranchised, in floating contracts, this is usually not the case. Where it is the case, such as when a contract goes through before a significant number of actual but slight beneficiaries join and surrender, we still do not have people forced to give up money, which, even upon the accomplishment of the good, their self-interest would ask them to keep. Floating contracts aim to avoid losers. As a practical political concern, a system that routinely creates losers, a governmental system, tends to empower those losers to veto actions which should morally take place.

The other major way in which group goods are bought is through charity. In charitable schemes, the money is given rather than surrendered. It is lost by the contributor, even when the charity does not reach its goal. For broad group goods, it is usually inconceivable that the action of giving up money is more than compensated by advantages accruing to the individual. In floating contracts, however, this is to be expected.

Charities manage to purchase group goods in a few relatively rare situations. They rely heavily on occasional outbursts of altruism provoked by advertising and fund drives. They often succeed in creating a “feeling of belonging” whose value to the individual exceeds her contribution. However, these feelings are often rather expensive to generate. A great deal of wealth is pointlessly wasted on superfluous coffee mugs with “WGBH” painted on them, on unentertaining advertising for the so-called sponsors, and on literally running around in circles for several miles in pink T-shirts.

A floating contract, by contrast, raises money for medical research, quietly and without waste of wealth, as all the people who think they might someday benefit, surrender money. Of course, an advertising budget for a floating contract will be non-zero. To raise this money, we would turn to traditional means. However, the advertising of a floating contract would clearly cost several orders of magnitude less than advertising for charities. Awareness is all that is desired. A feeling of belonging need not be manufactured, at great expense.

Charities typically turn to courting a coterie of exceedingly rich donors. The cost of persuading a few of them is much lower than the cost of persuading thousands upon thousands of the hoi polloi. To the rich, charities provide extra status, which can be manufactured relatively cheaply. Charities also turn to entertainers. In a charity concert, a famous entertainer might serve three functions, the role of a rich donor, the provider of status to other rich people, and the creator of a feeling of belonging to the masses who attend and pay higher than usual fees.

In general, however, the strategies which charities use to cause people to donate self-interestedly successfully accomplish only a tiny minority of the group goods waiting out there to be bought. By contrast, a floating contract is designed to entice the people who join to surrender money which is explicitly less than the benefit they will receive at the very moment their money is lost. The execution of a floating contract is a selfish event, which benefits all participants. This difference between charity and floating contracts cannot be overemphasized. It is fundamental, and its potential power is vast.

The floating contract's relationship to a fund drive for public radio, say, is best summed up by describing a drive in which, instead of informing the public that in the next hour their contributions will be matched 2-fold by General Electric-who-brings-good-things-to-light, their conditional contributions will be matched n -fold, where n is a half-million, by every other contributor. Just as you can be assured that the radio station will receive triple what you donate at the moment you donate, in the first case, you will instead be assured that the radio station will receive $n+1$ times what you donate at the moment you donate. Such magnification will turn the donating of money to a public radio station into a selfish action. As the contract kicks in, a person will actually purchase a year of public radio for \$10.

5. Variations: On-Market, Off-Market, and Buy-Down Contracts

Broadly speaking, the types of floating contracts which will be inaugurated fall into two categories, those in which the items purchased are traditional objects and outcomes and those where the status of rights and properties have yet to be defined by government, and need to be before voluntary transfer can take place. We may speak of these as *on-market* and *off-market* goods respectively. There may be a gray area between the two. While some rights may be technically defined, they also need to be easy to assemble and purchase. Recently, some publishing companies who presently control the wealth found in uncopywritten material tried to write the law so that Google had to explicitly gain permission from every author in order to digitize it and make it available. This would be an example of a good that is technically on-market, but effectively off-market.

On-market goods, for which the psychology to effect their purchase is present, are relatively unproblematic. Simple contracts may be brought up to purchase the right to purchase drugs at the marginal cost of their production. Simple contracts may be written to give money to those who write programs which may be used and copied freely throughout the world.

A more difficult realm, which is ultimately more interesting, is the realm where governments need to decide who owns exactly what, and where the very psychology of such a thing being bought and sold needs to be introduced. Some beneficial floating contracts might require that the rights to remove fish or whales from the ocean to be firmly defined to be in the possession of one party or another, so that they may be transferred. Fishermen might join a floating contract to buy up many of the rights to fish a particular bank, expressly so that they will not be used and so that the bank will recover, while at the same time, buying, owning and exercising as individuals those that are yet in action. Sentimental people who think whales are

important evolutionary miracles who deserve to enjoy their lives might buy up all the rights to their slaughter from Japanese whaling ships.

Governments need to define these rights, bring them on-market, and respect their transfer. One of the interesting features of the Kyoto protocol was the absence of any discussion of who owns the right the right to put a kilogram of CO₂ into the air, and how it is going to be traded. It is clearly a scheme doomed to irrelevance and failure. In the future, one might expect that each country will be responsible for generating a certain amount of oxygen for the atmosphere and that the right to underproduce will be rented from those with abundance. The rain forests of Brazil might generate some cash. Although this might not be pressing and may never be so, it certainly does seem that carbon dioxide needs to be brought on-market rather expeditiously to avoid global warming.

Some contracts, which are effectively on-market, are nonetheless novel in their complications and need to be explained. For instance, in the case of goods with high development cost and low marginal cost, such as life saving medicines, we need to be clear about what it is that a floating contract should buy. One interesting type of floating contract is a *buy-down* contract that purchases a lower price for an item.

One might prefer to start a non-profit drug company from scratch. Yet, even then, you need a major source of funding if you wish to sell your drugs at their marginal cost. However, a buy-down floating contract can have this desired effect with respect to the products of a private company. Of course, there is no good reason at all why a product more valuable than its marginal cost should not be produced and used.

Now, at any given time, a drug has a particular price, x . We may imagine a world where it is the company's right to charge this price. Imagine the case where the company has chosen a price designed to maximize its revenues. Whether those revenues are barely sufficient to offset the cost of research or whether they are simply being diverted to wealthy shareholders is irrelevant. Suppose a company, named BigBucks, owns the right to charge x for a drug, named Cure-AIDS. Suppose the marginal cost of its production is y .

The distribution of income at present currency exchanges is so extreme that millions of people who have AIDS or who expect they might get it will fall into the category of being able to pay y for the drug, but not being able to pay x . How can this be remedied? Quite simply, we might inaugurate on the Web a floating contract to purchase their right to sell Anti-AIDS for x dollars and replace it with a right to sell it for up to y dollars. Eventually, given it is a good drug, there is every reason to expect the contract would kick in, and rather soon.

For instance, suppose there is a population of a hundred thousand rich Americans who are buying anti-AIDS for their own use. They constitute the bulk of BigBucks' revenue stream for this drug. Well, of course, these people will surrender money toward the purchasing of lowering the price. They will surrender all the money they expect to pay for anti-AIDS over their lives. It is a huge sum. The marginal cost for the drug is quite low, in our example.

Of course, everyone who at the moment constitutes BigBucks' revenue stream will be willing to surrender an amount, which in aggregate will go a long way toward satisfying BigBucks' total expected profits for the drug. It only remains to exceed this number in order to persuade the company to voluntarily lower its price. Everyone in the world who expects to get AIDS and who is able to pay some fee z between x and y , will, in her selfish interest, be willing to surrender $z - y$ to the contract, as well. People who are unsure will want to multiply this by their probability of getting AIDS. The point is that for almost every disease and every effective drug, the integral of these contributions of $z - y$ is a *huge* number. It will be generally several times higher than drug company's expected income for a drug. The income surrendered by the present users will often approach the value the company desires, and they might as well be automatically enrolled in the contract the moment they get their first delivery.

One great aspect of floating contracts is that they frequently kick in before large numbers of the ultimate beneficiaries sign up to surrender. At the same time you are selfishly improving your lot, you can help the poor. In our example, after the price is brought down to y by some combination of existing users and those able to pay more than y , we could inaugurate a second contract to bring the cost down to zero, up to some level of production. The company would be compensated in one lump sum. Safeguards would ensure that people use the liquid as a medicine and not as a solvent to clean their cars. There is no reason to think that merely those who were involved in the first contract would not be able to accomplish the second, stemming from their self-interest alone.

The point is that everybody wins. We do not need to have congressional hearings to investigate whether or not the revenue from the drug and others is really necessary for continued research. It might be that the company is a saving angel that legitimately must be compensated to perform its next miracle. It might be that the company is heartlessly profiting from the discarded skeletons of the poor. We do not need politicians to decide the truth of this matter. Instead, drugs can be developed, produced and disseminated while everyone profits and shares in the immense benefits.

While it would be hoped that politicians could chart the right course, via the command economy, if a cure for AIDS were found, they can never be expected to chart the right course when the drugs involved merely improve lives of the rich and save the lives of the poor. Government action is not to be trusted. Charities need to print a prohibitive number of T-shirts and jog up and down too many mountain ranges. Floating contracts provide a constructive alternative.

6. Staged Contracts, and Politics

While most contracts will be for a particular object or outcome, we should also consider outcomes that are not discrete, but continuous. Instead of asking people whether or not they wish to a famous painting for their city's museum, we might instead wish to query them for how much their endowment for the arts should spend. What budget would they like to see? It is a question for which there is a continuum of answers. To obtain the approximately correct result we need to offer the people what we shall call a *staged* contract. In a staged contract, several points on a continuous curve are chosen, and the individual is asked to value what each is worth to her. Let us suppose that simultaneously drives are launched for an art budget of \$100 million dollars, \$200 million dollars, \$500 million dollars and \$1 billion dollars. At the web site, the individual is asked how much she is willing to surrender to see each of these budgets enacted. Of course, a rational person will likely be willing to surrender four increasing amounts, and the second derivative is likely to be negative. All four contracts begin to float and accumulate surrendered pressure. People arrive at the web site to surrender an amount less than their personal value for the arts. One of the contracts kicks in, of course, when the aggregate pressure exceeds the cost—when the total amount of the money surrendered for a stage exceeds the cost of the stage.

Most likely, although not necessarily, the lower stages will kick in first. At some designated point in time, such as the beginning of the fiscal year for that budget, the highest stage that has kicked in will indeed be the budget for the arts. Stages provide a mechanism for expressing the will of the people across a continuum of choices.

One important arena for staged floating contracts will be politics. In political struggles, vast amounts of money are required to raise the probability of victory. At the moment, politics operates similarly to charities. Money from the lower classes is underrepresented because of the immense cost of collecting it. Although some money does arrive from ordinary people, it trickles in, motivated by various emotions similar to those motivating charitable contributions. Absent for all, except the super-rich, is the desire to donate for selfish gain. It is hardly ever rational to donate to a

political candidate unless you wish to impress somebody or to simply feel good about yourself.

The super-rich, however, donate for personal gain. They are offered not merely status by the politicians. Instead, they are offered political access and favors of great value. They are buying things they desire.

A staged floating contract allows ordinary people to do the same thing. An ordinary person will be able to buy a congressperson and spend less than the congressperson is worth to her. It will likely be worth \$50 to see the candidate's coffers increase by \$50 million. The probability of something good happening to the contributor will go up noticeably. An expected value of \$100 or \$200 may well be obtained. In contrast, it will never be worth \$50 to an individual to see the candidate's coffers increase by \$50. The mathematics is all wrong. It is off by several factors of ten. Floating contracts will allow self-interest to motivate individual gifts to politicians. They will allow what is standard for the super-rich to become standard for everyone else.

7. Buying Peace, and Nukes

Floating contracts are naturally suited to situations in which the items to be traded are well defined. They operate within a system of ownership. Like all issues of property, they can hardly be divorced from a stable, consistent political system which defines the rights, adjudicates disputes and enforces them, ultimately with the military. However, there is an interesting realm in which they have the potential to operate, which lies outside of well defined property rights. Floating contracts and the power their surrendered money represents have the ability to resolve property rights, as well.

A state of war is usually the result of prisoner's dilemma decisions. It is almost invariably to the world group's advantage to cease the struggle. However, it is often not to the local group's advantage to abandon the struggle. On the contrary, for game theoretic concerns, it is often better to appear more belligerent than one actually is. It may maximize your expected gain.

A properly designed floating contract can help. Armed conflict is the result of different groups of people conceiving their rights differently. The goal, then, is to generate a political climate in which the people on both sides are accepting the same set of rights. Fortunately, political leaders have great sway over the sentiments of justice embraced by the people. Also, the contract may be paid out in a way that enforces continued good behavior.

Consider a general example. Two nations dispute a territory and sporadic warfare ensues. The people support their respective leaders, who are issuing contradictory claims. One side, Country A, claims rights past the red line, up to the blue. The other side, Country B, claims their rights extend past the blue line, up to the red. Although there is a continuum of solutions, let us envision a floating contract whose aim is to obtain agreement their border is the red line.

The goal is to attain a widespread mindset in the area that the red line is the right and proper border. A floating contract is initiated which will be paid out should this goal come to pass. The amount people may surrender to such a contract has no upper bound. The contract “kicks in” instead when the providers decide a sufficient amount of money can be gained, so that peace on these terms is desirable.

The appeal of the surrendered money leads to political pressure. Politicians, on behalf of their supporters will, for some amount of money, agree to this set of rights. Their pronouncements and agreements will ultimately become the prevailing mindset of the region. To be most effective, the money should go directly to the individuals in the nation.

For instance, suppose a billion dollars is surrendered upon the condition that Country A accedes to the red line. Suppose the region under dispute is not worth very much, but that there has been no significant motivation, before the advent of this floating contract, to abandon the struggle. Let us assume that political pressure wells up in Country A, and their leadership changes to one that accepts the deal. There are handshakes. There is peace.

Rights to the money involved in the floating contract shift. The interest on a billion dollars is paid out to the recipient country. The donors lose their present control over the money. Peace has been purchased, but the interest alone is given so that the peace must be maintained. A panel of judges, presumably from Norway or Sweden, will decide whether the peace continues to be maintained. If violence resumes in the future, whose source lies in Country A, even though the government might try to maintain its distance and plea for plausible deniability, the judges will rule that peace has been breached by Country A, and the interest payments will stop. If peace continues indefinitely, then the interest payments will have the same present value as the initial billion dollars as a lump sum.

Ideally, a line between the red and the blue—a green one, say—will be chosen for the floating contract. It would give the people who purchase peace leverage over both the people of country A and country B. In the earlier case, there is nothing, floating contract-wise, keeping country B from extending its demands past the red

line. However, when an intermediate line is chosen, each side will lose its respective floating contract should it fail to collectively respect the green set of rights.

In general, a floating contract cannot punish armed groups who increase their level of violence. It can reward armed groups who desist. It can punish those whom it previously rewarded, by breaking off payments. This raises a question of whether political groups might resort to violence in hopes of extorting a floating contract. However, it seems an unlikely outcome. Perhaps other forms of punishing such violence will deter that strategy.

Therefore, there seems no reason why floating contracts cannot be instituted to promote peace. A staged floating contract could be launched in Palestine and Israel. A few lines might be drawn. The Green Line with right of return. The Green Line with no right of return. The line of the wall with no right of return. A line between the two. Another beyond the wall, from the Israeli perspective. Let all the floating contracts be launched. The Israeli people will be rewarded in so far as they pull back their rights and claims. The Palestinian people will be rewarded in so far as they pull back their rights and claims. Different stages of different contracts might kick in.

Peace will occur when the Israelis and the Palestinians have pulled back to the same line. It matters not where this line is. Of course, many Israelis will have surrendered money to buy out the right of return and Jerusalem. The Saudis will have surrendered money to buy out Israeli claims beyond the wall. The middle ground is the most likely place for the floating contracts to settle.

All this depends upon the enough money being raised for such contracts. Theoretically, more than enough money should come from the individuals within the nations themselves. However, in the case of Israel/Palestine, their continued conflict threatens us all. I myself would pay a thousand dollars to see their swords beat into ploughshares. Fifty billion dollars a year should be able to bribe some peace into the region.

Let us suppose a line is chosen such that the Israelis receive \$10 billion a year and the Palestinians \$40 billion a year. Then peace breaks out, and the interest on the surrendered money begins to flow. Should a large Hamas rally demand the destruction of the state of Israel, or should a rocket sail into Tel Aviv, the payments will stop. The donors instead will receive the interest on their money. A significant period of time must ensue, as punishment, until a state of peace is redeclared by the judges. Similarly, if right wing politicians take over the Israeli parliament and demand the annexation of Jericho, all payments to the Israeli side will cease.

Any disputed border might resolved in this way. At present, most national jurisdictions conflict and overlap. We do not all buy into the same set of rights. The

reason for this is that there is no drawback to demanding more. Any country might as well tweak another country's nose. Recently, the government of Bolivia voted to change its maritime border to extend far into Chile's maritime region. As things stand, there is no down side to such an action. Increasing claims and belligerence is part of a successful strategy. However, the citizens of the world might well find it in their collective interest to offer floating contracts to encourage all nations to pull back to non-conflicting borders. Many nations would be willing to sell their merely formal conflicts cheaply. I am sure there are a few square miles of ocean that New Yorkers would sell to the Canadians. A steady state of such bribes all around the globe might discourage the random aggressive behavior that was practiced by the Bolivian government. Such instability threatens us all.

The same logic applies to the threat of warfare. The sophistication of one military tends to threaten another group of people. An arms race is a classic prisoner's dilemma set of decisions. Yet a floating contract might help to resolve behavior that runs counter to the world's benefit. For instance, there cannot be a total positive benefit to every country in the world developing a nuclear bomb. However, there are many countries who perceive it to be in their interests to acquire one. Quite recently, Pakistan, India, and North Korea have obtained nuclear capability. Iran seems to be next on the list. It is quite likely that we have already passed the point where they are good for the world. However, at each point, an individual nation might benefit while the rest of us lose.

The solution is get nations to agree to the same set of rights. We would like a pervasive and general agreement, nothing less than a deep myth ingrained into the mind of man, that fewer nations than those who have nuclear weapons at present should have them by right. Perhaps it should be only the United States, the European Union and China. Whatever the target set, to be eventually determined by staged contracts, let us also agree that we will simply punish a lesser subset consisting of a hundred fifty or more tiny countries, such as Burkina Faso and Nicaragua. Nuclear programs in these countries will merely be stopped by force. However, this leaves us with an intermediate set of countries who should morally forgo nuclear weapons, but who will be persuaded to give up their perceived right to them only by virtue of receiving payment.

The logic is the same as that found in a peace contract. Nuclear inspectors would have free reign. Interference with their activities or negative findings would provoke cessation of payments.

The objection that this rewards such countries is silly. In economics, it usually doesn't matter how rights are initially distributed. It only matters that there is a

liquid mechanism by which they may be transferred to the mutual advantage of each party. Payments should not encourage more countries to develop nuclear weapons, since the set to whom payments would be offered would already be circumscribed by the major powers. They should agree beforehand to invade the likes of Kyrgyzstan should the suspicion of nuclear development arise. Therefore, the policy of floating contracts would not encourage a mouse to roar.

Unfortunately, we have at the moment only two alternatives being pursued. We have nations whom we accept in the nuclear club, and we have nations whom we will invade should they develop nuclear arms. It would be better if there was a large middle ground secured by floating contracts. There would be less chance for the misunderstandings of the sort which will very likely unfold in Iran in the near future. It would also be better if there were a mechanism that could lessen the nuclear club. Donors in India and Pakistan should be able to convince their countries to scuttle their nuclear programs. The rest of us would donate, too.

In general, we might be able to influence the size of another country's military. Right now, there is no incentive for China not to expand its military tremendously. However, there are many people in the world who would be willing to pay a fee to see it held its military budget held to a smaller fraction of its economy. There is no real limit to the number of prisoner's dilemma decisions we might be able to suppress with floating contracts. Military matters frequently fall in this realm.

8. Conclusion

Although people do not really understand floating contracts now, they do represent an extremely efficient way of suppressing the prisoner's dilemma and thus promoting good in the world. Group goods comprise a large sector of our potential economy, yet they cannot easily be bought under current models. The floating contract provides an exceedingly cheap way to assemble the group's will prior to buying a group good. It has not been possible to do this before the recent advances in communication.