WORKING PAPERS OF THE

CENTER FOR RESEARCH ON SOCIAL ORGANIZATION

DEPARTMENT OF SOCIOLOGY

UNIVERSITY OF MICHIGAN

Power and Probability

William A. Gamson

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Power and Probability

The area of interpersonal power is beset by a handi-
cap that analysts of community, national, and international
power have been able to avoid. The handicap is the apparent-
ly innocent assumption that interpersonal power should be
thought of as the power that one individual has over another.
Even when it is recognized, as it frequently is, that such
power relations may be a two-way street, the assumption re-
mains a straight-jacket.

The problem with thinking of power as a relationship
between people is that it deprives the discourse of an intel-
lectual apparatus that has proved very useful in talking
about power relations in larger units. Only the slightest
change is necessary to make this apparatus available. First,
let's speak of power over behavior rather than power over
a person. This means that we relinquish our claim to be
dealing with changes in attitudes, values, learning, and
other internal states except in so far as we must invoke
such concepts to explain the mechanisms by which power oper-
ates on behavior. We leave the domain of explaining
changes in internal states to other sub-fields of social
psychology -- moral and cognitive development, value and
attitude change, and the like.

Second, let's think about the behavior being explained
in a specific way -- as the decisions or the choice among

alternatives that an individual makes. This is hardly any
limit at all because it is a simple matter to cast most be-
havior in these terms. Virtually any action may be viewed
as an implicit choice among possible alternatives even if
the other members of the decision set were never conscious-
ly considered. Many choices will be trivial ones of little
interest or concern so we must specify the domain that is
important to us -- the choice of a political candidate to
vote for, the decision to take a job or buy a product, the
choice of a policy to advocate and support, and so forth.

What I am proposing is that we redefine the task of
an interpersonal power analysis. Instead of attempting to
make statements about how much or what kind of power A has
over B, we should speak instead of how much and what kind
of power A has over a specified domain of B's decisions.
The dividend we receive for this change is the employment
of the highly useful conceptualization of power as a change
in probability.

The Probability Conception of Power

The explicandum for interpersonal power analysis is the
set of decisions that an individual makes. But only part
of the explanation lies within the realm of power. Many
effects on a person's decisions may have nothing to do with
the behavior of other actors but may reflect his internal
states, natural events, the physical environment, and so
forth. Clearly, a power explanation has certain more specific
characteristics.

For an intuitive feeling of where the explanation lies, I like the story about the man who enthusiastically and repeatedly threw bits of newspaper in the street. One morning, a woman who had watched this performance for several months approached him and asked him what he was doing. "I'm throwing this paper down to keep the elephants out of the streets," he told her. "But there are no elephants in the streets," she reproached him. "That's right," he said triumphantly, "Effective, isn't it."

Clearly, the exercise of power must imply some change over the kind of decision that an individual or an elephant would make in the absence of such power exercise. But what of a situation in which I would probably have voted for Candidate X anyway but as a result of my conversation with a respected friend I became more certain of the decision? Surely there is some kind of influence or power being exercised here but can one say my decision was altered since I probably would have voted the same way anyway?

We can say this quite easily if we conceive of the exercise of power as an act which increases the probability that I will choose a preferred alternative of the influencer. To conceive of influence as a shift of probability is one of Robert Dahl's (1957) several magnificent and seminal contributions to the area of power analysis.[1] In the example above,

_____

[1] Some people incorrectly credit Weber with this idea because he spoke of power as "the probability that one actor

[1]cont.

within a social relationship will be in a position to carry out his will despite resistance..." (1947, p.152). One shouldn't be tricked here by the common appearance of the word "probability" since Weber's definition is not at all the same as the idea of power as a change in probability contingent on the actions of the influencer.

my probability of voting for Candidate X was, let us say, .7 before talking to my respected friend and .9 after the conversation. The shift from .7 to .9 in the probability of my choice represents the exercise of power or influence.

It will be useful to have some specific terms to refer to these probabilities in a more general way. First, we need to refer to the probability that a person will choose a given alternative before the alleged exercise of power has occurred. Let's call this the before probability or P_b. Second, we need to refer to the probability that a person will choose a given alternative after the alleged exercise of power has occurred. Let's call this the after probability or P_a. Power has been successfully exercised if and only if there is a difference between P_a and P_b.

The simplicity of this definition is deceptive. There are an array of both conceptual and operational problems. The conceptual issues include such nettles as anticipated reactions, the stimulation of counteractivity by one's actions, and negative power. I have had my say on these elsewhere (Gamson, 1968, pp. 68-91) and have nothing to add here. The operational difficulties are formidable enough and will occupy the balance of this essay.

Operationalizing Power: Objective Probability

One may wonder, when he confronts the problems of operationalizing the probability conception of power, whether the dividend I have offered with such glowing promises is

any blessing at all. If it brings some conceptual clarity, perhaps this is offset by the difficulties of putting it into practical use in research. Perhaps the touted dividend will turn out to be a white elephant which has somehow gotten into the streets after all.

Here's the problem. Imagine that we want to know whether individual A exercises influence over the voting decisions of Senator X and, if so, to what degree. Our initial approach to this question might consist of the following easily made observations. We observe the total set of Senator X's voting decisions. We note those occasions on which Mr. A has attempted to influence the outcome of Senator X's vote. We can then calculate two conditional probabilities:

1. The probability that Senator X will vote for Mr. A's preferences when Mr. A does not attempt influence;

2. The probability that Senator X will vote for Mr. A's preferences when he actively tries to get Senator X to do so.

If we have a substantial number of cases in each class, we can compare these conditional probabilities and we should be able to make meaningful statements about the power Mr. A has exercised. More specifically, if the probability of Mr. A getting favorable votes is higher when he attempts influence than when he doesn't, we have apparent evidence that he has exercised power over Senator X's decisions.

Furthermore, the degree of difference between these two probabilities gives us an apparently precise measure of the exact amount of power that Mr. A was able to exercise.

I use the word apparently because this procedure is, in fact, frought with difficulties. First, there is the problem of the equivalence of decisions. It is simply not true for most purposes that a vote is a vote is a vote. Any comparison of probabilities must assume that there are certain equivalences in the classes of votes being compared. But imagine a situation in which A is active only on pork-barrel issues while he does not attempt influence on such major policy questions as the war in Vietnam, unemployment, and other matters. We must also assume that he expresses his personal preferences to an investigator on those issues in which he is inactive -- only thus can we calculate the probability of his getting his desires in the absence of influence attempts.

How meaningful can it be to compare Mr. A's probability of getting his preferred alternative in these two situations -- one in which he attempts influence and one in which he does not? We might easily exaggerate his power by the following reasoning: Senator X is personally indifferent on most pork-barrel issues and is especially open to influence but on major policy questions he is constrained by his own opinions and those of his vocal constituents. Since Mr. A is only

active on issues that are easy to influence and never tries
the hard ones, he may look very powerful indeed. On the
other hand, we may just as easily underestimate Mr. A's
influence. Perhaps he agrees with Senator X already on most
major policy issues and thus has no incentive or need to
exercise influence on these questions. On pork-barrel is-
sues, however, he must go all out since Senator X is general-
ly resistant to special interest legislation. The result
in this case will be to reveal Mr. A as having a net minus
power score. When he is inactive, he almost always gets
his preferred alternative but when he is active and tries
hard, the percentage of success is much lower.

This example does not seem too far fetched and yet it
leaves our comparisons of probabilities a meaningless shamb-
les. Nor is it solved by drawing narrower content categor-
ies of decision -- for example, tax votes or foreign policy
votes. The assumption of equivalency within such categor-
ies remains and is just as difficult to meet. Specifically,
there must be equivalency with respect to two things for the
probability comparisons to be meaningful:

1. The average before probability (P_b) must be the
same for the two classes of decisions -- those in which Mr. A
attempts influence and those in which he doesn't.

2. The average degree of competitiveness and attempted
influence from others must be the same for the two classes
of decisions.

These are extremely formidable equivalency requirements -- formidable enough to render the operation above of questionable usefulness in practice.

As serious as this problem is, there is another that is perhaps even more so. The probability definition of power seems to lead us off in a direction that is not really where we want to go. To switch metaphors, it is the wrong tool for the job. What we want is an apparatus that will allow us among other things to make power statements about unique, non-recurring situations. We are led instead to compare classes of decisions so that we can examine the relative frequency of preferred alternatives in the presence or absence of alleged influence.

What does this conception allow us to say about whether Kennedy's sympathy call to Mrs. Martin Luther King influenced the outcome of the 1960 election or Eisenhower's pledge to go to Korea influenced the outcome of the 1952 election. Or, at an interpersonal level, we want to know if Smith's passionate plea swayed the Board of Trustees from their apparent earlier inclination to cut the funds for the new building. Our conception of power ought to allow us to make statements about classes of events that have only one member-- the one we're really interested in talking about.

Operationalizing Power: Subjective Probability

To talk about power over a single decision, we must
necessarily abandon the notion of objective probability.
Objective probability is inseparable from the idea of rela-
tive frequency of a given outcome and there is no meaning-
ful way of talking about the relative frequency of an out-
come on a unique occasion -- it either occurs or it doesn't.

Subjective probability is a different matter and I
offer it as our salvation. The fact is that we talk all the
time about the probability of single events and we act on
these subjective probabilities. A whole industry is built
very successfully around such probabilities and its members
will be happy to quote you precise odds on a wide variety of
unique events -- the probability that Baltimore will win the
World Series, the probability that the Detroit Lions will
win the Super Bowl, or lest anyone think I am being friv-
olous, the probability that Richard Nixon will be re-elected.

The first thing we must struggle against, is the notion
that because a judgment is subjective it is unreliable, un-
stable, idiosyncratic, or unmeasureable. Subjective probabil-
ities are stable, reliable, and measurable. As a collective
phenomenon, they are an objective part of the social world,
independent of our whims and wishes.

To make this clearer, let me introduce a new concept --
that of the "true" subjective probability of a given event.
The true subjective probability is the mean probability of a
distribution of subjective probability judgments by informed
observers.

By an informed observer, I mean one who knows all the information that is available for forming a judgment. Because there are many factors, informed observers will have some variance in their judgment but there is reason to expect these judgments to be normally distributed except when the event in question has an extremely high or low subjective probability of occurrence.

It is, of course, not easy to know what this true subjective probability is. Even if we are ourselves informed observers, we may be deviant or idiosyncratic in our judgment. A sample of one to represent the mean of a distribution is a poor one no matter how perceptive the one may be. In short, one does not use his own estimate of the probability as a measure of the true subjective probability.

Gamblers have an excellent device for estimating the true subjective probability of a given population. They offer odds and adjust them to the way in which the population places its bets. Let us say that they place the odds at 2-1 against Muskie gaining the Democratic Presidential nomination. If they find that many are willing to bet on Muskie at these odds and few are willing to bet against him, they will lower the odds -- perhaps to 3-2. On the other hand, perhaps many will bet against Muskie at the original odds and few will take a chance in his favor -- then they will raise the odds, perhaps to 3-1. The shifts in odds are a search for the true subjective probability and they will stabilize when they reach the mean -- about as many

people will bet for Muskie as against him. The variance around
this mean, of course, is what makes horse races and election bets.

Once one has accepted the idea of a true subjective probabil-
ity, we can -- with some additional specifications -- use this in
measurement of the exercise of power. First, if we are interested
in power, we must limit our attention to those events which are
under the control of targets of potential influence. In other
words, the events must be the decisions of men. In studying social
power, we are not interested in the subjective probability of
whether it will rain tomorrow; we are interested in the probability
that the State Legislature will pass a proposed no-fault insurance
bill, that voters will pass a proposed school bond issue, or that
the President will withdraw troops from Indochina. To be related
to a measure of power, the subjective probability in question must
refer to the probability that a particular alternative will be chos-
en by an actual or potential target of influence.

The most meaningful subjective probabilities are those held by
these targets of influence. Even if the target is a single indi-
vidual, the idea of subjective probability remains valid. To illus-
trate this, assume that the decision of concern is whether Profes-
sor Jones will accept an attractive offer from another University.
He has promised to give an answer in 30 days, but he is able to tell
us that he "probably" will accept the offer. When pressed to be spe-
cific, he tells us that there are two chances in three that he will
accept. Subsequently, his wife is offered an attractive position at
his present University and a new interview reveals a change in his
subjective probability. He now suggests that he is quite likely

to remain at his present job, rating the chances of accepting the competitive offer at only one in five. Here we have a situation in which the target's subjective probability has changed significantly and we can infer influence even though the actual decision has still not actually been made.

The measurement process is similar when the decision is a collective one. Members of the target are asked to estimate the probability that the decision-making body of which they are a member will act in a particular fashion. Thus, they are asked to report partly on their own actions and partly on their anticipation of the actions of others. They are, in effect, serving as particularly well-informed observers who have two advantages over other observers. First, they have special and unparalleled access to their own reactions and second, they have a high probability of exposure to the thinking and feelings of other members of the decision-making body.

These advantages distinguish them from other observers only in making them better informed. Empirically, this presumption may turn out to be false in some cases. Some set of observers, by their more systematic efforts and attention, may be better informed than members of the target group on the likely actions of that body. A journalist who regularly covers Congress may be in a better position to know how Congressmen are leaning on an up-coming vote than many members who are junketing, repairing fences in their home district, or otherwise preoccupied. Similarly, the President's analyst may be a better judge than the President himself of his likely decision on a matter which is heavily involved with unconscious impulses.

The point of these examples is to underline the fact that the essential criterion for judging subjective probability is being an informed observer of the body making the decision. The focus on the judgments of the decision-making group itself rests on a presumption that may well be discarded in given cases -- that a group is likely to be especially well informed on its own likelihood of taking particular actions.

One final element is necessary to use subjective probability as a measure of how much influence has occurred. So far, we have suggested that we ask a group of decision-makers or other informed observers to estimate the probability at Time One that the group will make a particular decision. We then repeat this same question to the group at some subsequent time. If we find a difference in the two subjective probability estimates (beyond any fluctuations that could be attributed to measurement error), we have merely established an effect. Something has influenced our decision-makers but we cannot yet say that it is an act of social influence. It may be some factor beyond the conscious control of men or some unintended byproduct of unrelated decisions. Our difference between P_b and P_a establishes a necessary but not a sufficient condition for inferring that social influence has occurred. If there is no difference, then we can dismiss any claims about the success of influence attempts; if there is a difference, we are still left with the problem of identifying social influence as the cause.

Only those affects on subjective probabilities which can be

attributed to the acts of men aimed at altering the outcome of a decision should qualify for social influence. Unintended acts of men clearly can have important effects on decisions but it merely contributes conceptual confusion to include these as acts of influence. Social influence is clearest when a single act of intended influence has occurred between the measurement of P_b and P_a, a situation which is most likely to occur when we take frequent readings of subjective probability. If we then find a difference between the before and after probabilities in the intended direction, we can say that social influence has occurred and the difference in size tells us how much. Thus we have a neat way of using the probability concept of power to allow us to make precise, measurable statements about the exercise of power in the case of single, non-recurring events.

I'm sure I must defend this idea so let me deal with several possible objections. What I am arguing is sometimes misunderstood in the following way. "You are dealing with reputation for influence," I am told, "rather than actual influence. Maybe the reputation is deserved in some cases but these informant judgments about influence are notoriously unreliable. There is no guarantee that someone has

really exercised power just because a lot of people happen
to think this -- they may be subject to similar perceptual
distortions. You can fool all of the people some of the
time."

Now I completely agree with the above argument but it
happens to be quite irrelevant for my suggestion about meas-
uring the exercise of power. The argument assumes that
people are being asked to make judgments about whether an
act has been influential or not but I am not suggesting
anything of the sort. The only judgment the informed ob-
servers are asked to make concerns the probability of the
outcome of a given event at different points in time. The
best technique for discovering their subjective probability
is to offer them bets on the outcome at various odds, ask-
ing them to choose which side they would bet on. Their
indifference point -- the point at which they can't decide
which way they would bet -- establishes their individual sub-
jective probability about the outcome. Nowhere are they
asked to make any judgment about why they may have changed
from an earlier estimate; nowhere are they asked to specu-
late on whether any given act led them to change. They
are simply being used to establish the existence and degree
of a shift in probability of an outcome -- not the causes
of the shift.

One might argue that their attributions of causality are inevitably effecting their judgment. Perhaps Congress has been considering a bill which has only lukewarm Administration support. The President then goes on national television and strongly endorses the bill, implying a willingness to put further efforts behind it. Isn't a Congressman who raises his estimate before and after the speech relying on his (perhaps faulty) attribution of the President's influence on Congress?

There is no doubt that the attributions which observers make are affecting their subjective probabilities. Still, there is a difference in estimating the probability of an outcome and in estimating what caused an increase or decrease in probability. Perhaps in many cases these judgments will be perfectly correlated -- the more one thinks that the President has influence over Congress, the greater will be the rise in subjective probability of Congress passing the bill after the President supports it.

However, there is an important, systematic bias in certain attribution judgments that is attentuated or absent when merely judging the likelihood of outcomes. The bias stems from the general unwillingness of targets of influence to attribute influence to agents whose tactics they dislike. Pressure may work but it is the rare politician indeed who admits he acted because of it. Thus, there is some reason to expect systematic denial of certain kinds of attributions but there is little or no reason for distortion if one is merely asked to state the present probability of an outcome without regard to the tactics that may have influenced it.

Of course, if the informant is aware of the nature of the inferences being made from his probability estimates, he may be tempted again to distort his reports to affect the inferences. But the separation of the attribution task from the estimate of probable outcome promises to reduce if not fully eliminate this tendency.

Even if we accept the fact that the observers are providing us with honest judgments, perhaps they are ignorant and incompetent. If one uses unreliable informants here, as in any other study, the resulting measures will be correspondingly less reliable. Those who know little and are bad judges have difficulty making judgments and will produce a high variance in any test-retest reliability check. But surely one is not helpless here. I have suggested picking the decision-makers themselves as particularly well-informed observers. If they form a large group many of whom are ill-qualified to judge the probable outcome, one is free to establish stricter qualifications. Clearly, any investigator using this technique will face the challenge of showing that his informants were in a position to make intelligent judgments about how the decision-making body would act -- that they had the information, access, and interest to make their collective judgment an informed one.

Suppose one's observers are well-informed but biased. There is some reason to suspect that subjective probability judgments are not independent of one's feelings about the desirability of the outcome. Wishful thinking may be affecting the judgment of many

observers, perhaps quite unconsciously. Thus, they may exaggerate
the likelihood of getting desired outcomes and bias the measure.

This argument may hold for individual judgments but its
implications are much less clear for the collective measure.
To the extent that there is a division among the raters on the
outcome desired, they will shift their estimates in opposite
directions. This will have the effect of increasing the vari-
ance of the subjective probability estimate. But even if there
is bias here, it appears to be a constant bias as likely to be
present at both Time One and Two. If there is a change between
these two periods, it is hard to see how one's feelings about
the outcome could produce the shift.

Another problem centers on disentangling any single in-
fluence attempt from a whole variety of events and other acts
that may have occurred in the interval between Time One and
Time Two. This problem must also be viewed in a more general con-
text. Measuring the effect of an attempted act of influence is a
special case of causal analysis. The problem we face is no dif-
ferent from the general one of asserting that Variable X has af-
fected Variable Y. It is always possible that our statement is
false because of spurious effects -- that both were being inde-
pendently affected by Variable Z, for example.

The approach to this problem is essentially the same
with regard to the measurement of power as it is more gen-
erally. We try as much as possible to isolate the effect
of the act of interest from other possible causes. One
may do this by using small time intervals-- that is, by
measuring the true subjective probability as soon as possible
after any act of interest or contaminating event has oc-
curred. Let us say, for example, that we are interested in
whether the endorsement of Candidate X by Senator Y has
improved the candidate's chances of election. It also hap-
pens that Candidate X has had an illegitimate child in his
youth and this fact is brought to light a few days before
the endorsement. If we have a panel of informed observers,
we measure the true subjective probability before either
the endorsement or the revelation, we remeasure it after
the revelation of youthful indiscretion but before the
endorsement, and we measure it again after the endorsement.

Clearly this will not work if acts and events occur
simultaneously. We will have only net effects here and we
must rely on whatever outside evidence and argumentation we
can muster to disentangle the elements in the net. There
might be some limited value in obtaining hypothetical sub-
jective probability judgments. For example, what odds would
you have accepted on Senator Kennedy being nominated if
Chappaquidick had not occurred? Such judgments should be

taken with a heavy grain of salt since changing one impor-
tant element forces one to make a host of assumptions about
secondary effects on other elements. Since these assump-
tions are likely to be highly variable and implicit ones,
the reliability of the attendant judgment is dubious. None-
theless, viewed as an attempt to decompose and assess simul-
taneous events or acts, it may give a few useful clues on
relative weights.

Summary

I am arguing for a rather simple and straightforward
way of measuring the exercise of power over specific de-
cisions of interest. First, one creates a panel of
informed observers. These panel members are assumed to
have or are given a common set of relevant information and
asked to fill out a short questionnaire which measures
whether they are sufficiently knowledgeable about the situation
being studied. Those who fail to meet some threshold of know-
ledge are eliminated.

The panel members are then given a certain amount of
money -- real or hypothetical -- and asked to consider
whether they would bet this money for or against a given
outcome at various odds. For any given set of odds, one
will then have a percentage of bets for or against the
alternative. The entire distribution of odds will enable

one to establish the point at which exactly half the in-
formed observers bet each way. One can also gain a measure
of confidence by allowing people to reduce the amount they
would bet as they approach their subjective indifference
point. This also opens the possibility of using a weighted
mean of subjective probability judgments -- weighted by the
degree of confidence that each individual places in his
judgment.

This procedure is then repeated at regular intervals
during a period in which attempts to influence the outcome
of the decision were occurring and as soon as possible after any
influence attempt of special interest. A sample questionnaire
embodying this procedure is included here as Appendix A.

Does one need a large panel? This depends on the vari-
ance of the subjective probability judgments. My hunch --
and it is only this -- is that the variance is surprising-
ly low and that a very small panel would do the job. I
have found, for example, that I can rather accurately pre-
dict the odds that will be available on major sports events
with a panel of as few as five or six people. The more

major the event   and, hence, the more attentive the ob-
servers, the lower the variance and the smaller the panel
needed to accurately estimate the true subjective probabil-
ity.   If one is talking, for example, about the outcome of
a presidential election, then I would guess that a panel of
thousands would offer little improvement over a panel of
only 20 or 30 close election watchers.   If the decision of
interest is obscure, then one would expect the variance of
subjective probability judgments to rise considerably and
a somewhat larger panel would be necessary to measure the true
subjective probability within a given range of error.

So, the promised dividend is, I claim, of considerable
value after all. The probability conception of power is
not only measureable but, if one relies on subjective prob-
ability, one may get a first class bargain. I offer the
probability conception to students of interpersonal power
as a Best Buy.

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Appendix A

Measuring Subjective Probability: Sample Questionnaire

Date_____

Introduction: The Senate Assembly, as you know, will be taking action
on a proposal to eliminate most classified military research from the
University. We are interested in how Senate Assembly members like
yourself think this decision is going to come out. Three possibil-
ities exist:

>Alternative A: The proposal to eliminate most classified
>
>military research will be passed.
>
>Alternative B: A compromise will be passed which eliminates
>
>some but not most of such research.
>
>Alternative C: The proposal will be rejected or tabled allow-
>
>ing the present system to continue.

1. Which of these possibilities is the most likely outcome in your
    judgment?
    (circle one)   A   B   C
2. Which do you personally prefer?
    (circle one)   A   B   C
3. What probability would you attach to each of these alternatives?
    (The three probabilities must total 1.0).

>Alternative A: ____.____
>
>Alternative B: ____.____
>
>Alternative C: ____.____
>
>   Total   1.0

4. A list of hypothetical bets on the outcome are listed below. Would you indicate which of these bets you would accept at this time (assuming that you have no objections to betting as such).

Check if you
accept the bet

a. You win $100 if Alternative A is passed; you
   lose $10 if it isn't.   _____

b. You win $50 if Alternative A is passed; you
   lose $10 if it isn't.   _____

c. You win $30 if Alternative A is passed; you
   lose $10 if it isn't.   _____

d. You win $20 if Alternative A is passed; you
   lose $10 if it isn't.   _____

e. You win $15 if Alternative A is passed; you
   lose $10 if it isn't.   _____

f. You win $10 if Alternative A is passed; you
   lose $10 if it isn't.   _____

g. You win $10 if Alternative A is passed; you
   lose $15 if it isn't.   _____

h. You win $10 if Alternative A is passed; you
   lose $20 if it isn't.   _____

i. You win $10 if Alternative A is passed; you
   lose $30 if it isn't.   _____

j. You win $10 if Alternative A is passed; you
   lose $50 if it isn't.   _____

k. You win $10 if Alternative A is passed; you
   lose $100 if it isn't.   _____

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What I am proposing is that we redefine the task of
an interpersonal power analysis. Instead of attempting to
make statements about how much or what kind of power A has
over B, we should speak instead of how much and what kind
of power A has over a specified domain of B's decisions.
The dividend we receive for this change is the employment
of the highly useful conceptualization of power as a change
in probability.

The Probability Conception of Power

The explicandum for interpersonal power analysis is the
set of decisions that an individual makes. But only part
of the explanation lies within the realm of power. Many
effects on a person's decisions may have nothing to do with
the behavior of other actors but may reflect his internal
states, natural events, the physical environment, and so
forth. Clearly, a power explanation has certain more specific
characteristics.

For an intuitive feeling of where the explanation
lies, I like the story about the man who enthusiastically
and repeatedly threw bits of newspaper in the street. One
morning, a woman who had watched this performance for sev-
eral months approached him and asked him what he was doing.
"I'm throwing this paper down to keep the elephants out of
the streets," he told her. "But there are no elephants
in the streets," she reproached him. "That's right,"
he said triumphantly, "Effective, isn't it."

Clearly, the exercise of power must imply some change
over the kind of decision that an individual or an elephant
would make in the absence of such power exercise. But what
of a situation in which I would probably have voted for
Candidate X anyway but as a result of my conversation with
a respected friend I became more certain of the decision?
Surely there is some kind of influence or power being exer-
cised here but can one say my decision was altered since I
probably would have voted the same way anyway?

We can say this quite easily if we conceive of the ex-
ercise of power as an act which increases the probability
that I will choose a preferred alternative of the influencer.
To conceive of influence as a shift of probability is one of
Robert Dahl's (1957) several magnificent and seminal contri-
butions to the area of power analysis.[1] In the example above,

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[1] Some people incorrectly credit Weber with this idea be-
cause he spoke of power as "the probability that one actor

[1]cont.

within a social relationship will be in a position to carry
out his will despite resistance..." (1947, p.152). One
shouldn't be tricked here by the common appearance of the
word "probability" since Weber's definition is not at all
the same as the idea of power as a <u>change</u> in probability
contingent on the actions of the influencer.

my probability of voting for Candidate X was, let us say, .7 before talking to my respected friend and .9 after the conversation. The shift from .7 to .9 in the probability of my choice represents the exercise of power or influence.

It will be useful to have some specific terms to refer to these probabilities in a more general way. First, we need to refer to the probability that a person will choose a given alternative before the alleged exercise of power has occurred. Let's call this the before probability or P_b. Second, we need to refer to the probability that a person will choose a given alternative after the alleged exercise of power has occurred. Let's call this the after probability or P_a. Power has been successfully exercised if and only if there is a difference between P_a and P_b.

The simplicity of this definition is deceptive. There are an array of both conceptual and operational problems. The conceptual issues include such nettles as anticipated reactions, the stimulation of counteractivity by one's actions, and negative power. I have had my say on these elsewhere (Gamson, 1968, pp. 68-91) and have nothing to add here. The operational difficulties are formidable enough and will occupy the balance of this essay.

Operationalizing Power: Objective Probability

One may wonder, when he confronts the problems of operationaling the probability conception of power, whether the dividend I have offered with such glowing promises is

any blessing at all. If it brings some conceptual clarity, perhaps this is offset by the difficulties of putting it into practical use in research. Perhaps the touted dividend will turn out to be a white elephant which has somehow gotten into the streets after all.

Here's the problem. Imagine that we want to know whether individual A exercises influence over the voting decisions of Senator X and, if so, to what degree. Our initial approach to this question might consist of the following easily made observations. We observe the total set of Senator X's voting decisions. We note those occasions on which Mr. A has attempted to influence the outcome of Senator X's vote. We can then calculate two conditional probabilities:

1. The probability that Senator X will vote for Mr. A's preferences when Mr. A does not attempt influence;

2. The probability that Senator X will vote for Mr. A's preferences when he actively tries to get Senator X to do so.

If we have a substantial number of cases in each class, we can compare these conditional probabiliteis and we should be able to make meaningful statements about the power Mr. A has exercised. More specifically, if the probability of Mr. A getting favorable votes is higher when he attempts influence than when he doesn't, we have apparent evidence that he has exercised power over Senator X's decisions.

Furthermore, the degree of difference between these two
probabilities gives us an apparently precise measure of the
exact amount of power that Mr. A was able to exercise.

I use the word apparently because this procedure is,
in fact, frought with difficulties. First, there is the
problem of the equivalence of decisions. It is simply not
true for most purposes that a vote is a vote is a vote. Any
comparison of probabilities must assume that there are
certain equivalences in the classes of votes being compared.
But imagine a situation in which A is active only on pork-
barrel issues while he does not attempt influence on such
major policy questions as the war in Vietnam, unemployment,
and other matters. We must also assume that he expresses
his personal preferences to an investigator on those issues
in which he is inactive -- only thus can we calculate the
probability of his getting his desires in the absence of
influence attempts.

How meaningful can it be to compare Mr. A's probability
of getting his preferred alternative in these two situations --
one in which he attempts influence and one in which he does
not? We might easily exaggerate his power by the following
reasoning: Senator X is personally indifferent on most pork-
barrel issues and is especially open to influence but on
major policy questions he is constrained by his own opinions
and those of his vocal constituents. Since Mr. A is only

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active on issues that are easy to influence and never tries
the hard ones, he may look very powerful indeed. On the
other hand, we may just as easily underestimate Mr. A's
influence. Perhaps he agrees with Senator X already on most
major policy issues and thus has no incentive or need to
exercise influence on these questions. On pork-barrel is-
sues, however, he must go all out since Senator X is general-
ly resistant to special interest legislation. The result
in this case will be to reveal Mr. A as having a net minus
power score. When he is inactive, he almost always gets
his preferred alternative but when he is active and tries
hard, the percentage of success is much lower.

This example does not seem too far fetched and yet it
leaves our comparisons of probabilities a meaningless shamb-
les. Nor is it solved by drawing narrower content categor-
ies of decision -- for example, tax votes or foreign policy
votes. The assumption of equivalency within such categor-
ies remains and is just as difficult to meet. Specifically,
there must be equivalency with respect to two things for the
probability comparisons to be meaningful:

1. The average before probability (P_b) must be the
same for the two classes of decisions -- those in which Mr. A
attempts influence and those in which he doesn't.

2. The average degree of competitiveness and attempted
influence from others must be the same for the two classes
of decisions.

These are extremely formidable equivalency requirements -- formidable enough to render the operation above of questionable usefulness in practice.

As serious as this problem is, there is another that is perhaps even more so. The probability definition of power seems to lead us off in a direction that is not really where we want to go. To switch metaphors, it is the wrong tool for the job. What we want is an apparatus that will allow us among other things to make power statements about unique, non-recurring situations. We are led instead to compare classes of decisions so that we can examine the relative frequency of preferred alternatives in the presence or absence of alleged influence.

What does this conception allow us to say about whether Kennedy's sympathy call to Mrs. Martin Luther King influenced the outcome of the 1960 election or Eisenhower's pledge to go to Korea influenced the outcome of the 1952 election. Or, at an interpersonal level, we want to know if Smith's passionate plea swayed the Board of Trustees from their apparent earlier inclination to cut the funds for the new building. Our conception of power ought to allow us to make statements about classes of events that have only one member-- the one we're really interested in talking about.

Operationalizing Power: Subjective Probability

To talk about power over a single decision, we must necessarily abandon the notion of objective probability. Objective probability is inseparable from the idea of relative frequency of a given outcome and there is no meaningful way of talking about the relative frequency of an outcome on a unique occasion -- it either occurs or it doesn't.

Subjective probability is a different matter and I offer it as our salvation. The fact is that we talk all the time about the probability of single events and we act on these subjective probabilities. A whole industry is built very successfully around such probabilities and its members will be happy to quote you precise odds on a wide variety of unique events -- the probability that Oakland will win the World Series, the probability that the Detroit Lions will win the Super Bowl, or lest anyone think I am being frivolous, the probability that Richard Nixon will be re-elected.

The first thing we must struggle against, is the notion that because a judgment is subjective it is unreliable, unstable, idiosyncratic, or unmeasureable. There is no reason why it should be any of these things.

Let me introduce a new concept -- that of the "true" subjective probability of a given event. The true subjective probability is the mean probability of a distribution of subjective probability judgments by informed observers.

By an informed observer, I mean one who knows all the information that is available for forming a judgment. Because there are many factors, informed observers will have some variance in their judgment but there is reason to expect these judgments to be normally distributed except when the event in question has an extremely high or low subjective probability of occurrence.

It is, of course, not easy to know what this true subjective probability is. Even if we are ourselves informed observers, we may be deviant or idiosyncratic in our judgment. A sample of one to represent the mean of a distribution is a poor one no matter how perceptive the one may be. In short, one does not use his own estimate of the probability as a measure of the true subjective probability.

Gamblers have an excellent device for estimating the true subjective probability of a given population. They offer odds and adjust them to the way in which the population places its bets. Let us say that they place the odds at 2-1 against Muskie gaining the Democratic Presidential nomination. If they find that many are willing to bet on Muskie at these odds and few are willing to bet against him, they will lower the odds -- perhaps to 3-2. On the other hand, perhaps many will bet against Muskie at the original odds and few will take a chance in his favor -- then they will raise the odds, perhaps to 3-1. The shifts in odds are a search for the true subjective probability and they will stabilize when they reach the mean -- about as many

people will bet for Muskie as against him. The variance
around this mean, of course, is what makes horse races and
election bets.

Once one has accepted the idea of a true subjective
probability, we can rather quickly move to using this in
the measurement of the exercise of power. We start with
Time One and estimate the true subjective probability of a
given alternative. For simplicity, imagine that a single
act of attempted influence then occurs. We then estimate
the new true subjective probability of the given alterna-
tive. If there is a difference between P_b and P_a in the
intended direction, then we can say that influence has oc-
curred and the difference in size tells us how much. Thus
we have a neat way of using the probability concept of
power to allow us to make precise, measureable statements
about the exercise of power in the case of single, non-
recurring events.

I'm sure I must defend this idea so let me deal with
several possible objections. What I am arguing is sometimes
misunderstood in the following way. "You are dealing with
reputation for influence," I am told, "rather than actual
influence. Maybe the reputation is deserved in some cases
but these informant judgments about influence are notor-
iously unreliable. There is no guarantee that someone has

really exercised power just because a lot of people happen
to think this -- they may be subject to similar perceptual
distortions. You can fool all of the people some of the
time."

Now I completely agree with the above argument but it
happens to be quite irrelevant for my suggestion about meas-
uring the exercise of power. The argument assumes that
people are being asked to make judgments about whether an
act has been influential or not but I am not suggesting
anything of the sort. The only judgment the informed ob-
servers are asked to make concerns the probability of the
outcome of a given event at different points in time. The
best technique for discovering their subjective probability
is to offer them bets on the outcome at various odds, ask-
ing them to choose which side they would bet on. Their
indifference point -- the point at which they can't decide
which way they would bet -- establishes their individual sub-
jective probability about the outcome. Nowhere are they
asked to make any judgment about why they may have changed
from an earlier estimate; nowhere are they asked to specu-
late on whether any given act led them to change. They
are simply being used to establish the existence and degree
of a shift in probability of an outcome -- not the causes
of the shift. In short, the argument about studying reputa-
tion for influence is, in this case, a complete red herring.

But perhaps the "informed" observers we have picked are, in fact, ignorant and incompetent. This problem is a real one. The assumption of complete information is difficult to meet in practice and information can greatly affect one's subjective probability even when no new acts are occurring. The disclosure of a previously unknown fact may greatly shift such a probability. Furthermore, in any actual situation, there is likely to be differential information.

These are important difficulties but not overwhelming ones. In many cases, most of the relevant information is publicly available to those who are interested. Furthermore, the act of disclosure of some previously unknown fact may itself be treated as an act of influence. In any case, events are clearly effecting the true subjective probability -- sickness, accidents, etc. -- as well as deliberate acts of attempted influence.

If one uses unreliable informants, the resulting measure will be correspondingly less reliable. Those who know little and are bad judges have difficulty making judgments and will produce a high variance in any test-retest reliability check. There are a variety of techniques for assessing reliability and for imporving it. My major point here is simply that the problems of reliability involved are standard ones and a battery of standard techniques exists for dealing with them.

Another problem centers on disentangling any single influence attempt from a whole variety of events and other acts that may have occurred in the interval between Time One and Time Two. This problem must also be viewed in a more general context. Measuring the effect of an attempted act of influence is a special case of causal analysis. The problem we face is no different from the general one of asserting that Variable X has affected Variable Y. It is always possible that our statement is false because of spurious effects -- that both were being independently affected by Variable Z, for example.

The approach to this problem is essentially the same with regard to the measurement of power as it is more generally. We try as much as possible to isolate the effect of the act of interest from other possible causes. One may do this by using small time intervals-- that is, by measuring the true subjective probability as soon as possible after any act of interest or contaminating event has occurred. Let us say, for example, that we are interested in whether the endorsement of Candidate X by Senator Y has improved the candidate's chances of election. It also happens that Candidate X has had an illegitimate child in his youth and this fact is brought to light a few days before the endorsement. If we have a panel of informed observers,

we measure the true subjective probability before either
the endorsement or the revelation, we remeasure it after
the revelation of youthful indiscretion but before the
endorsement, and we measure it again after the endorsement.

Clearly this will not work if acts and events occur
simultaneously. We will have only net effects here and we
must rely on whatever outside evidence and argumentation we
can muster to disentangle the elements in the net. There
might be some limited value in obtaining hypothetical sub-
jective probability judgments. For example, what odds would
you have accepted on Senator Kennedy being nominated if
Chappaquidick had not occurred? Such judgments should be
taken with a heavy grain of salt since changing one impor-
tant element forces one to make a host of assumptions about
secondary effects on other elements. Since these assump-
tions are likely to be highly variable and implicit ones,
the reliability of the attendant judgment is dubious. None-
theless, viewed as an attempt to decompose and assess simul-
taneous events or acts, it may give a few useful clues on
relative weights.

Summary

I am arguing for a rather simple and straightforward
way of measuring the exercise of power over specific de-
cisions of interest. First, one creates a panel of informed
observers. These panel members are given a common set of

relevant information and asked to fill out a short question-
naire which measures whether they are sufficiently know-
ledgeable about the situation being studied. Those who fail
to meet some threshold of knowledge are eliminated.

The panel members are then given a certain amount of
money -- real or hypothetical -- and asked to consider
whether they would bet this money for or against a given
outcome at various odds. For any given set of odds, one
will then have a percentage of bets for or against the
alternative. The entire distribution of odds will enable
one to establish the point at which exactly half the in-
formed observers bet each way. One can also gain a measure
of confidence by allowing people to reduce the amount they
would bet as they approach their subjective indifference
point.

This procedure is then repeated at regular intervals
during a period in which attempts to influence the outcome
of the decision were occurring and as soon as possible after
any act or event of special interest. A sample questionnaire
embodying this procedure is included here as Appendix A.

Does one need a large panel? This depends on the vari-
ance of the subjective probability judgments. My hunch --
and it is only this -- is that the variance is surprising-
ly low and that a very small panel would do the job. I
have found, for example, that I can rather accurately pre-
dict the odds that will be abailable on major sports events
with a panel of as few as five or six people. The more

major the event and, and hence, the more attentive the ob-
servers, the lower the variance and the smaller the panel
needed to accurately estimate the true subjective probabil-
ity. If one is talking, for example, about the outcome of
a presidential election, then I would guess that a panel of
thousands would offer little improvement over a panel of
only 20 or 30. If the decision of interest is obscure, then
one would expect the variance of subjective probability
judgments to rise considerably and a somewhat larger panel
would be necessary to measure the true subjective probabil-
ity within a given range of error.

So, the promised dividend is, I claim, of considerable
value after all. The probability conception of power is
not only measureable but, if one relies on subjective prob-
ability, one may get a first class bargain. I offer the
probability conception to students of interpersonal power
as a Best Buy.

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Appendix A

Measuring Subjective Probability: Sample Questionnaire

(Filter Questions)

1. How closely have you been following the efforts of
    various candidates to obtain the Democratic Presiden-
    tial nomination for 1972 -- very closely, fairly closely,
    or not too closely.

    (Circle one)   Very closely   Fairly closely   Not too closely

2. Who would you consider to be the major candidates?

    2a. Do you happen to remember what state each one is from?

    Name   State

    _____   _____

    _____   _____

    _____   _____

    _____   _____

    _____   _____

3. A series of choices will be described below. Imagine that
    you will get the amount of money indicated if you choose
    correctly but nothing if you are wrong. Please indicate
    what your choice would be in each case.

        Example: (Check one)

        A. It will rain tomorrow. (Value if correct ≥ $95) ___

        B. It will not rain tomorrow. (Value if
            correct ≥ $5)   ___

    If you choose A and it rains, you get $95; if you choose
    A and it doesn't rain, you get nothing. If you choose B
    and it doesn't rain, you get $5; if you choose B and it
    rains, you get nothing.

3. Following the same procedure, please indicate your choice for each pair described below regarding Senator Muskie's chances of being successful in obtaining the Democratic Presidential nomination.

(Check one in each pair)

{ a+ Muskie will be successful.*   Value = $90** _____

  a- Muskie will be unsuccessful. Value = $10 _____

{ b+ Muskie will be successful.   Value = $80 _____

  b- Muskie will be unsuccessful. Value = $20 _____

{ c+ Muskie will be successful.   Value = $70 _____

  c- Muskie will be unsuccessful. Value = $30 _____

{ d+ Muskie will be successful   Value = $60 _____

  d- Muskie will be unsuccessful   Value = $40 _____

{ e+ Muskie will be successful.   Value = $50 _____

  e- Muskie will be unsuccessful. Value = $50 _____

{ f+ Muskie will be successful.   Value = $40 _____

  f- Muskie will be unsuccessful. Value = $60 _____

{ g+ Muskie will be successful.   Value = $30 _____

  g- Muskie will be unsuccessful. Value = $70 _____

{ h+ Muskie will be successful.   Value = $20 _____

  h- Muskie will be unsuccessful. Value = $80 _____

{ i+ Muskie will be successful.   Value = $10 _____

  i- Muskie will be unsuccessful. Value = $90 _____

* This refers to his success in gaining the Democratic nomination regardless of whether he is later elected or not.

** This amount is what you receive if you choose this alternative and are correct.

4. Please circle the pair of letters in question #3 where you had the most difficulty in deciding what your choice should be. (For example, a+/a-, b+/b-, C+/c-, etc.).