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My heart is saddened to think that
so many of our upstanding citizens
have lost sight of the great ideal
that is America. It seems those
people whose voices are heard the
loudest in protest are those who are
the most ignorant of their own
ancestral "roots" and heritage.

Where would this nation be if the
doors had been closed to Alexander
Graham Bell, Andrew Carnegie, and
Samuel Gompers; or even more recently
Henry Kissinger, and Albert Einstein?

The United States is a nation of
immigrants. To lock the door on the
Vietnamese refugees would be like
turning away our own parents, grand-
parents, and great-grandparents at
America's gateway.

The Statue of Liberty stands as a
reminder to us and to all the world
that the United States embraces all
who seek freedom and peace of con-
science.

We can paraphrase the conclusion of this
letter's argument as: U.S. citizens should
support doubling the number of Vietnamese
immigrants admitted. In the paraphrases of
the premises I have tried to preserve the ad
populum force of the original argument.

1. Opponents of doubling the immigration
ignore one of America's highest ideals
which is symbolized by the Statue of
Liberty welcoming immigrants.

2. Opponents are shallow, unappreciative,
and ungrateful citizens who are
ignorant of, or indifferent to,
their roots in a nation of immigrants.

a. They ignore the fact that they are
descendents of immigrants.

b. They are unappreciative of the
immigrants who became great
Americans.

c. They are ungrateful citizens be-
cause they are unwilling to share
America's blessings bestowed on
them and their ancestors by
earlier Americans.

A superficial, or poorly supported, critique
of the above argument would charge commission
of an ad populum fallacy on the basis of
merely recognizing ad populum expressions.
It is easy enough to point out expressions
used to get us to accept the conclusion by
causing us to feel un-American if we reject
it. Nevertheless to support the charge that
the ad populum expressions are irrelevant the
argument's critic needs to make a case that
the conclusion should be read as primarily
descriptive. If the primary purpose of the
argument is to cause people to support doub-
ling the Vietnamese immigration, it is
obviously relevant to use language designed
to cause people so to act. The ad populum
accusation could be supported by noting that
the writer suggests that immigrants have made
great contributions to the U.S. and claims
that American principles favor immigration.
You could go on to say that these suggestions
and claims indicate that the conclusion is to
be read as largely the description: Doubling

the number of Vietnamese immigrants is both
practical and in conformity with national
principles. When the case has been made that
the conclusion is to be read in the descrip-
tive way, it is appropriate to point out that
devices to get us patriotically excited about
accepting immigrants are irrelevant. Facts
about the character of the immigrants, our
ability to handle them, and clear statements
of national principles are what would be re-
levant to supporting the above descriptive
reading of the conclusion.

response

The Deductive-Inductive Distinction

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The viability of the traditional distinc-
tion between deductive and inductive argu-
ments has recently been questioned in a
number of different quarters, the most notable
example being Perry Weddle's article "Induc-
tive, Deductive" (ILN ii, no. 1). It is
understandable that philosophers should call
this distinction into question, but a strong
case can be made for keeping the distinction.
What is necessary is the recognition that
arguments do not exist in vacuo but are
person-related.

An important factor which has figured in the
questioning of the deductive-inductive dis-
tinction is the difficulty in providing a
good definition of each kind of argument.
One thing is clear: if the deductive-
inductive distinction is to be at all viable,
any definition of the two kinds of arguments
must leave room for both good and bad in-
stances of each type. Unfortunately the
writers of many logic books have not kept
this in mind. For instance, Jack and Alice
Kaminsky (Logic: A Philosophical Introduc-
tion, Reading, Mass., Addison Wesley, 1974,
p. 248) describe deductive reasoning as that
which is "'open and shut'—given the evidence
the conclusion is inescapable." We are told
that in inductive reasoning "the connection
between premises and conclusion is probabi-
listic rather than necessary. We can only
say the evidence 'points to' a certain con-
clusion, or that the evidence makes a certain
conclusion 'plausible' or 'implausible'."

And Peter Manicas and Arthur Kruger (Logic: The Essentials, New York, McGraw-Hill, 1974, p. 52) state that "A deductive argument is one in which the premises necessarily imply or entail the conclusion; or alternatively, the premises constitute conclusive evidence for the conclusion" while "An inductive argument on the other hand, is one in which the premises do not necessarily imply the conclusion, or, stated positively, the premises provide some evidence (though not conclusive evidence) for the conclusion." Neither of these explanations takes into consideration that there are such things as invalid deductive arguments. Unwittingly, they have been lumped together with inductive arguments.

This problem is avoided by two other authors who do not distinguish between deductive and inductive arguments, but only between valid deductive and strong inductive arguments. Howard Kahane (Logic and Contemporary Rhetoric, 2nd ed. Belmont, Calif., Wadsworth, 1976, p. 32) writes, "Roughly, the essential property of a valid deductive argument is that if its premises are true, then its conclusion cannot be false. In contrast, a valid inductive argument provides good but not conclusive grounds for the acceptance of its conclusion or, to put it another way, its premises provide good grounds for acceptance of its conclusion but do not guarantee its truth." And according to Vincent Barry (Practical Logic, New York, Holt Rinehart & Winston, 1976, p. 138), "The precise difference between these two methods of reasoning is that in a valid deductive argument the conclusion necessarily follows from the truth of its premises; in a proper inductive argument the conclusion follows with a high degree of probability, but not with certainty." While one cannot argue with these two statements, they leave unanswered the question: What is the difference between a deductive argument and an inductive argument?

Perhaps the most curious statements on the deductive-inductive distinction come from K. Codell Carter (A Contemporary Introduction To Logic, Beverly Hills, Glencoe Press, 1977, p. 14):

> The distinction between deductive and inductive is not essential. In logic we are mostly concerned with criteria for deciding whether purportedly valid arguments are really valid. Purportedly valid arguments include those traditionally referred to as deductive. In contrast to 'deductive', however, the term 'valid' can be defined precisely. Moreover, since validity is what matters, there is no need to decide whether a given argument is deductive. Later we will use 'induction' to refer to arguments that are not purportedly valid. In a sense, therefore, we are replacing the traditional distinction between deductive and inductive arguments with the more useful distinction between arguments that are purportedly valid and those that are not.

After stating that the distinction between deduction and induction is not essential he immediately goes on to make the distinction. But of course, in the modern world in which change is worshipped it seems necessary to pretend to be treating an old subject in a new and different way. Carter prefers 'purportedly valid' to 'deductive' because "in contrast to 'deductive' the term 'valid' can be defined precisely." But 'purportedly valid' cannot be defined any more precisely than 'deductive,' which is really its equivalent.

At this point it will be helpful to step back from the problem of distinguishing between deductive and inductive arguments and take stock of the situation. We could just forget the idea of making the deductive-inductive distinction and concentrate on pointing out that in some arguments the premises necessitate the conclusions, in others the premises render the conclusions probable, and in still others the premises don't even render the conclusions probable. However, in the words of Richard Nixon, that would be the easy thing to do, but it would be the wrong thing. What is needed is a close look at the nature of arguments.

Contrary to the impression given by many logic textbooks, arguments are made by people to convince people of the truth of certain propositions. (It is possible for a person to try to convince himself of something by presenting an argument to himself.) For this reason, an example on a page of a logic textbook is not strictly speaking an argument (unless it is a quotation—a real life example). We should call this example a "possible argument." That is to say, it could be used by someone to convince someone of something. Real arguments, to repeat, are given by people to convince people of something. The person giving the argument usually has certain intentions regarding his argument. And these intentions determine whether his argument is deductive or inductive.

Let us then return to the task of distinguishing deductive (or as Carter would have it—purportedly valid) arguments from inductive arguments. A number of writers on this subject have shown that they have the right idea. For instance, Nicholas Rescher (Introduction To Logic, New York: St. Martin's Press, 1964, p. 60) makes the distinction as follows:

> The distinction between deductive and inductive arguments is one of the most important and fundamental ideas in logic. An argument that attempts (or is claimed) to provide conclusive evidence for its conclusion is called a deductive argument.
>
> In contrast, an inductive argument attempts (or is claimed) simply to provide some grounds for the conclusion —that is, to furnish good reasons for accepting the conclusion without providing conclusive evidence for it.

And Irving Copi (Introduction To Logic, 5th ed., New York, Macmillan, 1978, p. 32) has much the same to say:

> Arguments are traditionally divided into two different types, deductive and inductive. Although every argument involves the claim that its premises provide some grounds for the truth of its conclusion, only a

deductive argument involves the claim that its premises provide conclusive grounds.

An inductive argument, on the other hand, involves the claim, not that its premises give conclusive grounds for the truth of its conclusion, but only that they provide some support for it.

Perhaps the cash value of "deductive" (or "purportedly valid") is brought out most clearly by Robert Olsen (Meaning And Argument, New York, Harcourt, Brace & World, 1969, p. 175):

If the arguer believes that the premises of an argument necessarily imply the conclusion, the argument is deductive (or necessary). If the arguer believes that the premises of an argument probably imply the conclusion, the argument is non-deductive (or probable).

In this quotation the terms "deductive" and "inductive" are related to the intentions of the person putting forward the argument. To put it another way:

If a person intends that his premises necessitate his conclusion he is giving a deductive argument. If he intends only that his premises render his conclusion probable he is giving an inductive argument.

This distinction may not be as precise or tidy as some people would like, but it seems the closest to being correct. According to it we may not be able to tell whether an argument we read or hear is deductive or inductive.

Some arguments come with claims attached, but most do not. That is to say, a person may actually state that his premises necessitate his conclusion, or that his conclusion follows indubitably from his premises, or even that his conclusion is rendered probable by his premises. But many arguments do not come with such tags. Nevertheless, most of the time we can tell a person's intentions very accurately and judge his argument accordingly. In the remaining cases our only recourse is to judge the argument both ways.

Let us turn to some difficult cases and show how they would be handled given the present analysis of the deductive-inductive distinction. Nicolaus Copernicus evidently expressed himself in a very forceful way. The following examples (the first from Copi's Introduction To Logic, p. 36, and the second from Stephen F. Barker's The Elements Of Logic, New York, McGraw-Hill, 1965, p. 19) are from his work On The Revolution of The Heavenly Spheres.

"And indeed since the Planets are seen at varying distances from the Earth is surely not the centre of their orbits."
"It is necessary that the land and the surrounding waters have the figure which the shadow of the earth casts, for at the time of an eclipse it projects on the moon the circumference of a perfect circle. Therefore the earth is not a plane as Empedocles

and Anaximander opined ... or again a cylinder, as Anaximander ... but it is perfectly round."

In his solutions manual Copi analyzes the first argument as deductive, and from the language Copernicus uses it is very probable that Copi is correct. However, if I were to give this sort of argument, I would not intend that the conclusion followed with necessity from the premises. Copernicus presents good grounds for believing that the planets are at different distances from the earth at different times, yet there might be other reasons why they appear at different distances. However, I have to judge the argument of Copernicus as he gave it, keeping in mind what he intended. So I would call it deductive and judge it to be invalid. As to the second argument, Barker's analysis (Instructor's Manual To Accompany The Elements Of Logic, New York: McGraw-Hill, 1965, p. 37) is quite revealing.

"Here the conclusion of the argument is that the earth is round. If we regard this as a deductive argument, then we shall have to say that it is bad reasoning, since the conclusion does not follow from the premise with strict necessity (a cylinder or a cone also could cast a perfectly circular shadow). It is fairer to Copernicus if we regard this argument as inductive: then we can say that it is a pretty good inductive argument, for the evidence that the earth's shadow is circular does make it quite probable that the earth is spherical."

My own tendency would be to take Copernicus to be presenting a deductive argument. However, there is room for doubt, so I see nothing wrong with invoking the principle of charity, as Barker does. Nevertheless, a full discussion of such an argument would touch all bases. It is much more instructive to analyze an example like this by saying, "As a deductive argument it fails, but as an inductive argument it succeeds" than by saying, "We'll take it to be inductive, and as such it is successful."

The case of Arthur Conan Doyle's Sherlock Holmes stories is somewhat puzzling. All through these stories Holmes is said to be practicing the art of deduction. Yet his arguments are of a type that people would usually intend to be inductive: Barker gives one example in The Elements Of Logic (p. 19):

"How, in the name of good fortune, did you know all that, Mr. Holmes?" he asked. "How did you know, for example, that I did manual labor? It's true as gospel, for I began as a ship's carpenter."

"Your hands, my dear sir. Your right hand is quite a size larger than your left. You have worked with it and the muscles are more developed."

This example from "The Red-headed League" is typical. If I were to give such an argument, then realizing that a man could be born with one hand larger than the other, I would in-

tend my argument to be inductive. Yet Doyle describes this sort of thing as deductive. As a deductive argument it is invalid. As an inductive argument it is fairly strong. My inclination in dealing with these stories is to use the principle of charity and judge the arguments of Holmes as if they were meant to be inductive. It seems fairly certain that Arthur Conan Doyle didn't realize what he was claiming for these arguments in calling them deductive.

There are other puzzling cases which are mentioned in Weddle's article. At one point he writes (p. 3):

"Copi separates arguments which claim conclusive grounds for the truth of their conclusions from those which claim to provide 'only ...some grounds.' The 'some' translates into 'likelihood' or 'probability.' Likelihood and probability also seem poor criteria by which to distinguish deductive from inductive reasoning. The inference, 'It is likely that all A's are B's, and X is an A; hence; it is likely that X is in B' seems deductive. And that inference differs little from many which tradition (some tradition) has dubbed inductive, for example, 'When a low pressure ridge moves down from the Gulf of Alaska (etc.) we usually get rain the next day, and a low pressure ridge is moving down right now (etc.); hence it is likely to rain tomorrow.'"

It certainly must be admitted that in any inference of the sort "If p then probably q; p; hence probably q" the premises necessitate the conclusion. But whether an argument of this sort is deductive or inductive depends on the intentions of the person putting it forward. I would intend such an argument to be deductive, but I cannot vouch for what anyone else would intend. What such examples show is that we shouldn't take the appearance of the words "likely" or "probable" in the conclusion of people's arguments as foolproof indicators of their intentions.

As to the suggestion of Carl Wellman's (discussed by Trudy Govier in ILN i, no. 2) that we recognize three types of arguments (deductive, inductive and conductive) instead of the usual two, I see no reason to change the "traditional" way of doing things. According to Trudy Govier's comments, many moral arguments such as "You should pay your rent since you promised to do so" might fit into this new category. She says, "What is characteristic about these arguments is that they cite something as a reason for the conclusion and not necessarily as an overwhelming or conclusive reason." If this is a plausible analysis of such arguments, and if people who made them thought of them in this way, then they would be presenting inductive arguments. There seems little reason for calling them by some new name. However, it seems to me that Govier's analysis of these sorts of arguments is faulty. When people make moral arguments (and here it must be said that usually they merely make judgments), these arguments are typically enthymemes. When we complete these enthymemes (usually by supplying a missing

premise) we come up with arguments 'whose premises necessitate their conclusions. In the example given by Govier we would end up with the following argument:

If you promise to do something you should do it.
You promised to pay the rent.
Therefore, you should pay the rent.

If I were to put forward an argument of this sort I would intend it to be deductive, but of course, I cannot speak for anyone else. At any rate, there seems little reason to go outside the deductive-inductive paradigm in describing such arguments.

When all is said and done, and all the examples analyzed, it may be asked: how useful is the deductive-inductive distinction? Given that whether an argument is deductive or inductive depends on the arguer's intentions, why shouldn't we scrap the whole business and just ask of any argument: do the premises necessitate the conclusion, or render it probable, or neither? Why should we agree with Rescher that, "The distinction between deductive and inductive arguments is one of the most important and fundamental ideas in logic"? The answer to these questions is that it is very important that a person putting forward an argument know what he is trying to do. He should be clear about whether he intends his premises to necessitate his conclusion or merely render it probable. Furthermore, in judging the argument of another, in order to be fair a person should try to discern what the giver of the argument thinks he is doing, and then pass judgment on whether or not he succeeds. If a person presenting an argument is clear in his own mind about what he is trying to do, the chances are greatly lessened that he will be caught up short by some criticism of his argument. And from the critical side, in examining the argument of another, a person will be able to pass judgment on the argument actually presented, and not on something else. Of course, if the one giving the argument has not done what he thought he was doing, this can be pointed out very quickly, e.g., "You've presented this argument as if the conclusion follows necessarily, but it really doesn't."

In assessing any argument we should ask two quite separate questions: (1) What does the person presenting the argument think he is doing, i.e., is he presenting a deductive or inductive argument? (2) What does the person succeed in doing, i.e., do his premises necessitate his conclusion,
        do they render his conclusion probable, do they give some grounds for accepting the conclusion but not enough to render it probable, are they irrelevant to the conclusion?