Classification of Arguments into Types

Inferences are assessed in terms of the relationship that is held to exist between the premises and the conclusion of an argument. Since all arguments involve the claim that their premises provide reasons (or evidence) on the basis of which the conclusion is arrived at, that is, the premises provide some grounds for the truth of their conclusions, it is this relationship between the premises and conclusion that determines whether an argument is correct or not. In evaluating arguments or making inferences two distinct procedures or methods have been identified. These reasoning procedures are ordinarily called the deductive and inductive procedures. It is, however, a notable fact that in discussing these procedures the locutions: deductive and inductive inferences and deductive and inductive arguments are often used interchangeably. Although this does not really do any harm, it is nevertheless important to remark that a basic distinction exists between an argument and an inference. An argument both generally and primarily involves the provision of reasons in support or against a viewpoint or position, while inference is the process that corresponds to this. In other words, whereas an argument is simply a group of propositions in which it is claimed that one or more propositions (called the conclusion) follow from the other propositions (called the premises); an inference is the transition from those group of propositions called the premises to the group of proposition(s) called the conclusion. It is instructive to note that traditionally, ―deduction‖ is defined as reasoning from the general to specific and "induction" as reasoning from the specific to the general. While this usage is still sometimes found even in Logic texts, it is misleading and erroneous. For example, according to the more modern definitions given below, the following argument, even though it reasons from the specific to general, is deductive, because the truth of the premises guarantees the truth of the conclusion:

The members of the Adamu's family are Bello, Hassan and Aisha.

Aisha wears glasses.

Hassan wears glasses.

Bello wears glasses.

Therefore, all members of Adamu's family wear glasses

Moreover, the following argument, even though it reasons from the general to specific, is inductive: It has rained in my village every 1st January in recorded history.

Therefore, it will rain in my village this coming 1st January.

The difference between deduction, a leading down and induction, a bringing in does not lie in reasoning from the general to specific and reasoning from the specific to the general. In deduction, we begin with statements that function as principles and we argue from them. In induction, we begin with statements that do not function as

principles but rather lead to them in conclusions.

Deductive Argument The inferential procedure or method of evaluating arguments called deductive inference is that in which the relationship between the premises and conclusion of an argument is such that the premises provide adequate or sufficient reason(s) for asserting the conclusion, that is, the information provided by the premises is such that once they are accepted it would be inconsistent or self –contradictory to deny the conclusion. In other words in evaluating a deductive argument the inference is such that the premises necessitate or logically imply the conclusion. The point here is that some proposition (the conclusion) follows with strict necessity from other propositions (the premises). This is what we mean by deduction; the noun "deduction" refers to the process of advancing a deductive argument, or going through a process of reasoning that can be reconstructed as a deductive argument, that is, the conclusion of an argument is deduced from its premises. Because the premises of deductive arguments provide conclusive information/evidence for their conclusion, the truth of the conclusion of such arguments therefore necessarily follows from the truth of the premises; this is the exact meaning of the premises necessitating the conclusion. Little wonder, therefore, the claim that in deductive arguments inference does not go beyond the information provided in the premises, it simply make part of it explicit. The point is that the premises of deductive inference necessitate the conclusion precisely because the conclusion says nothing that is not at least, implied, if not actually stated, by the premises. This underscores why deductive arguments are said to be demonstrative and empty. The conclusions of deductive arguments do not give new knowledge or information; the truth of the conclusion is "contained within" the truth of the premises; i.e., the conclusion does not go beyond what the truth of the premises implicitly requires. For example, in

All sound academics are intellectually honest premise

All philosophers are sound academic premise

Therefore, philosophers are intellectually honest conclusion

The conclusion, for certain, says nothing that is not already expressed in the premises. In deductive arguments the conclusion follows from the premises because of the agreed meaning of the syncategorematic words used to express the argument. Syncategorematic words are connector words, such as 'if', 'or', 'not', and 'all', rather than content-bearing words. For example, in an argument of the form "All A are B and all B are C, so all A are C," the argument is valid primarily because of the concept of class inclusion expressed in the words "all...are..." Because deductive arguments turn upon the meaning of words, the conclusion of a valid deductive argument follows from the premises by definition. The premises, in effect, stipulate that the conclusion is true. It is for this reason as we have noted that deductive reasoning gives us no new information about the world; but this also makes deduction the most powerful

type of reasoning. Given the truth of the premises, the conclusion must also be true. Because deduction rhymes with reduction, you can easily remember that in deduction, you start with a set of possibilities and reduce it until a smaller subset remains. For example, a murder mystery is an exercise in deduction. Typically, the detective begins with a set of possible suspects — for example, the gateman, the maid, the business partner, and the widow. By the end of the story, he or she has reduced this set to only one person — for example, "The victim died in the bathtub but was moved to the bed. But, neither woman could have lifted the body, nor could the gateman with his war wound. Therefore, the business partner must have committed the crime." It needs be remarked that logic allows you to reason deductively with confidence. In fact, it's tailor-made for shifting through a body of factual statements (premises), ruling out plausible but inaccurate statements (invalid conclusions), and getting to the truth (valid conclusions). For this reason, logic and deduction are intimately connected.

Inductive Argument

The second type of argument, called induction, involves the inferential process called inductive inference; it is a reasoning process in which the relationship between the premises of an argument and its conclusion is such that the set(s) of information provided by the premises do not necessarily warrant the conclusion, that is, the premises does not give conclusive evidence or information for the establishment of the conclusion. This is not to say that the premises of an inductive argument do not provide some support for the conclusion, the point is that the support is not adequate; this is why it is said that the premises do not entail the conclusion. In other words, inductive arguments are those whose premises do not necessitate, but only render probable their conclusion. Inductive reasoning as such does not provide conclusive evidence for the truth of a given conclusion. In such reasoning, we merely want the evidence to show that it is more probable than some other conclusions we might have reached. Because the premises of inductive argument provide only some support, for the establishment of the conclusion, it is therefore possible, in inductive inference for the premises of an argument to be true and the conclusion false. In this connection, inductive inferences deal with cases of probability and the theory of confirmation, but not with the rules of correct reasoning in the sense of conclusive or valid reasoning. Inductive logic as such is concerned with the soundness of those inferences for which the evidence is not conclusive; it deals with inferences, which are probable, given as evidence the truth of certain inferences upon which they are based. For example, in the two inferences below:

Pr1: All members of the National Assembly from the South Eastern and South South geo-political States elected under the platform of the Peoples Democratic Party were not democratically chosen.

Pr2: All members of the National Assembly from the South Western, North Central

and North Eastern geo-political states elected on the platform of the People's Democratic Party (PDP) were not democratically chosen.

Con: Therefore, all members of the National Assembly from the all geo-political Zones elected under the platform of the People's Democratic Party were not democratically chosen.

Pr1: Most radical Student Union Leaders are Marxists

Pr2: Red Drum is a radical Student Union leader

Con: Therefore, Red Drum is a Marxist

the premises of the arguments only render the conclusions probable; they do not entail the conclusion. This explains why it is said, concerning inductive reasoning that the premises of the argument lead to what may be true, rather than what must be true. In effect, there is no logical necessity between the truth of the premises and the truth of the conclusions. The upshot is that one can accept the truth of the premises of the arguments and still deny the conclusion without any (formal) contradiction. This in a more general sense is what we mean by saying that an inductive argument does not involve the claim that its premises entail the conclusion; it only claims that the premises provide some evidence for the conclusion.

The point that sticks out here is that no matter the weight of evidence of an inductive premise(s), the conclusion of such an argument is only probable. Nevertheless, a distinction between strong and weak induction has been. A strong induction in this sense is an argument in which the truth of the premises would make the truth of the conclusion highly probable, but not definite. But when the link between the premises and the inductive conclusion is weak, a weak induction is said to apply. For example:

My teacher always award bonus marks.

My teacher has been assessed as a good teacher.

Therefore: All teachers who award bonus marks are good teachers

Assuming the premises to be true, this example is built on the certainty that —because my teacher always award bonus marks and my teacher has been assessed as a good teacher" leading to the generalization that —All teachers who award bonus marks are good teachers.". However, the link between the premises and the inductive conclusion is weak. No reason exists to believe that just because my teacher awards bonus marks and he is assessed as a good teacher that there are no other ways for teachers who do not award bonus marks to be assessed as good teachers, or that other people cannot be assessed as good teachers unless they award bonus marks. Indeed, not all those assessed as good teachers award bonus marks; moreover, not all teachers who award bonus marks are assessed as good teachers. The conclusion cannot be strongly inductively made from the premises. Using other knowledge we can easily see that this example of induction would lead

us to a clearly false conclusion. Conclusions drawn in this manner are usually overgeneralizations; the probability link is weak, in fact unwarranted.

Many ripe oranges are sweet.

Therefore: All ripe oranges are sweet

In this example, the premise is built upon a certainty; however, it is not one that leads to the conclusion. Not every ripe orange is sweet. In other words, unlike "The sun rises every morning", there are plenty of examples of ripe oranges that not sweet. Therefore the conclusion drawn can easily be true or false, and the inductive logic does not give us a strong conclusion. In both of these examples of weak induction, the logical means of connecting the premises and conclusion (with the word "therefore") are faulty, and do not give us a strong inductively reasoned statement. If we take strong induction we have such an argument as:

All observed humans die.

Therefore: All humans are mortal.

This exemplifies the nature of induction: inducing the universal from the particular. However, the conclusion is not certain. Unless we can systematically falsify the possibility of humans not dying, the statement (conclusion) may actually be false. For example; one could examine to find whether it's possible to pinpoint humans who didn‘t die. In doing so, we could discover that there are records of humans who didn‘t die (such examples as Elijah, Enoch). Even if we change the definition of "human" to require mortality, the original question of the possibilities for immortality would stand, semantically only hidden. A strong induction is thus an argument in which the truth of the premises would make the truth of the conclusion highly probable, yet not definite. An inductive argument is intended to provide only probable support for its conclusion, being considered strong if it succeeds in providing such support and weak if it does not. The point is that, in inductive arguments whether weak or strong, the premises do not afford sufficient guarantee for its conclusions. This is why it is said that in inductive reasoning, the relationship between the premises and conclusion is not a matter of necessity but of probability; even if all the premises of an inductive argument are true, it would still not be sufficient to assert that the conclusion is true. This is what we mean when we said that the truth of the conclusion of an inductive argument whose premises are true could be denied without involving any contradiction. This is further illustrated by the example below:

Pr1: Nneoma prepares better than Nkechi, Chinwe and Amara for her semester examinations and has always performed better them.

Pr2: Nneoma has prepared better than Nkechi, Chinwe and Amara for the forth-coming semester examinations.

Con: Therefore, Nneoma is sure to perform better than Nkechi, Chinwe and Amara in

the forth-coming semester examinations.

The truth of the conclusion of this argument can be denied without any kind of contradiction. This is because the premises are not sufficient to warrant the conclusion. The best the premises of the above argument (as indeed in all inductive inferences) can do is make probable the conclusion. It is obvious that its truth (as indeed the premises of all inductive arguments) do not guarantee the truth of its conclusion; it merely supports it. Accordingly, inductive arguments are said to be non -demonstrative – that is, the truth of the conclusion of such arguments does not follow necessarily from the truth of the premise(s). Inductive inferences are, therefore, said to be ampliative in the sense that the conclusion expands upon the content of the premises; that is the ampliative character of induction, by contrast, provides a way to extend our knowledge. This ampliative character is a primary virtue of inductive arguments. However, for Ron Yezzi (1992), even the concept of ampliative argument is suspect, when we remind ourselves that it suggests getting something from nothing or, more precisely, that its conclusion claims more than its premises are. Inductive arguments come in several forms, including enumerative, analogical, and causal.

In **enumerative induction**, we argue from premises about some members of a group to a generalization about the entire group. The entire group is called the target group; the observed members of the group, the sample; and the group characteristics we're interested in, the relevant property... It licenses an inference from "Some As are B —to "All As are B. An enumerative induction can fail to be strong by having a sample that's too small or not representative. Opinion polls are enumerative inductive arguments, or the basis of enumerative inductive arguments, and must be judged by the same general criteria used to judge any other enumerative induction.

In analogical induction, or argument by analogy, we reason that since two or more things are similar in several respects, they must be similar in some further respect. An (inductive) analogy thus proceeds from known similarities between two things to a conclusion about an additional attribute common to both things

P is similar to Q.

P has attribute A.

Therefore: Q has attribute A.

An analogy relies on the inference that the properties known to be shared (the similarities) imply that A is also a shared property. The support which the premisses provide for the conclusion is dependent upon the relevance and number of the similarities between P and Q. We evaluate arguments by analogy according to several criteria:

(1) the number of relevant similarities between things being compared,

(2) the number of relevant dissimilarities,

(3) the number of instances (or cases) of similarities or dissimilarities, and

(4) the diversity among the cases.

A **causal induction** draws a conclusion about a causal connection based on the conditions of the occurrence of an effect. Premises about the correlation of two things can indicate a causal relationship between them, but additional factors must be confirmed to establish the exact form of the causal relationship. This is fully illustrated by the following example and discussion [culled from Mission Critical (Introduction to Causal Arguments)]

A bicyclist moves into the traffic lane in order to pass a truck illegally parked in the bike lane. The driver of a car approaching from the rear slams on her brakes in order to avoid hitting the bicycle. A following car fails to stop in time, and smashes into the back of the first .The insurance companies disagree about who should be held responsible, and they go to court to decide who caused the accident.

What arguments are likely to be made in court? The bicyclist's lawyer will probably claim that the illegally parked truck caused her client to swerve into the lane of traffic. The lawyer for the driver of the first car will probably claim that the bicyclist's actions caused her client to slam on the brakes. The lawyer for the second driver will probably claim that the first car's sudden stop caused his client to smash into its back. None of these claims seems to fit the pattern of an inductive argument, because none of them seems based on observation or experience. But, in fact, they do fit that pattern. The bicyclist's lawyer, for example, is actually arguing that:

1. Normally the bicyclist would have continued in the bike lane, but in this instance he swerved into the lane of traffic.

2. The only significant difference between "normally" and "in this case" is the presence of the illegally parked truck.

3. Therefore, the truck caused the bicyclist to swerve.

The lawyers for the drivers are making similar arguments: the first, that the only significant difference was the swerving bicycle; and the second, that the only significant difference was the suddenly braking car. Like inductive reasoning, then, these causal arguments are based on observed instances. (In this case, no observations are needed to convince us that the bicyclist would not normally have swerved or the first driver would not normally have braked suddenly. But if, for some reason, observations were necessary, we could design a study of automobile and bicycle traffic on that street, or survey drivers and bicyclists about their experiences or in other ways provide evidence to verify the part of the premise describing the normal pattern of traffic. These causal arguments, then, follow the form of an inductive argument with one important exception: whereas an inductive argument

carries as part of its second premise the implication that there is otherwise no significant difference, these causal arguments carry the implication that there is only one significant difference: for the bicyclist, the truck; for the first driver, the bicycle; for the second driver, the first car. The strength of a causal argument, then, relies on three factors:

1. how acceptable or demonstrable the implied comparison is (for example, do we think that there is a basic similarity in most respects between the circumstances of this accident and those of the many other times bicycles and cars have traveled on this street safely;
2. how likely the case for causation seems to be (for example, do we think that a bicycle swerving into an car's lane can cause an accident?);
3. how credible the "only significant difference" or "only significant commonality" claim is (for example, do we believe that the illegally parked truck is the only significant difference between this case and the many other times bicycles and cars went down that street without an accident?).

Generally, in inductive arguments a conclusion is drawn about a class of objects, based upon the characteristics observed in a sample of that class. Such arguments are persuasive to the extent that the sample was connected causally to the larger class in such a way that the characteristics of the larger class will be reflected in the sample. For example, "Most of the jellybeans in my hand are red. They were taken from this jar, and I mixed them up well before I took them out. So most of the jellybeans in this jar are red." It is because inductive arguments turn upon the causal connection between a sample and a larger class that they allow us to draw conclusions that extend beyond what is said in the premises. Induction thus indicates facts about the world beyond what we actually observe; but this also makes induction open to the possibility of error. Given the truth of the premises, the conclusion is probably true, but even true premises cannot guarantee a true conclusion.

In sum, induction begins with the same two letters as the word increase, which can help you remember that in induction, you start with a limited number of observations and increase that number by generalizing.

For example, suppose you spend the weekend in a small town and the first five people you meet are friendly, so you inductively conclude the following: "Everybody here is so nice." In other words, you started with a small set of examples and you increased it to include a larger set.

On the other hand, as apparently useful as induction is, it's logically flawed. Meeting five friendly people — or 10 or 10,000 — is no guarantee that the next one you meet won't be nasty. Meeting 10,000 people doesn't even guarantee that most people in the town are friendly — you may have just met all the nice ones. Logic, however, is

more than just a good strong hunch that a conclusion is correct. The definition of logical validity demands that if your premises are true, the conclusion is also true. Because induction falls short of this standard, it's considered the great white elephant of both science and philosophy: It looks like it may work, but in the end it just takes up a lot of space in the living room

The Tests of Deductive Arguments:

Validity and Soundness A deductive argument is one in which the claim is made that some proposition (the conclusion) follows with strict necessity from some other propositions (the premises), that is, that it would be inconsistent or self-contradictory to assert the premises but deny the conclusion. And when the conclusion of an argument follows, from its premises such that if the premises are true the conclusion must of necessity also be true, then the argument is said to be valid. Validity in this connection, and which is primary, is a property predicated of arguments, which are such that if the premises are true, the conclusion would have to be true. Validity thus means the same thing as logically correct, that is, the conclusion follows logically from the premises; an argument is logically correct because its conclusion cannot fail to be true if its premises are true. To say that an argument is valid is to say that the conclusion really does follow from the premises. That is, an argument is valid precisely when it cannot possibly lead from true premises to a false conclusion; validity describes the relationship between the premises and conclusion, and it means that the premises imply the conclusion, whether or not that conclusion is true. In fact, validity relates to how well the premises support the conclusion and is the golden standard that every deductive argument should aim for. An argument that is not valid is said to be „‟invalid"". An example of a valid argument is given by the following well-known syllogism:

All men are mortal

Socrates is a man.

Therefore, Socrates is mortal.

What makes this a valid argument is not the mere fact that it has true premises and a true conclusion, but the fact of the logical necessity of the conclusion, given the two premises. No matter how the universe might be constructed, it could never be the case that this argument should turn out to have simultaneously true premises but a false conclusion. The above argument may be contrasted with the following invalid one:

All men are mortal

Socrates is mortal.

Therefore, Socrates is a man.

In this case, the conclusion does not follow inescapably from the premises; a universe is easily imagined in which Socrates' is not a man but a woman, so that in fact the above premises would be true but the conclusion false. This possibility makes the argument invalid. If an argument is invalid, it will always be possible to construct a counterexample to show that it is invalid. A counterexample is simply a description of a scenario in which the premises of the argument are all true while the conclusion of the argument is false.

Logic as the criteria for the evaluation of arguments has as its fundamental task the provision of standards or criteria to judge whether an argument is valid or invalid; that is, logically correct or not. This explains why we say that logic is interested in the completed process of reasoning; the logician does not and cannot tell us what to infer from available information, what he does actually is to tell us whether our inference are logically correct (valid), given available information. In the following example:

All acclaimed beautiful girls are promiscuous

All fair-complexioned girls are acclaimed beautiful

Therefore, fair-complexioned girls are promiscuous

the argument is adjudged valid because the conclusion is derived from the premises; the information provided at the conclusion follows from the information in the premises. The point is that validity is a relationship of logical connection between the premises and the conclusion; the conclusion is derived from the premises. Thus, for the purposes of validity, it doesn't matter whether the premises are actually true or false. All that matters for validity is whether the conclusion follows from the premises. You can see that even though the premises and conclusion of the argument are all false, the conclusion – faircomplexioned girls are promiscuous – follows from the premises – All acclaimed beautiful girls are promiscuous and all fair -complexioned girls are acclaimed beautiful. Yet the argument is clearly valid because if you assume that —All acclaimed beautiful girls are promiscuous‖ is true, then, since All fair-complexioned girls are acclaimed beautiful, it follows that —fair-complexioned girls are promiscuous‖ must also be true. Thus, whether an argument is valid has nothing to do with whether the premises of the argument are actually true.

But an argument that is such that the information provided in the conclusion could be true without the premises being so is said to be invalid. That is, in an invalid argument, it is possible for the premises of an argument to be true and the conclusion false; the premises of an invalid argument do not entail the conclusion. The conclusion could contain some information not provided in the premises; therefore, it is possible for the premises to be true and the conclusion false.

Although, it is generally said that a valid argument is one such that if the premises

are true, the conclusion must necessarily be true also, the point is important that validity and truth are not co-extensive. In fact, arguments are evaluated in terms of validity and invalidity, not in terms of truthfulness and falsity; the attributes of truth and falsity are ascribable to propositions, whereas the attributes of validity and invalidity are ascribable to arguments. In real logic parlance, therefore, it is incorrect to say of an argument that it is true or false as it is also incorrect to say of a proposition that it is valid or invalid. This, however, is not to say that there is no relationship between the truth or falsity of a proposition and the validity and invalidity of an argument. A valid argument with all true premises and a true conclusion is called a sound argument. A sound argument is one that is not only valid, but begins with premises that are actually true. The example given about acclaimed beautiful girls is valid, but not sound. However, the following argument is both valid and sound:

No felons are eligible voters.

Some acclaimed politicians are felons.

Therefore, some acclaimed politicians are not eligible voters

Here, not only do the premises provide the right sort of support for the conclusion, but the premises are actually true. Therefore, so is the conclusion. Although it is not part of the definition of a sound argument, because sound arguments both start out with true premises and have a form that guarantees that the conclusion must be true if the premises are, sound arguments always end with true conclusions. For an argument to be sound it must be valid and all the propositions (the premises and the conclusion) must also be true. According to Susan Haack (1978: 14), “no argument can be sound unless it is valid.” It should be noted that both invalid, as well as valid but unsound, arguments can nevertheless have true conclusions. One cannot reject the conclusion of an argument simply by discovering a given argument for that conclusion to be flawed

The Tests of Inductive Arguments: Reliability and Strength

An inductive argument does not involve the claim that its premises entail the conclusion; it only claims that the premises provide some evidence for the conclusion. Inductive arguments thus cannot guarantee the truth of the conclusion, which means they will look like invalid deductive arguments. Indeed, they are sometimes classified as such. This is because, it always possible to produce counterexamples for all inductive arguments; an inductive argument never promises absolute truth. We measure inductive arguments by degrees of probability and plausibility not absolute categories like validity and soundness. Validity and soundness do not allow for a sliding scale of degrees. They are absolute conditions: There is no such thing as being partially valid or somewhat sound. Although, logic as the criteria for the evaluation of arguments is naturally more inclined to deductive reasoning than inductive reasoning, more so, that inductive arguments cannot guarantee truth, this, however, does not privilege deductive reasoning and scorn

inductive arguments. That is an unfair measure, and it is not practical. The truth is that most arguments we create and evaluate in life are inductive arguments. It might be helpful to think of deductive arguments as those created in perfect lab conditions, where all the ideal parameters can be met. Life is much more complicated than that, and we rarely get ideal conditions. One main reason is that we rarely ever have all the information we need to form an absolutely true conclusion. When new information is discovered, a scientist or historian or psychologist or business executive or a college student should investigate how it affects previous ideas and arguments, knowing that those previous ideas may need to be adjusted based on new information. Inductive arguments can never lead to absolute certainty, which is one reason science keep studying and trying to add to knowledge. This does not mean, however, that any inductive argument will be a good one. Inductive arguments must still be evaluated and tested, and the two main tests are reliability and strength. Test of reliability, much like that of validity for deductive arguments, tests an inductive argument‘s reason, its internal logic. In other words, just because an inductive argument cannot guarantee a true conclusion doesn‘t mean that it should not be logically constructed. One cannot make just any sort of claim, particularly one that does not have a reliable basis. Reliability, unlike validity, can be measured by degree. More reliable arguments are ones that have a more solid basis in reason. Consider this example:

Ninety-seven percent of politicians are wantonly corrupt (premise)

Alhaji Gembu is politician (premise)

Therefore, Alhaji Gembu is wantonly corrupt (conclusion)

This argument has a high degree of reliability. While it may well be true that Alhaji Gembu is one of the three percent of politicians that are not wantonly corrupt, it ismuch more likely, given the initial premise that he is not. If the initial premise changes, however, so does the reliability of the argument:

Thirty-three percent of politicians are wantonly corrupt (premise)

Alhaji Gembu is politician (premise)

Therefore, Alhaji Gembu is wantonly corrupt (conclusion)

Note how the degree of reliability has gone done dramatically. The argument can now be considered unreliable since the conclusion that Alhaji Gembu is wantonly corrupt is improbable given the premises provided. The conclusion still could be true, but it has tipped toward unlikely. The second test of inductive arguments is strength. Strength, like reliability, can be measured by degree. Strong arguments must have the following conditions: (1) They must be reliable arguments; (2) they draw upon multiple lines of reasoning as support and/or a collection of data. Indeed, the more the data and the more the reasons for a conclusion, the stronger the argument. Consider the following argument:

Jane and Godwin has been dating for the past six months (premise)

Godwin has never cheated on Jane (premise)

Therefore, Jane has every reason to trust that Godwin cannot cheat on her (conclusion

This argument is reasonable; we can see that the premises may logically lead to the conclusion. However, the argument is not very strong as Jane and Godwin has only been dating for the past six months. Is that enough information to make the conclusion a likely one? What if we had more information, like:

Jane and Godwin has been dating for the past three years (premise)

Godwin has never cheated on Jane (premise)

Therefore, Jane has every reason to trust that Godwin cannot cheat on her (conclusion)

This argument, with more data to consider (three years of information instead of just six months), is much stronger. An argument also gets stronger when reasons are added:

Pr1: Jane and Godwin has been dating for the past three years Godwin has never cheated on Jane Godwin is generally known to be chaste and faithful (additional premise)

Pr2: Godwin comes from an exemplary home and is well bred (additional premise)

Con: Therefore, Jane has every reason to trust that Godwin cannot cheat on her (conclusion)

This argument is even stronger. Not only does it have more data, but it also has additional reasons for Godwin's faithful nature.