

Why Te is Inductive and Ti is Deductive

Through our reading of the literature on Jungian typology, both online and offline, we have seen at least three popular actors in the field propose the idea that “Te is Deductive and Ti is Inductive.” Our argument is as follows: **(1)** Neither of those functions can be reduced to being merely deductive or inductive, but doing so can still be worthwhile as an exercise that points towards the ultimate nature of each function. **(2)** Even with this reservation in mind, **Ti is deductive while Te is inductive.**

We will now argue these claims.

First, we look at some cursory definitions of Te and Ti as cognitive processes:

Te: Starts with the facts, then moves to the theory, then ends with the facts.

Ti: Starts with the theory, then moves to the facts, then ends with the theory.

Next, let's look at the definitions of deduction and induction:

Deduction: Starts with the theory, then moves towards the facts.

Induction: Starts with the facts, then moves towards the theory.

So we see that neither Te nor Ti can be made to fit 100% with either deductive or inductive reasoning. Both functions are more complex than simple epithets like inductive or deductive.

But don't take our word for it. Here is what Jung said about Te and Ti:

“External facts are not the aim and origin of [Ti]. ... [Ti] formulates questions and creates theories, it opens up new prospects and insights, but with regard to facts its attitude is one of reserve. They are all very well as illustrative examples, but they must not be allowed to predominate. **Facts are collected**

as evidence for a theory, never for their own sake. If ever this happens, it is merely a concession to the extraverted style.” (*Psychological Types* §628)

Bam. After this last sentence, it is hard to argue that Te should be more deductive than Ti.

Likewise, here is what Myers said about Te and Ti:

Te: “Relies on fact ... depends upon the facts of experience ... has a tendency to multiply facts.”

Ti: “Values facts chiefly as illustrative proofs of the idea ... neglect[s] facts ... coerce[s] them into agreement with the idea.”

(Both definitions are from Gifts Differing, chapter 8.)

So you see, Myers and Jung are in agreement: In Te, we have a greater preoccupation with the facts, while in Ti, we have a greater preoccupation with the theory.

With deductive reasoning, the overall theory determines the facts, whereas with inductive reasoning the overall facts determine the theory.

Deductive reasoning stresses the theory and neglects the facts that don't fit, as does Ti.

Inductive reasoning stresses the facts and neglects the facets of the theory that do not fit, as does Te.

In the end, neither Jung nor Myers nor any of the other classical authors ever used the words 'inductive' and 'deductive' to make sense of Ti and Te. So maybe the argument will go on forever. But that doesn't mean that the two lines of argument are equally cogent.

The problem appears to be that people learned in school that induction is 'wrong,' and so everyone wants their function to be the deductive one. However, while Induction may be 'wrong' in science, our lives would be vastly inefficient if we were to be deductive all the time.

Induction is efficient. It provides support for a conclusion without guaranteeing its ultimate truth. *And in the real world, that is often enough.* For example, if a bunch

of business leaders are sitting around a table, deciding whether to launch a product, they have to use inductive reasoning: “We believe that this product will sell because similar products have sold in the past.” (Or the scientific equivalent: “I believe that the next swan that I see will be white, because almost all swans are white.”) If these business leaders used deductive reasoning, they would never get anywhere!

So there is nothing ‘wrong’ with inductive reasoning as long as one keeps scientific truth out of the question.

So that is our argument as to why Te is inductive and Ti is deductive. As we said, the functions are more complex than just these simple words, and our argument does in no way mean to say that *actual people* who prefer to reason by way of Te can’t use deductive logic when the situation calls for it, just as we are not saying that Ti users can’t use inductive logic when the situation calls for it.

On average, however, there is *some* connection to the overall point in so far as TJ types are more likely to “leave theoretical nuances on the table” as they pursue the *facts*, while TP types are more likely to “leave facts on the table” as they pursue the *theory*.

Update: As John says in the comments below, there are some alternative definitions of deductive and inductive reasoning besides the classical one we cited above. Let’s look at those other definitions. Here are some different examples from a modern textbook:

Inductive Reasoning:

1. The window of my house is broken.
2. There are footprints in my house.
3. My valuables and electronics are missing.
4. ***Therefore, someone broke into my house.***

This example is actually much the same as the classical definition of inductive reasoning that we gave above. One starts with the facts, and then moves towards the theory. We also clearly see here how the manner of reasoning is a *multiplication of facts* (i.e. an extrapolation from facts) and we know from Myers that Te reasons by the multiplications of facts. Thus, in this example, inductive reasoning is still more reminiscent of Te, even though a person who used Ti

would probably conclude the same thing. The difference is not so much one of logic, as it is one of psychology: On average, a Te user would be more certain of the inductive conclusion that someone robbed the house than the Ti user would. For as Jung said, external facts are “not the aim” of Ti, and so the Ti user is less comfortable with this type of reasoning as it pertains to the outer world.

Next example.

Deductive Reasoning:

1. A woman was murdered in her bedroom.
2. If John was seen at the ballgame at the time of the murder, John cannot be the murderer.
3. John was seen at the ballgame.
4. ***Therefore, John is not the murderer.***

Here we see a line of reasoning that is based on what follows logically from the premises. It is still deduction because the line of reasoning is not so much concerned with the facts as it is concerned with establishing a logical relation between the facts. In the burglar example above, even if 1, 2, and 3 are correct, 4 might still be wrong. In the ballgame example, if 1, 2, and 3 are correct, then 4 *must* be right. There is no guesswork or multiplication of facts involved.

However, while it would be nice to be able to peg this example to either Te or Ti, we don't think that such an attribution is possible. In this example, we think the line of reasoning is simply logical, and whether the person reasoning has a preference for Te or Ti will be of minor importance here.

Now for a final example.

Deductive Reasoning:

1. All men are mortal.
2. Obama is a man.
3. ***Therefore, Obama is mortal.***

Here we have an example of hierarchical reasoning. What is true for the higher level of organization (“man”) must be true for the lower levels as well (“Obama, a man”). This is a type of deductive reasoning, *but it is actually more reminiscent of Te than Ti!* How can that be? The reason is that here we see some top-down logic that actually leaves some theoretical nuances on the table. We reason in an *efficient* manner, and we don't care about the possible exceptions to the rule. “What possible exceptions could there be,” you ask?

Well, for example, both the Buddha and the philosopher [Immanuel Kant](#) reasoned that mortality and immortality could never be proven. There were so-called “undecidable” categories. For example, if a person is immortal, we will never see his immortality; we will merely see that he keeps living on, no matter what happens. But living past one’s last bout with fate does not guarantee that one won’t die the next time around (*and if you thought that, that was because you used induction to try and establish the truth of the matter*).

Likewise, with mortality, you don’t see the *termination* of consciousness. You only see consciousness *leaving the body*. So does consciousness terminate, or does it “live on” outside of the body? According to Kant and the Buddha, we cannot prove anything, either one way or the other.

These examples from Kant and the Buddha are reminiscent of the types of questions that are at the forefront of consciousness to a person that uses Ti with N (*not necessarily in that order*). In a similar situation, a Te user – *even as he is using deductive reasoning* – would be far more likely to simply look to the external facts and disregard these considerations by Kant and the Buddha as sophistries that are not relevant in the real world.

So in our final example, we actually provide an instance of a deductive argument that sits better with Te than Ti. But we also see that even when Te is prone to deductive reasoning, its lifeblood is still the facts, first and foremost. As we have said in this article, we do not deny that one can make an argument for Te being reminiscent of deductive reasoning, but based on the arguments that we have laid out above, we *do* contest that Te – with its preoccupation with efficiency and facts – could be said to be *as* deductively oriented as Ti.

34 Comments

John says:

APRIL 17, 2013 AT 10:06 AM

You are mischaracterizing induction and deduction as understood in the modern sense. You say that “Deductive reasoning stresses the theory and neglects the facts that don’t fit, as does Ti.”

Deductive reasoning is the study of what follows from what by force of logical consequence. An argument is deductively valid if, and only if, whenever the

premises are true the conclusion is true. For instance take the following argument:

If swans are white then Obama is made of cheese.

Swans are white.

Hence, Obama is made of cheese.

This is deduction. The conclusion is inevitable, given the premises.

Deduction is hence not concerned with particular facts, but rather with structure and the form that connects strings of arbitrary facts.

If someone came with a “deduction”, and the facts did not agree with the conclusions of this deduction then it would not have been a “real” or logically valid deduction.

admin says:

APRIL 17, 2013 AT 10:34 AM

Hmm, yes, we came across multiple definitions of Deductive reasoning. But in the end, we used the classical one [as found here](#), as that is the most well-known and thus, the one that people are most likely to refer to when they use the term ‘Deduction.’

Hasen el Judy says:

APRIL 28, 2013 AT 6:57 AM

Absolutely agree with your analysis. Glad to finally see someone calling out this often repeated mistake and correcting it :)

admin says:

APRIL 28, 2013 AT 1:27 PM

Thanks!

Desmond says:

APRIL 29, 2013 AT 4:31 AM

I have to agree, as well. While no type is going to use one type of reasoning

exclusively, it would make me sense Ti types would have a bent toward deductive logic rather than inductive, and Te inductive logic. I think doing something as simple as reading the Wikipedia pages for deduction and induction as well as Jung's descriptions of Ti and Te in the tenth chapter of Psychological Types would make this argument sufficiently self-evincing.

I'm somewhat surprised Popper wasn't mentioned in the article.

admin says:

APRIL 29, 2013 AT 2:47 PM

We avoided Popsies because we didn't want it to be a discussion about truth. Then people would just revert to wanting to be the deductive one, no matter what.

intjosh says:

OCTOBER 4, 2013 AT 5:43 PM

Possibly helpful, Te's inductive logic is sometimes referred to as "circumstantial" logic. It works by more often firing the part of the brain that comes up with arguments and reasons for the topic or situation at hand, as opposed to the parts that do universal systemic logic.

Petter says:

JANUARY 27, 2014 AT 9:22 PM

Deduction: Ti -> Ni -> Te

Induction: Te -> Ne -> Ti

Petter says:

JANUARY 28, 2014 AT 9:36 AM

Deduction: (Te ->) Ti -> Ni -> Te

Induction: Te -> Ne -> Ti (-> Te)

The theory becomes a fact and/or a new premise.

Petter says:

FEBRUARY 9, 2014 AT 1:28 PM

Dario Nardi:

F3 “Deductive Analyst” Make logical deductions, Backtrack or correct your thinking due to a reasoning error, Follow a chain of reasoning – Gets active when we follow a branching logical structure or chain of reasoning towards a conclusion. Requires thinking in words or symbols.

O1 Visual Engineer Read a chart or diagram, Visually disassemble an object to visualize its components and how it works, Visual how elements of an object will fit together to form a structure, Mentally rotate an object in your mind’s eye – People who rely on this region are natural engineers and architects, able to mentally rotate objects, follow charts and diagrams with ease, and project how building element will fit together in their mind’s eye. This region can also compensate for or mimic deductive reasoning, by visualizing tree structures or Venn diagrams.

F4 Expert Classifier Categorize a person, place, thing, event or idea, Have a sense for how well a concept fits a particular category, Links two concepts together. – Gets active when we classify and define concepts. For example, is a dolphin a fish or mammal? Like F3, underutilized by most people. Requires domain expertise to build up accurate categories.

Deduction: mainly Te, but also Ti

Induction: mainly Ne

admin says:

FEBRUARY 9, 2014 AT 10:32 PM

However, Nardi’s study is not peer reviewed and has serious methodological problems. I.e. people know beforehand what types they are identified with so you essentially have a contaminated experiment. He needs to do double blinds and get it peer reviewed. In the meantime, going by Jung is better.

anti-Federalist kev J says:

OCTOBER 25, 2014 AT 9:17 PM

I had been thinking: Te or Fe mixed with Si is abductive; Te mixed with Ni is deductive; Ti mixed with Ne is inductive; Se (aux or dominant) is inductive.

Doctors are generally NF (or Idealists as David Keirsey called them); they make diagnoses with abductive logic.

In other words, Guardians and Idealists use the most abductive logic of the 4 temperaments; NTJs are primarily deductive reasoners; Artisans (SPs) and NTPs are primarily inductive reasoners.

I believe i am STJ, but extraverted intuition comes out of the author of this post as much almost much as extraverted thinking does

Rachel Wood says:

NOVEMBER 19, 2014 AT 9:41 AM

This would generally make me a clear Ti user. Interesting article. :)

brendan says:

DECEMBER 14, 2014 AT 4:27 AM

I'm an INTJ and I nearly always use deductive logic. I think the way it works is that my Ni tells me how the world is supposed to work (the subjective part of it either distorts or rejects unwanted perceptions), and then my Te forces me to test the idea. That means the Ni provides the premise, and the Te tests it, hence deductive logic. I assume this would work with all J types. The subjective factor in the perception has some idea about how the world is supposed to work, and then the extroverted judging has to test it to make sure it works in the real world. In contrast, I would think P types accept all data from the external world as it is, and then they check to make sure that it makes sense with their introverted judging. I think this is part of the reason why functions must always come in introvert-extrovert pairs. You need your introvert functions in order to have a personality, otherwise you passively accept everything the external world gives you. You need your extroverted functions in order to function properly with the outside world, without them you'd be an infinitely closed-minded person.

It is true that Te focuses on the external world, but it does this by using the external world to supply premises. It will never never never step outside of these premises. I think limiting the inductive-deductive logic discussion only

to Te and Ti misses half the idea. Deductive and inductive logic also rely on acquiring information. Deductive logic only acquires data from a single source: the premise. Given the premise, the conclusion inescapably follows, as would be expected from an extroverted type. Inductive logic acquires data from everywhere, meaning extroverted sensing. Then the logical conclusion must be made subjectively, because the data presented does not provide any inherent rules about how to use logic. Deductive logic = subjective data + objective logic. Inductive logic = objective data + subjective logic.

admin says:

DECEMBER 14, 2014 AT 10:41 AM

Well tongue-in-cheek you could say that you are here using inductive logic to claim that you use deductive logic ;) But more seriously, your point is that you cannot reduce these species of logic to a Te/Ti preference and it already says so in the article. More than once.

Petter says:

JANUARY 31, 2015 AT 9:45 AM

Te = practical logic: efficiency, algorithms, drive, facts

Ti = abstract logic: system, regularity, right, rule
(i.e. logical relationships between objects)

“An algorithm may be viewed as controlled logical deduction”

“Ti: comparison, analysis, generalization, the systematization of any objective information, which is easily yielded for the formation into the generalized abstract theory: the thorough, concrete and detailed study of cause-effect connections, the construction of inductions.”

Conclusion: Te -> deduction, Ti -> induction

Petter says:

APRIL 7, 2015 AT 11:49 AM

Inducing: Ne

Theorizing: Ti

Deducing: Te

Predicting: Ni

Individualist13419 says:

MAY 23, 2015 AT 10:26 PM

Ti is deductive and Te is inductive as the article claims. Not the other way around, for sure. Probably explains why many TP types are drawn to subjects as math and physics where deduction is valued, whereas Te types seem more prone to like english, history, biology etc. where induction is valued.

In my experience TP types are often reluctant to analyse what we might call actual real life situations. All of them, it seems, would rather take into account a few, essential aspects of the situation (thus simplifying it) and analyse it from there. Essentially they are theorizing the situation so that they can analyse it.

Bobly says:

JULY 13, 2015 AT 3:17 AM

I see Ti resembling more a priori (prior to experience/theoretical) reasoning than deductive reasoning, while Te resembles more a posteriori reasoning (post-experience/empirical) than inductive reasoning. Although characteristics are common across the board.

I agree that deductive reasoning can be applied for both functions. Deductive reasoning can start with either theoretical statements (abstract generalizations) or facts (empirical observations), although both must take the form of propositions, or logical atoms. Inductive reasoning can likewise start with either kind of proposition.

I would object that scientific reasoning doesn't make use of inductive logic. I would argue that different steps in the scientific process make use of different kinds of inferences, and the method of one science isn't quite the same as any other science. The standards of physics aren't quite the standards of evolutionary biology.

admin says:

JULY 13, 2015 AT 3:43 AM

Good comment. I think it's good to say that Ti wants to subject the a posteriori to the a priori and Te wants to subject the a priori to the a posteriori.

As you also seem to say, though, this is basically what the article is saying, although in a slightly different manner. Certainly, the Kantian distinctions inform the assertions of the article, even if the article does not say so directly. It was written to refute a then-popular typologist who was in the habit of claiming that Te was "very deductive."

You are correct that science, in practice, makes use of both kinds of reasoning.

tobias087 says:

OCTOBER 1, 2015 AT 6:09 AM

Your article addresses some possible objections to point 1., that "All men are mortal," but it does not even begin to address possible issues with point 2, that "Obama is a man!"

How do we know that? Most obviously, he could be a woman ("did somebody go out into the park and lift up the dinosaurs' skirts?"). But he could also be neither man nor woman. And who even said he's human?! The only thing we know for sure is that he LOOKS like a man. And even then, most of us only know that he looks like a man while he's on TV. The plot thickens...

So, I think we can all safely conclude that he is NOT mortal. :P

hannah_s says:

OCTOBER 1, 2015 AT 9:03 AM

The reason I'm not convinced by the Te is inductive, Ti is inductive, idea is that in my opinion it's a big oversimplification of inductive reasoning and deductive reasoning.

The difference between them isn't that deduction is based on theory while

induction is based on facts (though in the real world it usually turns out that way). The difference is that deduction looks for conclusions which must be true if the premises are, while induction looks for conclusions that are more open and rely on probability.

Both can be based on facts or pure speculation. For example, with induction...

64% of people called John have green hair,
My friend is called John,
So he probably has green hair.

Induction itself has no more reliance on the facts than deduction does.

Looking at it from a “certainties” vs “probabilities” approach, I’d say FeTi and NeSi types are more inductive/unsure (ENTP’s perhaps most of all), while TeFi and SeNi types are more deductive/certain (ENTJs perhaps most of all).

But again, that’s such a big oversimplification that it’s meaningless. :D

hannah_s says:

OCTOBER 1, 2015 AT 9:20 AM

To kind of summarise my point...

Deductive logic seeks to find the one correct answer at the expense of subtlety. It’s quite black and white, and actually much more efficient than induction – it gives you an answer you can use.

This seems more like TeFi/SeNi to me.

Inductive logic looks for what is most likely, given the current understanding. It’s much more subtle, and gives you in the end an “an area of possibility” and a bunch of other questions (How can we narrow this down further? etc) rather than a decisive answer we can use. It’s very much about shades of grey rather than black and white.

This seems more FeTi/NeSi to me.

tobias087 says:

OCTOBER 2, 2015 AT 1:04 AM

I see generally what you're saying, although I thought the article addressed that. Or I least I was satisfied that they had taken that into account. But I do have a few things to say in response.

In your green hair example, that is a deduction you are making. Rephrased: If A then B, A, Therefore B: If a person is named John then there is a 64% chance he has green hair. My friend is named John. Therefore there is a 64% chance he has green hair. (assuming that's what you meant by "probably.") If the first two parts are true, the 3 part MUST be true.

Induction on the other hand is used (for lack of a better word) to *jump* to conclusions that aren't necessarily true, but are probably true: Every John I've ever seen has green hair. My friend is named John, so he will probably have green hair. Here, even if the first two parts were true, that does not mean the third part must be true.

And so, I think some of the stuff you wrote in your second post isn't always the case. Actually, a lot of the time deduction winds up being basically useless, while induction is far more efficient. That's because deduction isn't comfortable making a statement until it's definitely, without any possible doubt, true, but induction is.

As the classic example, if all the swans I've ever seen are white, and you ask induction what color the next one will be, it says "well, duh, all the rest of them are white, so, probably white!"

But deduction says "I don't know. All the previous swans have no influence on what color the next one will be. It is impossible to predict. It could well be the case that the next one and all future ones will be green. I have no way of knowing."

Deduction gets hung up on theoretical imperfections. Induction hops right over those to the usable answer, and is therefore more efficient.

hannah_s says:

OCTOBER 2, 2015 AT 2:04 AM

Tobias,

Perhaps you're right. :) I know very little about philosophy, and I've never been very good with logic.

tobias087 says:

OCTOBER 3, 2015 AT 3:52 AM

I'm no expert on philosophy myself, but there's nobody who can't learn about it! If it's something you're interested in :)

<https://www.youtube.com/watch?v=iRcNQkWNWNk>

I think the last bit of the video speaks exactly to your point about correctness vs. subtlety: as you say, deduction is more exactly correct, but induction is more nuanced and intricate.

(Besides the Philosophy Tube channel, another great Youtube channel for philosophy and other big life-topics in general is the School Of Life. I suspect you'd like that one a lot :) <https://www.youtube.com/user/schooloflifechannel>

hannah_s says:

OCTOBER 3, 2015 AT 2:14 PM

Thanks, I'll check those out when I can find the time :)

anonymous says:

SEPTEMBER 26, 2016 AT 1:11 PM

No offense, but does anybody else think that the examples here of Ti are extremely obvious?

As in, you see it and you think "Duh"?

Micah D says:

SEPTEMBER 30, 2016 AT 11:50 AM

It is difficult to couch functions specifically in terms of induction or deduction. In the first place, if we take Ti to be deductive, we must remember that deduction involves a cancelling out, i.e. a process of elimination, in regards to non-potential facts. However, since every fact cannot be considered

individually in order to be eliminated by the Ti in a process of deduction, the Ti will frequently use what's been true in the past (i.e. he will use induction) to condition his selection of the facts to deduce. Therefore can Ti really be considered primarily deductive or only conditionally deductive?

From the Te angle, we might consider the objective truth of an object of reason's occurrence to increase in proportion to the amount of times it occurs, yet, in order to do this, first Te must deduce which objective phenomena are worthy of paying attention to, and which aren't, which involves a process of elimination.

So it can be shown that both Te and Ti rely alternately on consequent and subsequent forms of induction and deduction. What is needed to answer this question then, it seems to me, is a unifying principle for both, which is abduction – the inference to the best explanation, mentioned briefly by Aristotle, but only seriously expounded upon by C.S. Peirce.

Petter says:

MARCH 19, 2017 AT 10:28 AM

I finally got it right :-)

Te is about both deductive and inductive reasoning. Ti, Ne and Ni are irrelevant.

Jung was wrong about objective “extroverted” functions and subjective “introverted” functions. Hence, we must define Te and Ti differently. I have explained this on Personality Cafe and the16types forums. (aka Tellus)

Mr T says:

SEPTEMBER 20, 2017 AT 7:50 PM

Inductive reasoning creates hypothesis, deductive creates theories. You don't get theories from facts, those words are synonymous.

Do more research on how theories are created.

Mr T says:

SEPTEMBER 20, 2017 AT 8:08 PM

Looking at the link you pasted, I'm worried you're spreading false information. I don't know much about this "Te and Ti" I'm more interested in the reasoning part. However, google tells me that Te deals with organising and understanding the external world; wanting everything to make logical sense and has little patience for unproductive activities. The link you provided talks about how deductive reasoning is concerned with confirming hypothesis while inductive tries to create ideas and hypothesis. It seems you have this all backwards.

Mr T says:

SEPTEMBER 20, 2017 AT 8:38 PM

Doing further reading on "te and Ti", Tesla and Einstein are listed as having dominant te and ti respectively. Einstein thought of ideas and possibilities, linked them together and created various hypothesis, Tesla utilised various hypothesis to create multiple inventions.

Einstein utilised inductive reasoning more by any definition of induction(google dark energy) while Tesla utilised Deduction more.

You have the two backwards.

Mr T says:

SEPTEMBER 20, 2017 AT 9:45 PM

(Sorry I'm bored)

Looking at your example of Inductive reasoning and your definition of Ti, you seem to be missing the obvious.

In the example, the first three facts are used to support an idea in the absence of certainty, matching your description of inductive reasoning.

Also, both inductive and deductive reasoning are efficient, just in different ways. Deductive reasoning is better in mathematical fields where you need absolute certainty while inductive is better in scientific and philosophical fields that deal more probabilities.

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