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**"Transmitting Understanding and Know-How"**

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 Among contemporary epistemologists and scholars of ancient philosophy, one often hears claims along the following lines:

--Transmitting propositional knowledge by testimony is easy.[[1]](#footnote-1) It usually occurs without much effort, and comes off without a hitch. I can tell you various things that I know--that it is raining outside, or that I live in New York, or that my middle name is “Robert”--and in a typical case my testimony will allow you to know these things too. Testimony is thus an effective means of transmitting knowledge from one person to another.

--Transmitting know-how by testimony is typically hard, and perhaps impossible.[[2]](#footnote-2) Suppose I know how to ride a bike, or how to juggle four balls at one time, and that I try to pass this know-how on to you. Merely telling you how I am able to do these things does not seem like enough to guarantee uptake on your part. Indeed, attempts to pass along know-how regularly fail. Testimony is therefore a poor tool for transmitting know-how from one person to another.

--Transmitting understanding by testimony is typically hard, and perhaps impossible.[[3]](#footnote-3) Suppose I understand quantum mechanics, or the ins and outs of the relationship between free will and determinism. Attempting to communicate my understanding to you via testimony is usually not enough for you to take on my understanding. Indeed, attempts to communicate understanding regularly fail. Testimony is therefore a poor tool for transmitting understanding from one person to another.

Further provocative conclusions are then sometimes drawn from these claims. For instance, it is said that because it is easy to transmit propositional knowledge, but hard or impossible to transmit states such as know-how and understanding, we should conclude that know-how and understanding are not types of propositional knowledge. Or again, some have concluded that states such as understanding are particularly valuable or prized because they are essentially “first-hand"--while goods such as propositional knowledge can be passed on from one person to another, understanding requires a special act of insight or discovery that enhances its status.

 In this chapter I will contest this suite of claims: both concerning the relative difficulty of transmitting knowledge and understanding, as well as the conclusions that are sometimes drawn from these claims. I will argue that transmitting propositional knowledge is sometimes easy and sometimes hard, just as transmitting know how and understanding is sometimes easy and sometimes hard.[[4]](#footnote-4) No general lessons can be drawn about the relationships among propositional knowledge, know how, and understanding by considering the case of testimony alone.

 Exploring what it takes for epistemic states to be successfully transmitted nonetheless helps to shed light on the epistemology of teaching and learning. This was a topic of great importance to ancient philosophers, and it has recently received greater attention from contemporary epistemologists. This is one among many areas where contemporary epistemologists can profit from engaging with ancient debates.

**I. Transmission**

 Since several of the issues to follow turn on the nature of transmission--what it might mean to transmit something easily, or with difficulty, or at all--let us first say a little more about what transmission amounts to.

 Suppose I have a device that comes in several different parts--say, an old-fashioned corkscrew with two levers on the side that look like arms, a spiraling screw for piercing the cork, and so on. Imagine that in Case #1 I simply hand over my corkscrew to you, and you accept it. This seems like about as clear of an instance of transmission as you can get.[[5]](#footnote-5)  I have something, I hand it over to you, and now you have it. In Case #2, I first dissemble my corkscrew into its component elements, and then I hand these elements over to you as a fistful of parts. Or perhaps I decompose the corkscrew into its various parts, place the parts in a small box, and hand the box over to you.

 Have I then transmitted my corkscrew to you? Although there might be some temptation to think that I have given you my corkscrew when I’ve given you all its parts, on balance this looks like a failed case of transmission. E.g., if I asked you for a corkscrew at a dinner party and you gave me a handful of parts, I would assume you were joking. The more that something along the lines of "assembly" is needed--in other words, the more work the recipient needs to do to bring the thing together--the less it seems like you’ve given me the thing or transmitted it me.

 (Suppose for comparison you claim to have "transmitted” your IPhone to me as a box full of hundreds of parts. You would have given me the ingredients necessary to put the phone together, but you wouldn’t have given or transmitted your phone to me, it seems.)

 Let us therefore call a case of *pure transmission* one in which A passes some item on to B--a corkscrew, perhaps, or an IPhone--and little if any work is required on B's part to take up or properly possess that item. To adapt a nice image of Adam Green, it is as if I had a chunk of marble and I sent that chunk down a chute to you, so that it landed in your wheelbarrow (Green 2019: 46). So put, transmission would count as a largely, if not entirely, passive exchange.[[6]](#footnote-6)

 By contrast, let us call a case of *some-work-required transmission* one in which A passes some item or items on to B, and B needs to do some work to properly "take up" or possess the item. In cases like this, there is a real risk of failure of transmission, because B might simply be incapable of doing the work needed to reconstruct the item. What's more, so much work might need to be performed by the recipient that it is not obvious that *some-work-required transmission* should be considered transmission at all, any more than handing your IPhone to me as a box of parts counts as an act of transmission.

 And now we can say this: according to some contemporary epistemologists and scholars of ancient philosophy, propositional knowledge transmission is an instance of *pure transmission*. It involves me "handing over" an item to you, where you do little or any work to take it up, and where the success of the handing over is more or less guaranteed.

 Understanding or know-how transmission, by contrast, is an instance of *some-work-required transmission*. And since *some-work-required-transmission* is arguably not a case of transmission at all, it is not clear that it is possible to transmit understanding or know-how via testimony. I could try to convey my understanding or know how to you, but I might well fail. It is, as Emma Gordon has put it, an "open question" with respect to whether you will take up my understanding or know how in the right way (Gordon 2017: 298). And where there are substantial risks of failure in passing on A to B, or when there is more to be done than simply handing over A to B, then it is not obvious we have transmission at all.

**II. Understanding: "Seeing" and Abilities**

 In this section I will consider in more detail why philosophers have thought that transmitting understanding in particular is hard, if not impossible. In the following section I will then turn to consider the case of know-how in more detail.

 In the contemporary literature, the claim that understanding is hard or impossible to transmit first seemed to take hold among scholars of ancient philosophers, especially figures such as Myles Burnyeat, Alexander Nehemas, and Julius Moravcsik.[[7]](#footnote-7) They took this thesis to be present in Plato and the Platonic tradition following him,[[8]](#footnote-8) but they also seemed to view the claim as defensible in its own right. In other words, they thought that Platonic views about the limits of what could be transmitted via testimony bore important lessons for contemporary epistemology.

 A common thread running through these claims is that the state of understanding involves an element of piecing together or seeing connections that I cannot simply "take over" from you, in the way that I might take over your propositional knowledge via testimony. Rather, this element of piecing together or seeing is something the recipient needs to do first hand. Here is Burnyeat:

Understanding is not transmissible in the same sense as knowledge is. It is not the case that in normal contexts of communication the expression of understanding imparts understanding to one's hearer as the expression of knowledge can and often does impart knowledge... having [a truth] explained to me will not in the same way produce understanding. (Burnyeat 1980: 186-87)

And again:

[T]he important point for our purposes is that the emphasis on connecting one item with another is enough by itself to yield the conclusion that knowledge, in the sense of understanding, cannot be taught or conveyed by words from one person to another. Knowledge must be first-hand if it is essentially of connections.

I can of course be given the information that p is connected with q, r, etc., just as I can be given the information that p is true because q is true. What is more, I can accept that this is so with adequate justification and thereby, in the ordinary sense, know it. But every schoolboy is familiar with the fact that it is one thing to know in that external way that the connection holds (e.g. that these propositions constitute a proof of that theorem), and quite another to understand the connection, to see how the elements hang together. That is something one can only do for oneself. And we still describe the moment when this is achieved as a moment of illumination. (Burnyeat 1987: 21)[[9]](#footnote-9)

A crucial and plausible idea here is that no one can see a connection for you. Someone can tell you that a connection exists, but this is not yet to grasp—for yourself—that it exists. It would be as if someone were to tell you that, “Necessarily, 7+5=12.” You could believe this proposition perfectly well on the say-so of others, but you could not see or grasp the necessity on the say-so of others. You can only see or grasp this necessity for yourself. No amount of coaxing on your end can ensure that you have passed your “seeing” on to another person.[[10]](#footnote-10)

 This is one of the main reasons why Burnyeat and other scholars of ancient philosophy favor “understanding” rather than “knowledge” as a translation of *episteme*.[[11]](#footnote-11) On their view, *episteme* is the sort of thing that the ancients felt was not easily transmissible by testimony, or perhaps not transmissible at all. But, it seems, virtually all contemporary philosophers think that knowledge can be easily transmitted by testimony—hence knowledge is not a good match for what Plato, Aristotle, and others had in mind by *episteme*. Our notion of understanding, however, with its essential appeal to grasping or seeing connections, has more of a resonance with this ancient ideal, and hence better captures the sort of good they were trying to describe.[[12]](#footnote-12)

 Several contemporary epistemologists have found these arguments by Burnyeat, Moravscik, and others convincing,[[13]](#footnote-13) and they have added additional reasons for thinking that understanding cannot be transmitted via testimony. The basic idea here is that understanding is an *ability*, and it is plausible to think that abilities cannot be transmitted by testimony alone.

 Why think that understanding is an ability? As elaborated by Alison Hills, the idea is essentially that understanding requires “the ability to draw conclusions... in a new case” (Hills 2016: 671). If you understand that the window shattered because it was hit by a heavy brick, you will be able to infer that it would fail to shatter if it were struck by something lighter, a drop of rain, say. Or again, if you understand why eating meat is wrong, then you should be able to draw conclusions about similar cases--for example, with respect to whether eating fish is morally wrong, or whether eating meat would still be morally wrong if factory farming were not involved.

 According to Hills, however, abilities in general are either difficult or impossible to transmit by testimony alone. She writes:

Hardly anyone learns how to swim or ride a bike by reading a textbook or listening to an explanation of how to do so. Guidance from an expert can certainly help, but that help does not necessarily take the form of assertions passing on standard propositional knowledge; or, even if it does, that only works if it is combined with practice. Testimony alone is not normally enough. (Hills 2016: 670) (Cf. Hills 2013)

In its essential appeal to abilities, understanding is therefore unlike “standard propositional knowledge,” which can be handed on from one person to another quite easily and perhaps almost passively.[[14]](#footnote-14) Considering the case of testimony therefore allows us to see the different epistemic or cognitive profiles of understanding and propositional knowledge, and thus allows us to appreciate the various ways in which they can come apart.

**III. Know How**

 Turning now from discussions of understanding to discussions know-how, we again see deep reservations about its connection to testimony. For instance, Adam Carter and Ted Poston have recently argued against the thesis that know-how can be reduced to know-that on the grounds that know-how cannot easily be transmitted by testimony, while know-that (or propositional knowledge) can be easily transmitted.

 Unlike Burnyeat, Hills, and others, they do not argue for this claim by citing something epistemically distinctive about know-how that cannot be transmitted via testimony: that it involves a piecing together, for example, that I cannot simply hand over to you. Rather, they make their case on the basis of examples that they take to support the broader claim.

 Consider first a pair of examples modeled on ones from Poston (2016) and Carter and Poston (2018), and which are supposed to bring out the differences between transmitting propositional knowledge and transmitting know how. Like Carter and Poston, I label the cases “Good” and “Bad”:

**GOOD**

1. Xingming knows that Fordham is located in the Bronx.

2. Xingming tells Raphael that Fordham is located in the Bronx.

3. So, Raphael knows that Fordham is located in the Bronx.

**BAD**

1. Xingming knows how to ride a bike.

2. Xingming tells Raphael how to ride a bike.

3. So, Raphael knows how to ride a bike.

The cases are labeled “Good” and “Bad,” clearly enough, because the first looks like a good inference, and the second looks like a bad inference. Just by telling someone a bit of information--such as that Fordham is located in the Bronx, or that Lincoln was the 16th President, or that the car keys are on the kitchen counter--it seems like propositional knowledge can be passed along easily. But the same cannot be said, it seems, when it comes to passing along know-how. I might know how to ride a bike, or play the flute, or land a triple sowcow, but simply telling you how to do this will not guarantee that you will know how to do this.

 From cases such as these, moreover, Carter and Poston draw the following conclusions. First, that, “Both knowledge-that and knowledge-wh are easily transferred by testimony but practical knowledge is not easily transferred by testimony” (Carter and Poston 2018: 117). And second, that this provides good evidence that knowledge how is not a species of propositional knowledge—or, put another way know how cannot be reduced to know that.

 In a different article, Carter and Pritchard (2015) offer another example of a bad inference that is supposed to demonstrate the same point.

 **BAD**

 1. David knows to play a difficult and nuanced guitar riff.

 2. David tells Roger how to play the riff.

 3. So, Roger now knows how to play the riff.

The inference is a bad one, Carter and Pritchard submit, because “it is hardly the case that, in virtue of trusting David’s testimony, Roger thereby has the tricky riff down cold. It’s thus counterintuitive to say that what Roger has acquired, by manifesting the little cognitive ability he did in trusting David, was knowledge-how to play the tricky riff” (Carter and Pritchard 2015: 810).

 Note the contrast drawn between transmitting know-how and transmitting propositional knowledge. For propositional knowledge—know that—the claim is that “little” ability is needed by the recipient. The recipient can more or less just passively accept the testimony offered to him or her, as I might passively accept a corkscrew handed to me, or a chunk of marble passed down a chute. With know-how, however, the case is said to be markedly different. Many or most of your attempts to pass your know-how on to me will be unsuccessful. It is just not the kind of thing that can be easily handed over to another person.

**IV. A Change of Diet**

 A significant problem with the literature so far is that it has suffered from a one-sided diet of examples. With respect to know-how, the discussion has focused on (for instance) attempts to transmit one’s ability to swim, or to play a tricky guitar riff. With respect to understanding, the focus has been on conveying one's understanding of difficult topics such as the workings of internal combustion engines, or quantum mechanics—in other words, topics ranging from the very complex to the *extremely* complex. What these examples obscure is both how easy it can be to transmit understanding and know-how, and how difficult it can be to transmit propositional knowledge.

 To start with an easy case of understanding and know-how transmission, consider the following announcement I heard not long ago on the platform of Paddington Station in London, while waiting for an Underground train to take me to King’s Cross. As a growing crowd of people waited on the platform, wondering when the train would arrive, a voice over the intercom said:

“The train to King’s Cross has been delayed due to a passenger illness. In order to reach King’s Cross, please take the stairs up one flight and exit to the left, where a waiting 205 bus will take ticketed passengers to the station.”

Via these two sentences, I submit, both understanding and know how were transmitted to me. I now understood both why the train was delayed, and how to get to King’s Cross in these circumstances. So too, I submit, did everyone else on the platform, because we all dutifully trooped up the stairs and exited to the left, to find the bus to King’s Cross waiting. It was the sort of routine transmission of understanding and know-how that happens regularly throughout the day, without fanfare or celebration.

 Here are some other examples. I’ll label the ones that involve transmission of understanding “U” and label those that involve the transmission of know-how “KH.”

U: “Why are you late?” “Traffic.”

U: “Why is she so happy?” “She got the job!”

U: “Why does he look upset?” “Someone just insulted him.”

U: “Why is this dish so spicy?” “He put jalapeños in the pot.”

KH: “How do you turn on the shower?” “You pull up on the nob and turn the

 handle to the right.”

KH: “How do you dial England from the U.S.?” “First dial 011, then 44, then the number.”

KH: “How can I open this pickle jar? The lid is stuck.” “First run the lid under hot

water so it expands, then twist it.”

Cases of this sort, again, are commonplace.[[15]](#footnote-15) They occur regularly in the course of the day, and they tell against the claim that transmitting understanding or know how is normally very difficult, and perhaps impossible. They should, in fact, make us wonder why claims to that effect seemed plausible in the first place.

 Now, one might object, with respect to the examples related to understanding, that the degree of understanding transmitted in these cases is either negligible or somehow uninteresting or unimportant. In the King’s Cross case, I understand that a passenger illness was behind the delay, but I do not, it seems, understand much else. In the case of the spicy dish, you now know jalapeños had a role to play, but you might not know anything about how jalapeños might lead to spiciness--i.e., anything about the biochemical mechanisms connecting jalapeños to spiciness.

 Yet even if we grant that these are cases of negligible understanding transfers, they are still cases of understanding transfers.[[16]](#footnote-16) If I transmit a mild case of the flu to you I have still transmitted the flu to you, even though someone else might have transmitted a more robust case. With respect to King’s Cross, for instance, I now know that the train was not delayed because of a terrorist incident, or because of faulty equipment, or because of an ongoing strike. I know it was because of a passenger illness. This is an important foothold of understanding, and I can then acquire further information that will increase my appreciation of what happened--about the sort of illness that was responsible for the delay, how exactly the illness led to the delay, and so on.[[17]](#footnote-17)

 The information that you transmit to me will therefore often slot into a rich network of understanding that I already possess.[[18]](#footnote-18) Thus when I ask why you were late, and you say “Traffic,” this bit of information naturally slots into my already-possessed understanding of road conditions, cars, how traffic leads to delays, and so on. What was transmitted via testimony in this case was not the whole rich network. Rather, it is more plausible to think that much of this rich network was presupposed. It was then added to by the new information that you relayed to me.

 A different sort of objection, with respect to the examples above concerning know-how (such as how to dial England from the U.S.), is that they do not qualify as transmissions of *new* know-how. Rather, they are cases in which the know-how was in a sense already present, and the information transmitted via testimony simply allowed the recipient to apply this established know-how in new directions or in new ways.

 This is in fact how Carter and Poston responds to cases along the lines just mentioned. They offer the example of an expert fisherman who knows how to tie many different knots. A friend then tells him how to tie a new knot, the Bimini Twist. Although this may look like a case in which know-how is directly transferred via testimony, Carter and Poston argue that this description is misleading: what we have here is information that allows one to *apply* know how that was already present. Put another way, the information allows the hearer to refine or further specify the know-how that was already present.[[19]](#footnote-19)

 I do not find this reply persuasive, however, because there seem to be many cases of easy know-how transmission that do not simply refine already existing bits of know-how. Instead, they seem to bring us something new. To illustrate, suppose I am a relative novice in the kitchen, and you are trying to teach me how to make chicken tikka masala. You talk through the various steps with me, and write them down for good measure: “First you do this…. Then this…. Then that….” I follow your instructions, and produce a passable version of the dish. Did I know how to make chicken tikka masala before you walked me through the steps? It doesn’t seem like it. Or again, suppose I have never made a cocktail before, and you are trying to teach me how to make a Tom Collins. “First you add this…. Then that…. Then stir….” I follow your instructions, and produce a not-too-shabby token of the drink. Did I know how to make a Tom Collins before you walked me through the steps? Again, it seems like the answer is No.

 Carter and Poston’s account seems to deny this, however, instead claiming that the know-how was there all along, and just needed to be refined. But what would be a good candidate for that existing know-how—the thing that needed to be refined? Was it cooking know-how, or cocktail-making know how? But it was part of the examples that I barely knew how to cook, and that I’d never made a cocktail before. Perhaps it was something much more general, along the lines of: I knew how to follow directions. That much seems true—I did know how to follow directions prior to being told the steps for making this dish and this cocktail—but then Carter and Poston’s account of the metaphysics of abilities, especially how various abilities should be individuated, seems implausible. Intuitively, knowing how to make chicken tikka masala and knowing how to make a Tom Collins are distinct abilities or bits of know-how, and not precisifications of one monster bit of know-how, such as “knowing how to follow directions.”[[20]](#footnote-20)

 Note the similar style of reply to both of the objections considered in this section. With respect to the transmission of understanding, I claimed that genuine, novel instances of understanding were transmitted from speaker to hearer in the examples above: the hearer now understands, for the first time, why the train was delayed (passenger illness), for instance, or why you were late (traffic). This successful transmission nonetheless seemed to presuppose and build upon an already existing tapestry of understanding, concerning things like how illness or traffic might lead to these results. With respect to the transmission of know-how, I likewise claimed that genuine, novel instances of know-how were transmitted from speaker to hearer in the examples above: the hearer now knows, for the first time, how to get from Paddington to King's Cross in these circumstances, or how to make chicken tikka masala. Nonetheless, this transmission would plausibly not have been successful unless other bits of know-how were already in place.

**V. Abilities and Propositional Knowledge**

 One crucial upshot of the preceding discussion is that in order for understanding or know-how to transmit successfully, the recipient needs to be appropriately *primed* or receptive. So, the important take away is not that transmission of these things is usually easy or usually hard *simpliciter*. Rather, it is usually easy when the recipient has been appropriately primed, and usually difficult (if not impossible) when the recipient has not been appropriately primed.

 In this section I will argue that the very same dynamic holds for the transmission of propositional knowledge by testimony. Sometimes it is easy, and sometimes it is difficult (if not impossible), depending on whether the recipient has been primed in the right way. That this fact has not been appreciated so far, and that the literature has largely proceeded on the assumption that the transmission of propositional knowledge is straightforward and almost passive, is again plausibly due to the one-sided diet of examples.[[21]](#footnote-21)

Recall again our version of the inference found in Carter and Poston:

1. Xingming knows that Fordham is located in the Bronx.

2. Xingming tells Raphael that Fordham is located in the Bronx.

3. So, Raphael knows that Fordham is located in the Bronx.

Carter and Poston classify this sort of inference as “Good,” reflecting our common sense belief that propositional knowledge is often, and easily, transmitted in this way. But, clearly enough, a transmission of this sort will only work if certain abilities are in place. If Xingming is speaking in Chinese and Raphael can only understand German, then this transmission will not work. More generally, if you try to transmit any of your propositional knowledge to others who do not understand your language, the transmission will not work.

 It might be said that “normally” this sort of transmission *will* go through because normally one doesn’t try to pass along information in a language one knows the recipient of the information will not understand. But, for one thing, this is not always the case. When travelling in a foreign country, natives will often keep trying to communicate to foreigners in the native tongue (in cabs, restaurants, etc.), even after it is clear that the foreigner fails to understand. For another, to the extent that it is true that one doesn’t normally try to transmit propositional knowledge to someone when one believes that the person cannot understand the language, the same can be said of attempts to pass along understanding and know-how. Experts in quantum mechanics do not normally try to transmit their understanding of the subject to nine-year-olds. Experts in martial arts do not normally try to transmit their knowledge of how to perform the most elaborate kicks to those who are just starting off. And so on. Usually speakers have a sense of the capacities of their audience, and adjust their approach accordingly. Gross failures of propositional knowledge transfer do not usually occur because we usually do not try to communicate with audiences who are not primed in the right way. But the same holds for attempts to transmit understanding and know-how.

 Communication attempts between speakers of different languages are not the only ones that can go astray. Often enough, this can happen within one’s own language. Consider the following:

 1. Carlo knows that phonemes can take variant allophones.[[22]](#footnote-22)

 2. Carlo tells Robin that phonemes can take variant allophones.

 3. So, Robin now knows that phonemes can take variant allophones.

Does this inference deserve to be labeled “Good” or “Bad”? Plainly enough, the answer is “it depends.” It depends on whether Robin has the conceptual wherewithal to appreciate what Carlo is trying to say, and especially what properties concepts like *phoneme* and *allophone* are supposed to pick out. And so on for any attempt to communicate using a specialized vocabulary.

 Finally, it is important to see that it is not just conceptual fluency that needs to be presupposed for transmission to occur. As Andrew Peet (forthcoming) notes, even when fluency is in place there can be problems of successful interpretation. To take Peet’s example: Suppose Matt and Sally are at Matt’s house, and Sally says "I'm hungry, is there any food?" Matt replies, "Sorry, there isn’t any food, let’s order a pizza." As Peet points out, clearly Matt is not saying that there isn’t any food anywhere. He is saying that there is no food in some restricted domain. However, there are many ways the domain could be restricted:

1. There isn’t any food *belonging to Matt.*

2. There isn’t any food *belonging to Matt or Tom (Matt’s house mate).*

3. There isn’t any food *that Matt is willing to share.*

4. There isn’t any food *which Sally likes and which meets the above criteria.*

*etc.* (Peet: forthcoming)

In order to recover propositional contents in cases like this—and hence for propositional knowledge to be transmitted successfully—considerable interpretive abilities are required. Such cases are also hardly rare or weird. Much of our conversation is carried on via speech fragments, implicature, and so on--cases where the full propositional content needs to be decoded or filled in. Sometimes this is easy, but sometimes not.[[23]](#footnote-23)

 In essence, what seems to be happening in the Poston, Carter, and Pritchard cases is that the “uptake” conditions for propositional knowledge are taken for granted—i.e., it is taken for granted that suitable priming is in place, and that the hearer has the ability to take up the testimony in the right way. When cases of know-how transmission are considered, however, the priming conditions are usually obliterated, and then it is observed how different the transmission of propositional knowledge is from the transmission of know-how. If we hold the priming or receptivity conditions constant, then apparent differences between the cases seem to disappear.

 Finally, and turning again to the context of the ancient debates, I believe all of this indicates that we need to heed Aristotle's insight at the very outset of the *Posterior Analytics*, where he notes that:

"All communications of knowledge from teacher to pupil by way of reasoning presuppose some pre-existing knowledge." (*Posterior Analytics* I.1)

One way to gloss this passage is as follows: epistemic goods such as knowledge, understanding, and know-how cannot be transmitted whole-cloth via testimony from speaker to recipient. Rather, the recipient *already* needs to know certain things in order for testimony or learning to be effective--perhaps things acquired via first-person experience or acquaintance, or perhaps things that come hard-wired.

 This is a plausible claim about learning in general, and it seems especially to hold for the special case of testimony in particular. Without proper priming, epistemic goods cannot flow from one person to another via testimony. *With* proper priming, they seem to flow quite easily.[[24]](#footnote-24) This Aristotelian insight is something contemporary epistemologists would do well to take seriously.[[25]](#footnote-25)

**VI. Conclusion**

 Turning to conclude, I have tried to show that no blanket statements can be made about the easiness or difficulty of transmitting propositional knowledge, or understanding, or know-how. When the recipient is appropriately primed, the work of transmission is often easy. When the recipient is not appropriately primed, the work is very difficult, and perhaps impossible.

 True, the *kind* of work done by the recipient plausibly varies when it comes to propositional knowledge vs. understanding vs. know-how. With propositional knowledge, it is something like the ability to retrieve the speaker's contents (or maybe to acquire the same fluency with concept that the speaker possesses). With understanding, it is plausibly the ability to piece together or grasp connections. With know-how, arguably the ability to follow steps. But that there is work to be done by the recipient in all these cases seems clear enough.

 This in turn suggests that *pure transmission* is a myth when it comes to attempts to convey epistemic goods via testimony. It does not exist when it comes to conveying propositional knowledge, and it does not exist when it comes to conveying understanding or know-how. All cases of successfully transmitting epistemic goods therefore seem to be cases of *some-work-required transmission*.

 In answer to the question--"Can understanding and know-how be transmitted by testimony?"--the appropriate answer is therefore: It depends. In particular, it depends on whether the right abilities and uptake conditions are already in place, so that new abilities and insights can be appropriately stacked upon the old. But the same sort of uptake conditions also need to be in place for the successful transmission of propositional knowledge, I have argued.

 There are, finally, some further ways that this approach might be fruitfully extended. For example, rather than gravitate towards a simple Yes or No response to perennial questions such as "Can virtue be taught?" or "Can moral understanding be transmitted?" the appropriate response here too might be: it depends.[[26]](#footnote-26) In particular, transmission here might depend on whether the recipient of the testimony is able to take it up in the right way, where "the right way" in cases like this might involve having volitional and affective responses of a certain sort. Here too, I believe, engaging with ancient debates about the epistemology of teaching and learning should prove profitable.[[27]](#footnote-27)

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1. See, for example, Hills (2009; 2016), Lynch (2014; 2016: ch. 8), Nawar (2017), Gordon (2017), and Pritchard (2018). [↑](#footnote-ref-1)
2. See, for example, Hills (2013), Poston (2016), Lynch (2016: ch. 8), Nawar (2017), Carter and Poston (2018: ch. 5), Carter and Pritchard (2015). [↑](#footnote-ref-2)
3. For the hard end of the spectrum, see (Hills 2016: 19-20). For the impossible end, see Linda Zagzebski: “Knowledge can be acquired by testimony, whereas understanding cannot be. A conscientious believer can obtain a true belief on the testimony of another, and given the right conditions, can thereby acquire knowledge. . . Understanding cannot be transmitted in that way” (Zagzebski 2008: 145-46; cf. Zagzebski 2012: 176). Scholars of ancient philosophy endorsing this claim are discussed in Section 2, below. [↑](#footnote-ref-3)
4. With respect to understanding, claims along these lines have also been insightfully defended by Boyd (2017) and Green (2019). [↑](#footnote-ref-4)
5. See Tucker (2010a, 2010b) for finer distinctions between the notions of transmission and transference. For our purposes here, the differences between the notions will not be crucial. [↑](#footnote-ref-5)
6. For the claim that the recipient of propositional knowledge transmission is typically passive, see Lynch (2014; 2016: ch. 8) and Pritchard (2016). [↑](#footnote-ref-6)
7. See especially Burnyeat (1980; 1987), Nehemas (1985), and Moravcsik (1979a; 1979b). Barnes (1980) dissents from this trend among ancient philosophers, arguing that understanding can be transmitted by testimony. [↑](#footnote-ref-7)
8. E.g., as Burnyeat (1987) notes, in the writings of Augustine. [↑](#footnote-ref-8)
9. Here is Nehemas: "it is precisely the mastering of these connections and relations that cannot be transmitted (cf. Rep. 518b6-7) because these connections are methods and rules for proceeding in a properly justified manner, from one item of knowledge to another. And even if such rules and methods can be formulated, and in that sense, transmitted, what cannot be transmitted is the ability to follow the methods and to apply the rules" (Nehemas 1985: 313). See also Tamar Nawar: "Burnyeat himself often makes incidental remarks upon the point that I here make central: that, for Plato (or for that matter, other Platonists, like Augustine), **ἐ**πιστήμη/understanding is something we must achieve for ourselves" (Nawar 2013: 15). [↑](#footnote-ref-9)
10. I also endorse this claim in Grimm (2011; 2014). It still believe it that no amount of coaxing can "ensure" that the seeing is passed on, but this is compatible with the thought in this paper that when the recipient is properly primed the uptake can occur quite easily. [↑](#footnote-ref-10)
11. For more in favor of reading *episteme* as understanding, see Schwab (2015; this volume). [↑](#footnote-ref-11)
12. As Moravcsik puts the idea, "Understanding will not be a matter of merely having lots of information about a subject; rather, it consists in seeing larger complexes, with their ingredients interrelated in the proper way. If we want to test, or improve, understanding, we have to get at the agent's ability to interrelate material, and to see larger connections between parts of the information supplied" (Moravcsik 1979b: 210). [↑](#footnote-ref-12)
13. See Zagzebski (1996: 46-47) for the influence of Moravscik on her views , and Grimm (2012) for the influence of Burnyeat and others. [↑](#footnote-ref-13)
14. In this Malfatti (forthcoming) seems to concur: "Abilities and know-how are not something one can pass on to another in the same way as she would pass on isolated pieces of information or items of knowledge." [↑](#footnote-ref-14)
15. For another case of know-how transmission along these lines, see Cath (2017: 265). For another case of understanding transmission, see Hu (2018). [↑](#footnote-ref-15)
16. In this I am now inclined to agree with Sliwa (2015) and Hazlett (forthcoming). [↑](#footnote-ref-16)
17. For a larger defense of this approach to understanding, see Grimm (2001; 2017; 2019). [↑](#footnote-ref-17)
18. The helpful "slot into" language is from Boyd (2017: 218). [↑](#footnote-ref-18)
19. More fully, Carter and Poston claim: "This is not an objection to [my thesis] because it is a case of a general skill being applied to a specific novel case. On my view what happens is this. John [the expert fisherman] knows how to tie knots. He learns from Sam how one ought to tie the Bimini Twist, and given his general knot tying practical knowledge, he can successfully implement his new propositional knowledge of how one ought to tie the Bimini Twist…. The explanation of the knot tying example extends to these cases: a general skill is present that, given some new propositional knowledge, is applied to a new instance of the general skill" (Carter and Poston 2018: 123). [↑](#footnote-ref-19)
20. We should note that here it might become important to keep track of whether these questions are posed in terms of know-how or in terms of ability. (For more on the distinction, see Sullivan (2018).) “Ability talk,” in particular, seems ambiguous between synchronic and diachronic readings. For example, I am not currently able to speak Cantonese, but there is a broader sense in which it seems like I am able to speak Cantonese—e.g., if I studied the language and applied myself to learning it. In this diachronic sense, I’m able to speak Cantonese in a way that I am not able to become an alligator, say. While there are no steps that could lead me to becoming an alligator, there are steps that could lead me to speaking Cantonese. I would just need to apply myself in the right way. [↑](#footnote-ref-20)
21. As Sandy Goldberg notes: "[S]o prevalent is the assumption that the comprehension dimension is unproblematic - that hearers reliably recover the propositions attested to - that there is virtually no discussion of the comprehension processes in the epistemological literature" (Goldberg 2007: 54). Boyd (2017), however, offers several nice points about the work that is required by the recipient in propositional knowledge transmission. [↑](#footnote-ref-21)
22. An example randomly chosen from Clark and Yallop (1995: 93). [↑](#footnote-ref-22)
23. Or again, consider one of the remarks I began with: That I live in New York. My guess is that when you read this you supposed that I lived in one of the five boroughs of New York City, and maybe Manhattan in particular. In fact, I live outside New York City, in one of its suburbs. It is still accurate to say I live in New York, because I live in New York State, but the reference of “New York” is so magnetized towards the city that it easy to misinterpret a claim like “I live in New York.” Unless you know the expression is ambiguous (between state and city), it is easy to misunderstand the proposition being expressed. [↑](#footnote-ref-23)
24. Hawley (2010) nicely illustrates some of the conditions that make for easy transmission of know how. [↑](#footnote-ref-24)
25. It is also arguably an upshot of Stephen Hetherington's view that know how is more fundamental than know that. See especially Hetherington (2012). [↑](#footnote-ref-25)
26. For more on the possibility of transmitting moral understanding via testimony, see Hills (2013) and Callahan (2018; forthcoming). [↑](#footnote-ref-26)
27. For helpful feedback on earlier versions of this paper, thanks to Michael Brady, Laura Callahan, Adam Carter, Georgi Gardiner, Stephen Hetherington, Alison Hills, Xingming Hu, Federica Malfatti, Whitney Schwab, Raphael van Riel, and Lani Watson. [↑](#footnote-ref-27)