

Spinoza on Numerical Identity and Time

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Introduction

Spinoza claims that a person's body can be numerically identical over time, despite changes in its size, shape, and speed. He also claims that a person's mind can be numerically identical over time, despite changes in its thoughts, emotions, and volitions. But these claims seem to conflict with the Indiscernibility of Identicals, the principle that numerical identity implies indiscernibility. How would Spinoza resolve the conflict?

I will argue that he would reject the Indiscernibility of Identicals. This might surprise contemporary metaphysicians, because they typically regard the Indiscernibility of Identicals as obviously true, if not definitionally true (e.g., Tarski 1994, p.50; Sider 2007, 4). In their minds, rejecting the Indiscernibility of Identicals would be like rejecting the principle that a thing is identical to itself.

This might also surprise historians of philosophy, because they sometimes attribute the Indiscernibility of Identicals to their subjects without any direct evidence. Della Rocca is admirably forthright about why he attributes it to Spinoza: "Spinoza does not explicitly discuss this principle, but, given its triviality, it seem legitimate to attribute this principle to him. We could not, I think, coherently see Spinoza as denying this principle" (Della Rocca 1996, 132).

This interpretation might also clarify key doctrines. For example, according to Spinoza's conatus doctrine, it is essential to a body that it strives to increase its power (E3p6, 3p12d). This presupposes that a body is identical over time, despite increases in its power. Similarly, according to Spinoza's monism doctrine, every change, including every change in a body's size, shape, and motion, is a change in God's properties (E1p16d). This presupposes that God remains identical over time despite instantiating contrary properties at different times. As we'll see, the Indiscernibility of Identicals is often taken to have profound implications for one's view of change. We should thus try to reconstruct whether Spinoza would take the Indiscernibility of Identicals to have any of those implications for his view of change and thus for these key doctrines. As far as I'm aware, Waller (2012) was the first to ask this question, and we'll be the second.

This interpretation might also help us understand some of Spinoza's other claims. In particular, he seems to be committed to four other claims that conflict with the Indiscernibility of Identicals. First is the claim that a mind is numerically identical to its body, even though the mind thinks and does not move, and the body moves and does not think (E2p7s; Morrison (manuscript b), Sect. 3). Second is that a mind is identical to the idea of that mind, even though the mind thinks about bodies and not ideas, and the idea of the mind thinks about ideas and not bodies (E2p21s; Morrison (2017), Sect. 3). Third is that a mind is identical to the idea of a thing belonging to another attribute, even though the mind thinks about bodies and not things

belonging to that other attribute, and the other idea thinks about things belonging to that other attribute and not bodies (Ep66; Morrison (2017), Sect. 4). Fourth is that the thinking substance is numerically identical to the extended substance, even though the thinking substance is modified by ways of thinking and not ways of moving, and the extended substance is modified by ways of moving and not ways of thinking (E2p6, E2p7s). If Spinoza would reject the Indiscernibility of Identicals to accommodate variation across time, perhaps he would also reject it to accommodate these other kinds of variation (see Morrison (2017), Morrison (manuscript b)).

A Puzzle

Let's use a puzzle to sharpen the conflict between Spinoza's claims about change and the Indiscernibility of Identicals. For concreteness, let's focus on Peter, a character familiar from both the medieval and early modern literatures. Let's specifically focus on his body. Suppose that Peter had an uneventful day: he woke up in the morning, walked until nighttime, and then fell asleep. Let *Morning Peter* be the body which moved in the morning, and let *Night Peter* be the body which rested at night. The following three claims seem mutually inconsistent:

- a. Morning Peter instantiated motion in the morning, and Night Peter instantiated a contrary property at night (namely: rest).
- b. Morning Peter and Night Peter are numerically identical.
- c. If x and y are numerically identical, and x instantiated a property at a time, there is no time at which y instantiated a contrary property.

The puzzle is to say which claims, if any, we should reject.

The last of these claims, (c), is the Indiscernibility of Identicals. There are two notions at the core of this principle: property and instantiation. These notions are sometimes understood narrowly, so that denying that properties exist outside of space and time (as *universals*) is enough to deny that there are properties, and denying that properties can be instantiated by more than one object is enough to deny that properties are instantiated. But let's understand these notions as broadly as possible, to give ourselves a framework general enough to accommodate other views, including views that imply that motions, shapes, colors, etc., exist only at some times and locations, and are each instantiated by at most one object (as *tropes*). For example, let's accommodate the view that Peter's motion exists only at Peter's location, and only while Peter is moving.

This isn't the canonical formulation of the Indiscernibility of Identicals. The canonical formulation is:

If x and y are numerically identical, x instantiates a property if and only if y instantiates that property.

I prefer our formulation for two reasons. First, I think the puzzle is simpler when formulated in terms of contrary properties, because that makes the inconsistency between Morning Peter's moving and Night Peter's resting immediate. As a first pass this yields:

If x and y are numerically identical, and x instantiated a property, y didn't instantiate a contrary property.

Examples of contrary properties include motion and rest, red and green, and weighing less than 10 kilograms and weighing more than 10 kilograms. While the notion of a *contrary property* is open to further analysis, for our purposes it is enough that motion and rest are paradigmatic examples. Why should this count as a reformulation of the Indiscernibility of Identicals? If y instantiates a contrary property (e.g., rest), it doesn't also instantiate x 's property (e.g., motion). That's just what it is for motion and rest to be contrary properties. Thus, it is entailed by the canonical formulation. Establishing the converse, that the canonical formulation entails it, would take more work. So let's just note that, even if it doesn't, that would merely establish that this formulation is weaker, and thus harder to reject.

Second, I think the puzzle is clearer when formulated without any ambiguity about when the contrary properties are instantiated. Disambiguated in one way, our first pass is equivalent to a principle that doesn't give rise to a puzzle:

If x and y are numerically identical, and x instantiated a property at a time, then y didn't instantiate a contrary property *at that time*.

This just implies that Night Peter didn't instantiate rest *at the same time* that Morning Peter was walking. It is thus consistent with the identity and discernibility of Morning Peter and Night Peter, i.e., (a) and (b).

I don't think it's worth arguing about how to disambiguate the Indiscernibility of Identicals. We're interested in a principle that gives rise to a puzzle about change, and thus in a principle equivalent to, or at least sufficient for, (c). For our purposes, then, it's better to just stipulate that this is the principle we have in mind, and to use 'Indiscernibility of Identicals' as a label for it. Let's therefore continue using 'Indiscernibility of Identicals' as a label for (c).

We're not alone in using 'Indiscernibility of Identicals' in this way. Contemporary metaphysicians also use it as a label for a principle that is at least sufficient for (c), and thus gives rise to a puzzle about change. Moreover, as noted in the introduction, almost all of them accept it. They regard it as an obvious truth, like the principle that each thing is identical to itself (for surveys see Haslanger (2003), Wasserman (2006), Kurtz (2006), and Sider (2007)). In fact, I'm only aware of five who would reject it (Myro (1986), Baxter (1999), Hansson (2007), Rychter (2009), and Hofweber (2009)).

To understand why almost all contemporary philosophers regard the Indiscernibility of Identicals as an obvious truth, let's consider eternalism, a popular view about time. According

to eternalists, times are like locations. Just as minerals exist below us in the ground and clouds exist above us in the sky, eternalists claim that our ancestors exist before us in the seventeenth century and our descendants exist after us in the twenty-second century. Eternalists describe reality as four-dimensional, with things distributed across all four dimensions, including the fourth, temporal dimension. If you ask an eternalist what exists in the most expansive sense of 'exists,' they will list objects that exist in the past, present, and future. According to them, terms like 'past,' 'present,' and 'future' indicate when something exists in relation to when we exist, just as terms like 'here' and 'there' indicate where something exists in relation to where we exist. These terms don't indicate which objects exist and which objects don't exist.

For an eternalist, the puzzle of identity over time is that our reasons for thinking that objects at different *locations* are non-identical also seem like reasons for thinking that objects at different *times* are non-identical. Let *Downstairs Peter* be a person who is currently on a treadmill downstairs, and let *Upstairs Peter* be a person who is simultaneously resting upstairs. One reason for thinking that Downstairs Peter isn't identical to Upstairs Peter is that Downstairs Peter instantiates *motion* and Upstairs Peter instantiates *rest*. This might not be the only reason for thinking that Downstairs Peter isn't identical to Upstairs Peter. But it seems like a sufficient reason. From an eternalist perspective, the puzzle of identity over time is that we seem to have just as good a reason to think that Morning Peter isn't identical to Night Peter, namely that Morning Peter instantiated *motion* and Night Peter instantiated *rest*. This seems like just as good a reason because, from an eternalist perspective, variation across reality's three spatial dimensions is relevantly like variation across its fourth, temporal dimension. For the eternalist, if the mere fact that Downstairs Peter and Upstairs Peter are moving at different speeds is enough to establish that they are distinct bodies, the mere fact that Morning Peter and Night Peter were moving at different speeds is enough to establish that they are distinct bodies. Likewise, if the mere fact that Downstairs Peter and Upstairs Peter are in different locations is enough to establish that they are distinct bodies, the mere fact that Morning Peter and Night Peter are at different times is enough to establish that they are distinct bodies. Thus, from an eternalist perspective, the Indiscernibility of Identicals might seem obviously true.

Like these philosophers, Spinoza accepts eternalism (Waller 2012, Ch 2, esp. p.23 and n37). It might therefore seem as though he too should accept the Indiscernibility of Identicals and reject the identity or discernibility of Morning Peter and Night Peter, i.e., (a) or (b). In the next section I'll explain why he wouldn't respond in either of these ways. In the penultimate section I'll explain why, unlike most contemporary philosophers, Spinoza is able to reject the Indiscernibility of Identicals while still accepting eternalism.

Identity and Discernibility

The most important passage is Spinoza's definition of 'one body' in the so-called physical digression following E2p13:

When a number of bodies, whether of the same or different size, are so contained by other bodies that they lie upon one another, or if they so move, whether with the same

degree or different degrees of speed, that they communicate their motions to each other in a certain fixed pattern [*ratio*], we shall say that those bodies are united with one another and that they all together compose one body, or individual, which is distinguished from the others by this union of bodies. (E2P13sPhysDigD1; see also KV App. II 14; I'm here following Garrett (1994), 86–7 in translating *ratio* as 'pattern'.)

Spinoza infers from this that, if a body's pattern of motion is disrupted, the body is destroyed (E2P13sPhysDigD1, E4p39s; see Perler 2020 for background and elaboration). Spinoza also infers that, as long as that pattern is preserved, the body remains numerically the same, as when its parts merely grow in size (E2P13sPhysDigL5) or when there's merely a change in the direction or speed of its overall motion (E2P13sPhysDigL6, L7). Thus, as long as that pattern is preserved, the body remains numerically the same, despite having a different size and motion. Spinoza thereby seems committed to the identity and discernibility of a body over time, and thus to (a) and (b) so long as Peter's pattern of motion was preserved.

As a way of better understanding his commitments to (a) and (b), let's consider the textual and systematic evidence that he wouldn't accept any of our present-day proposals for rejecting these commitments.

Relationists would deny the discernibility of Morning Peter and Night Peter (see Mellor 1998, Ch 8). They would first insist that *motion* and *rest* are relations to times. In that case, to say that someone instantiated *motion* is to say that he stood in the *motion* relation to a time. They would then insist that Morning Peter and Night Peter stood in the same relations to the same times. In particular, when Morning Peter was walking, he stood in the *motion* relation to the morning and in the *rest* relation to the night. Likewise, when Night Peter was resting, he stood in the *motion* relation to the morning and in the *rest* relation to the night. It might help to make a list:

Morning Peter stood in the *motion* relation to the morning.
Morning Peter stood in the *rest* relation to the night.
Night Peter stood in the *motion* relation to the morning.
Night Peter stood in the *rest* relation to the night.

Relationists would conclude that while Morning Peter was walking he instantiated all the same properties as Night Peter while he was resting. They would also conclude that none of these properties are contraries. Just as standing in the *taller than* relation to one person is compatible with standing in the *shorter than* relation to another person, standing in the *motion* relation to the morning is compatible with standing in the *rest* relation to the night. This understanding of change is therefore consistent with the Indiscernibility of Identicals.

There are several reasons why Spinoza would reject relationism. First, according to Spinoza a body's properties, including its motion, size, and shape, are just ways in which the body exists. Like Descartes and Aquinas, he calls them *modes* (E1p25c, E2d1; Carriero 1995). As a result, once a thing stops moving, there's no sense in which its previous motion is still a mode

of it. Instead, it has a new property, because it exists in a new way. Thus, given his understanding of change and properties, Spinoza would reject any proposal, including relationism, which implies that a body changes without gaining or losing properties.

Second, Spinoza seems to deny the existence of relations involving more than one object, i.e., polyadic relations. He classifies them as “beings of reason,” which implies that they depend on the mind (CM I 4 | G I 244/23-32). There’s an interesting puzzle about how to reconcile this with his claims about causation and inherence, given how central these relations are to his metaphysics (see Gartenberg (2020), conclusion). But, regardless of how that puzzle is resolved, it seems unlikely he’d countenance the existence of the relations that are at the core of the relationist proposal. He does, however, countenance modes. In fact, he says that modes and substances are the only things that exist (E1p4d). It might help to keep in mind that, for Spinoza, candles, diamonds, tulips, butterflies, and human bodies are all modes.

Third, Spinoza also seems to deny the existence of times, because he similarly classifies them as “beings of reason” (KV I 10 | G I 49/5-8; Gartenberg (2020)). For Spinoza, finite physical reality is nothing but a causal ordering of all bodies; there are no mind-independent “times” above and beyond that causal ordering. Thus, if properties are relations to times, they must be relations either to mind-dependent abstractions from that causal ordering, or to bodies within that causal ordering. But if times are mind-dependent abstractions, and properties are relations to times, then properties too must be mind-dependent. However, for Spinoza, sizes, shapes, and speeds can’t be mind-dependent, because they belong to the attribute of extension rather than the attribute of thought, and the attributes are supposed to be independent of each other (E1p10). Spinoza also can’t say that a body’s properties are relations to *other bodies* within the causal ordering. For example, suppose that Peter’s motion is a relation between Peter and the position of the sun. That would lead to an endless march, because the sun’s position is itself a property and therefore would need to be a relation to the properties of still other bodies, and so on, without end.

Adverbialists would also deny the discernibility of Morning Peter and Night Peter (see Johnston 1987). They would first insist that, for every time, there is a different way of instantiating *motion*. They would then insist that Morning Peter and Night Peter instantiated the same properties in the same ways. In particular, while Morning Peter was walking, he instantiated the property *motion* in a morning-ly way, and he instantiated the property *rest* in a night-ly way. Likewise, while Night Peter was resting, he instantiated the property *motion* in a morning-ly way, and he instantiated the property *rest* in a night-ly way. It might help to again make a list:

Morning Peter instantiated *motion* in a morning-ly way.

Morning Peter instantiated *rest* in a night-ly way.

Night Peter instantiated *motion* in a morning-ly way.

Night Peter instantiated *rest* in a night-ly way.

Adverbialists would conclude that while Morning Peter was walking he instantiated all the same properties in the same ways as Night Peter while he was resting. They would also conclude that

none of these properties are contraries. Just as greeting one person in a friendly way is compatible with greeting another person in an unfriendly way, instantiating *motion* in a morning-ly way is compatible with instantiating *rest* in a night-ly way. This understanding of change is therefore consistent with the Indiscernibility of Identicals.

There are at least two reasons why Spinoza would reject adverbialism. First, as noted above, he seems to think a body changes by gaining or losing properties. In that case, he would reject any proposal that implies that things always instantiate the same properties in the same ways.

Second, as Spinoza understands modes, they exist at some times but not at other times. For example, candles, diamonds, tulips, butterflies, and human bodies are modes, and they exist at some times, but not at other times. Spinoza also thinks that the modes of these modes are created and destroyed, and thus exist at some times but not at other times. For example, emotions are properties of our minds, and he repeatedly says that they're destroyed (E3p43, E3p38, E4p7, E5p2, E5p20s). There are some modes that always exist, the so-called *infinite* modes (E1p21–23). But bodies and their modes are finite, and are thus created at some time and destroyed at a later time. For this reason, if Night Peter instantiates motion in some sense, that motion must exist at some time. When? Presumably in the morning, and only in the morning, because that's the only time at which Peter was moving.

But this has a bizarre consequence. As Spinoza understands instantiation, whenever a property is instantiated by an object, it metaphysically depends on that object (E1d5; Carriero (1995)). For example, while Peter instantiates motion in the morning, that motion metaphysically depends on him. Thus, if Peter still instantiates the same motion at night, that motion must still depend on him. As a result, something that exists at an earlier time, and only at an earlier time (namely: Peter's motion) would metaphysically depend on something at a later time (namely: Peter at night). More generally, things in the past would metaphysically depend on things in the future. Michael Della Rocca has been rightly criticized for interpreting Spinoza so that things in the future metaphysically depend on things in the past (see Melamed (2012); Melamed (2013), 98f). Reversing the order of dependence would only enhance the strangeness.

There's another bizarre consequence. As Spinoza understands instantiation, the existence of a property *causally* depends on whatever instantiates it (E1p16c1, E2P13sPhysDigA1"). Thus, if Spinoza were an adverbialist, he'd be committed to saying that things in the past causally depend on things in the future, a case of backwards causation. For example, Peter's motion would causally depend on Peter even at night, when he's no longer moving. Causation would run in both directions, and perhaps in circles, even though it seems like a paradigmatic example of an exclusively forward relation.

Exdurantists would deny that Morning Peter and Night Peter are identical. They claim that a person's body exists only for an instant, at which point it is replaced by a new body (see Hawley (2001), Ch 2; Chisholm (1976); Parfit (1984); Varzi (2003a), Varzi (2003b); Sider (1996)). The new body is often, but not always, nearly indiscernible from the old body. For example, Morning

Peter was replaced by a body that was nearly indiscernible, except that it was moving slightly faster, and perhaps also had a slightly different shape, because its knee was slightly higher. It was then replaced by another body, and so on. According to exdurantists, there was no body that was moving in the morning and then resting at night. There was just a series of different bodies, some moving, others resting, some with bent knees, others with straight knees. Morning Peter and Night Peter are supposed to be bodies in that series. Because objects would change only by coming into and going out of existence, and not by instantiating different properties at different times, exdurantism is consistent with the Indiscernibility of Identicals.

However, Spinoza repeatedly says that a person's body is identical over time. For example, he says that "one and the same man" can respond differently to the same stimulus at different times (E3p51&s; see also E4p33). An insult might infuriate a man when he's young, but have no effect after his intellect is sufficiently strengthened (E4p44s). Spinoza says that the mind, and therefore the body (by E2p7), can "undergo great changes, and pass now to a greater, now to a lesser perfection"(E3p11s; see also E4p27, E4pref | G II 208/24--30). A human body can survive transitions from sadness to joy (E3DefAffect), from sickness to health (E5p39s), and, more generally, from childhood to old age (see E5p6s and E5p39s; Hübner 2017, p.43--44). A human body can therefore survive the relatively minor transition from walking to resting. Indeed, he seems to think that all bodies can survive similar changes, and treats it as axiomatic that "each body moves now more slowly, now more quickly"(E2P13sPhysDigA1). There's a systematic reason why all bodies must be capable of change. If a body existed for only an instant, its power couldn't increase. But Spinoza says that it's essential to all bodies to strive to increase their power (E3p6 in light of E3p12d).

Waller (2012, Ch 8) suggests reinterpretations of these claims. According to Waller, Spinoza is merely saying, for example, that each body can be replaced by a *similar* body that is moving more slowly or more quickly. Likewise, that a body strives to be replaced by a *similar* body with more power. But I think we should try to preserve the literal meaning of what Spinoza says.

Finally, **perdurantists** would deny either the discernibility or the identity of Morning Peter and Night Peter, depending on how these names are disambiguated. Like exdurantists, perdurantists claim that there was a series of different bodies, some moving, others resting, some with bent knees, others with straight knees. Unlike exdurantists, perdurantists claim that there were also longer-lived bodies composed of those shorter-lived bodies (see Quine 1950; Lewis 1986, Ch 4). Peter is one of those longer-lived objects. He exists "partly" whenever one of his short-lived parts exists. Thus, according to perdurantists, there were many things that were moving in the morning: To start, there were all the short-lived bodies, perhaps as many as one for each instant in the morning. In addition, there was Peter, and all the other longer-lived bodies composed of at least one of those short-lived bodies. As a result, the names 'Morning Peter' and 'Night Peter' are ambiguous, because I let Morning Peter be *the* body that was moving in the morning, and I let Night Peter be *the* body that was resting at night, when in fact more than one body satisfies those descriptions. To start, there were all the short-lived bodies that were moving. In addition, there were all the longer-lived bodies composed of at least one of those short-lived bodies. As perdurantism is developed by Lewis and others, there

were so many other composite bodies that it's indeterminate which of them is Peter (see especially Lewis 1993). In any case, if we disambiguate these names so that they refer to the same long-lived body, and that body is composed of at least one short-lived body that was moving in the morning and at least one short-lived body that was resting at night, then perdurantists would deny their discernibility. After all, just because a person has parts that instantiate contrary properties (e.g., the elliptical shape of their leg and the disk shape of their ear), it doesn't follow that the person as a whole instantiates contrary properties. Alternatively, if we disambiguate these names so that they refer to anything else that satisfies the relevant descriptions, perdurantists would deny their identity, because composites are identical only if they share all the same parts. In either case, perdurantism is consistent with the Indiscernibility of Identicals, because there is no object that instantiates contrary properties.

Spinoza can't use perdurantism to solve the puzzle. As noted above, Spinoza is committed to saying that *all* bodies are capable of change, even the shortest-lived. It follows that, if Peter is composed of short-lived bodies, he's composed of bodies that are capable of change. The puzzle would therefore merely be relocated to these bodies. Perdurantism is a solution to the puzzle of change only if the shortest-lived bodies don't change, and for Spinoza they must.

There's another reason why Spinoza can't accept perdurantism, at least as it is standardly developed. Most perdurantists claim that the shortest-lived bodies are instantaneous, precisely because that implies that they're incapable of change. However, like Descartes, Spinoza rejects the view that motion and other processes can be decomposed into instantaneous stages (Ep12 | G IV 58/12-15; DPP2p6s | G I 193/25-194/2, 195/23-27; for a contrary interpretation of these passages, see Waller 2012, p.91-93). He thus can't countenance instantaneous bodies.

It's also worth mentioning that he never talks about instantaneous bodies, or even short-lived bodies. He also never describes longer-lived bodies as composed of bodies that exist at different times. He instead describes longer-lived bodies as existing at each instant because their patterns of motion are preserved at each instant, rather than because they have a part at each instant (see E2P13sPhysDigD1 above). Indeed, whenever he talks the parts of bodies, he only mentions their spatial parts (E1p15s, E2P13sPhysDigL5; Waller 2012, p.86). He seems to accept the traditional view that bodies exist "wholly," rather than "partly," at each instant.

There are two passages that might seem to suggest perdurantism, but on closer examination don't. Here's the first passage:

We live in continuous change, and that as we change for the better or worse, we are called happy or unhappy. ... In this life, then, we strive especially that the infant's body may change (as much as its nature allows and assists) into another, capable of a great many things and related to a mind very much conscious of itself, of God, and of things. (E5p39s)

Spinoza says that an infant's body may *change into* an adult's body. According to the perdurantist, this happens when the infant's body (as an early temporal part) is destroyed and

replaced by a series of bodies culminating in the adult's body (as a later temporal part). This passage doesn't rule out the possibility that people persist in this way. But it also doesn't commit Spinoza to anything so specific. It just says that the same body can belong to different kinds at different times, e.g., as an infant at one time, as an adult at another; as a moving thing at one time, as a resting thing at another. And that's true on almost all accounts of persistence.

Here's the second passage:

The human body, to be preserved, requires a great many other bodies, by which it is, as it were, continually regenerated. (E2P13sPhysDigP4)

Spinoza says that a person's body is, as it were, *continually regenerated*. Perdurantism gives a natural account of the sense in which a person might be continually regenerated. But I take the phrase 'as it were' in this passage to indicate that this isn't really a case of regeneration. In support of this interpretation, consider that he omits the entire phrase 'by which it is, as it were, continually regenerated' when he restates this postulate in E4p39d.

There's a final mark against perdurantism. Even if Spinoza could be a perdurantist about bodies, there would still be a puzzle, because he can't be a perdurantist about the extended substance, God. Why not? Spinoza denies that God has parts (E1p13; Schmaltz 2020). While his argument is explicitly about spatial parts, it equally establishes that God doesn't have temporal parts. Here's his argument: Suppose that God's parts are themselves substances with infinitely many attributes. In that case, we can't distinguish them by their attributes, because all of them would have all of the same attributes. But that contradicts Spinoza's claim that substances can't share attributes (E1p5). If the parts are temporal, there's another reason why he has to reject this possibility. Temporal parts exist at some times but not at other times, and thus substances with infinitely many attributes would have to exist at some times but not at other times. But that contradicts Spinoza's claim that substances with infinitely many attributes exist necessarily, and thus at all times (E1p11, E1d8). Alternatively, suppose that God's parts are either substances with fewer attributes or modes of a substance. In either case, they could all be destroyed, and thus God could be destroyed (E1p12). But that would contradict Spinoza's claim that God necessarily exists (E1p11). Thus, for the same reason he denies that God has spatial parts, he must deny that God has temporal parts. Perdurantism therefore doesn't offer a general solution to the puzzle. There would still be a puzzle about how God can instantiate contrary properties at different times.

Indiscernibility of Identicals

Here, again, is the puzzle:

- a. Morning Peter instantiated motion in the morning, and Night Peter instantiated a contrary property at night (namely: rest).
- b. Morning Peter and Night Peter are numerically identical.

- c. If x and y are numerically identical, and x instantiated a property at a time, there is no time at which y instantiated a contrary property.

Almost all contemporary philosophers reject either the identity or the discernibility of a person over time, i.e., (a) or (b). This isn't a coincidence. Contemporary philosophers believe that, if we want to be coherent, these are our only options. But there's a third option: reject the Indiscernibility of Identicals, perhaps in favor of the principle restricted to a time.

I believe that Spinoza would respond in this way. The argument is straightforward: He's committed to (a) and (b), and these commitments are jointly inconsistent with (c).

Of course, philosophers sometimes have inconsistent commitments. But if Spinoza were committed to (a)-(c), he would have noticed the inconsistency. After all, it's completely straightforward. Spinoza was also deeply interested in identity, especially its necessary conditions. For example, in response to Descartes, he claims that the thinking substance and the extended substance are identical even though each can be conceived without the other (E1p10s). It thus seems especially unlikely that *Spinoza* of all people would fail to notice the inconsistency. It would also be completely out of character for him to notice the inconsistent and dishonestly choose to ignore it.

There are three additional considerations in favor of this interpretation. The first is that he nowhere relies on the Indiscernibility of Identicals, as opposed to the restricted principle:

If x and y are numerically identical, and x instantiated a property at a time, then y didn't instantiate a contrary property *at that time*.

For example, he argues that a body isn't an extended substance, because the body has parts while an extended substance doesn't (E1p13c, E2p10s). This argument presupposes a link between identity and indiscernibility, but doesn't require the Indiscernibility of Identicals, because the extended substance lacks parts at the same time that the human body has parts. Of course, this is just one of his arguments involving identity and indiscernibility. But I can't find any arguments that require the Indiscernibility of Identicals rather than this more restricted principle.

Spinoza might still accept the converse principle, called the Identity of Indiscernibles. According to this principle:

If for every property of x there is no time at which y instantiated that property, then x and y are numerically identical.

While Spinoza never explicitly commits himself to this principle, he does assume that numerically distinct substances must be discriminable (see E1p4). As Lin (2010, Sect. 2) points out, it's debatable whether this commits Spinoza to the Identity of Indiscernibles, because it's unclear whether Spinoza thinks that numerically distinct *modes* must be discriminable. But, even if his arguments don't require the Identity of Indiscernibles, he might still accept it.

In fact, Spinoza might accept this principle for the very reason he would reject the Indiscernibility of Identicals. Spinoza seems to think that sharing the same essence is necessary and sufficient for numerical identity. He writes:

I say that to the essence of any thing belongs that which, being given, the thing is necessarily posited and which, being taken away, the thing is necessarily taken away ... (E2d2)

I take Spinoza to be saying that the essence of a thing is sufficient for that thing (“the thing is necessarily posited”) and necessary for that thing (“the thing is necessarily taken away”). In that case, x and y are identical if and only if they share the same essence. This might give him a reason to accept the Identity of Indiscernibles. In particular, indiscernible things must share the same essence, in virtue of being indiscernible. Thus, if sharing the same essence is sufficient for identity, being indiscernible is sufficient for identity. This might also give him a reason to reject the Indiscernibility of Identicals. In particular, discernible things could still be identical, because discernible things could share the same essence. They could be discernible merely in their inessential properties, such as any properties that result from chance encounters. Thus, being indiscernible might not be sufficient for identity.

The second consideration is that, even though Spinoza is an eternalist, he has the resources to resist the argument for the Indiscernibility of Identicals that I mentioned earlier. Recall that eternalists are committed to treating times like locations. Thus, if an eternalist believes that Downstairs Peter is not identical to Upstairs Peter *merely because* they instantiate conflicting properties, an eternalist is committed to believing that Morning Peter is not identical to Night Peter if they instantiate conflicting properties. Generalizing, if an eternalist believes that objects at different locations aren’t identical *merely because* they instantiate conflicting properties, she is committed to believing that objects at different times aren’t identical if they instantiate conflicting properties, i.e., the Indiscernibility of Identicals. Thus, from an eternalist perspective, it might seem that anyone who thinks that identity precludes conflicting properties at a time must also think that identity precludes conflicting properties at different times.

But Spinoza has the resources to resist this argument. In particular, Spinoza can *deny* that the non-identity of Downstairs Peter and Upstairs Peter because of their conflicting properties. He can instead attribute their non-identity to *the attribute of extension*. Crucially, he can then say that, even though the attribute of extension prevents a body from have conflicting properties at the same time, it allows a body to have conflicting properties at different times.

Let’s build up to this conclusion. According to Spinoza, the essence of a human body imposes a number of restrictions on what states it can have. For example, a human body’s heartbeat cannot exceed 300 bpm, and its internal temperature cannot exceed 200° C. Under these extreme conditions, a human body is unable to sustain the fixed patterns of motion between its parts, and is destroyed (see again E2P13sPhysDigD1). The essences of candles, diamonds, tulips, and butterflies don’t impose these same restrictions. Diamonds, for example, don’t have

heartbeats, and remain intact up to 700° C. But there are some restrictions imposed by all bodily essences. For example, all bodily essences require a body to have a size, shape, and motion. If something lacks a size, shape, or motion, it can't be a body, and thus can't be a pig, tulip, diamond, human body, etc.

What's the origin of this restriction? Given that it's shared by all bodies, it plausibly originates in the attribute of extension, because all bodily essences are contained in the attribute of extension (E2p8). Another restriction that might follow from the attribute of extension is that a body cannot have contrary properties at the same time, so that, for example, a body cannot be wholly moving and wholly resting at the same time, or wholly white and wholly brown at the same time. Plausibly, just as something that doesn't move can't be a body, so also something that's both moving and resting can't be a body. In that case, due to the attribute of extension: if *x* and *y* are numerically identical bodies, and *x* instantiated a property, then *y* didn't instantiate a conflicting property at the same time. Spinoza might say that Downstairs Peter and Upstairs Peter can't be identical because the essences of these bodies don't allow them to simultaneously move and rest, and that this restriction originates in the attribute of extension.

If this is Spinoza's reason for thinking that identity precludes conflicting properties at a time, must he also think that identity precludes conflicting properties at different times? No. The essence of a human body allows it to have conflicting properties at different times, because the essence of a human body allows for change; it allows a human body to move in the morning and to rest at night. Thus, even though the essence of a human body does not allow Downstairs Peter and Upstairs Peter to be identical, because of their conflicting motions *at the same time*, it allows Morning Peter and Night Peter to be identical, despite their conflicting motions *at different times*. More generally, even though there is no bodily essence that allows a body to have conflicting properties at the same time, all bodily essences allow a body to have conflicting properties at different times. This is because, whereas the attribute of extension does not allow a body to have conflicting properties at a time, it allows a body to have conflicting properties at different times.

In this way, Spinoza can coherently reject the Indiscernibility of Identicals while accepting eternalism and the weaker principle. The key is that Spinoza can deny that Downstairs Peter is not identical to Upstairs Peter because of the *mere fact* that they instantiate conflicting properties. Instead, they are not identical because of a restriction imposed by their essences, a restriction that ultimately originates in the attribute of extension, and thus from the nature of body in general.

It's worth briefly mentioning a possible further refinement. Perhaps the relevant restriction doesn't originate in each individual attribute, so that the restriction about bodies originates in the attribute of extension, the restriction about ideas originates in the attribute of thought, and so on. Perhaps all these restrictions originate from God's essence *as a whole*. Or, perhaps they originate from *the nature of being*. Of course, a lot would depend on how the italicized phrase are understood. But, for present purposes, I just want to point out that the restrictions might have a deeper origin than each individual attribute.

The third consideration is that it is highly probable that Spinoza was exposed to a philosophical tradition in which philosophers would reject the Indiscernibility of Identicals. In other work I argue that four of the most influential medieval Aristotelians -- Aquinas, Scotus, Ockham and Buridan -- would also reject the Indiscernibility of Identicals (Morrison manuscript a). While I don't know whether Spinoza read these authors, he might have absorbed their tradition through a number of intermediaries, such as the Jewish authors he read in yeshiva, or the scholastic authors he read at the University of Leiden (Nadler 1999, Ch 4, Costa 2020, Krop 2020). It was in the air.

There's also evidence that he interpreted Descartes in this way. He attributes to Descartes the view, "Even though the hardness, weight, and the rest of the sensible qualities are separated from a body, the nature of the body will still remain whole"(DPP2p1). Spinoza also attributes to Descartes the axiom, "If something can be removed from a thing, while the thing remains intact [*integra*], it does not constitute the thing's essence..."(DPP2a2). It follows that a body remains "intact" even as it changes its sensible qualities. Thus, Spinoza might have absorbed this tradition through Descartes (and see Morrison manuscript c).

In any case, if he were working in this tradition, the Indiscernibility of Identicals wouldn't have seemed like a principle that needed to be given up; it wouldn't have seemed true. In contrast, he wasn't exposed to a tradition in which philosophers endorsed relationism or adverbialism. While he might have been exposed to a tradition in which philosophers endorsed exdurantism (through the stoics), his claims seem to explicitly rule it out. And while he might also have been exposed to a tradition in which philosophers endorse perdurantism about some things (e.g., times, rivers; see Pasnau 2011, Ch 18), it's less likely, and there's also no suggestion that he's extending this tradition to human bodies or minds. Because exdurantism and perdurantism would have been marginal views, we also wouldn't expect Spinoza to take them for granted. We would expect him to more explicitly acknowledge them, and perhaps even defend them.

Conclusion

In the introduction I listed four other claims that seem to conflict with the Indiscernibility of Identicals. As a way of demonstrating the fruitfulness of our interpretation, let's consider one of them: the claim that a person's body is numerically identical to their mind, even though their body moves and does not think, and their mind thinks and does not move (E2p7s). This claim generates a parallel puzzle. For concreteness, let's again focus on Peter, in particular on his body and mind while he's moving in the morning. Unlike before, let's use the canonical formulation of the Indiscernibility of Identicals, because it's easier to establish that Peter's mind isn't moving than to establish that thinking and moving are contrary properties. Here's the puzzle:

- a.' Peter's body instantiated motion, whereas Peter's mind did not instantiate motion.
- b.' Peter's body and Peter's mind are numerically identical.
- c.' If x and y are numerically identical, x instantiated a property if and only if y instantiated

that property.

These claims seem jointly inconsistent. Which claim would Spinoza reject? According to most commentators, he would reject (a') or (b'). But, as I argue in other work, there is an abundance of evidence that he's really committed to them (Morrison manuscript b).

Another option is that Spinoza would reject (c'), at least when understood so that it's inconsistent with (a') and (b') (Garrett 2017, Morrison 2017, Morrison manuscript b, Bledin and Melamed manuscript). As I think this proposal is best developed, attributes are time-like, so that, just as Peter is numerically identical over time despite instantiating different properties at different times (e.g., motion in the morning and rest at night), Peter is numerically identical across attributes despite instantiating different properties in different attributes (e.g., motion in the attribute of extension and thought in the attribute of thought). So developed, the proposal is that Peter's identity across both times and attributes is due to his essence. There's a lot to say about this interpretation, especially its implications for Peter's essence. But I hope this is enough to illustrate how our interpretation might generalize to some of Spinoza's other puzzling claims about identity. Our interpretation thereby opens the door to a systematic understanding of many different corners of Spinoza's metaphysics.

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