

Leonardo da Vinci and William Shakespeare have been thinking about nothing

Leonardo da Vinci and William Shakespeare have been thinking about nothing

Think about Leonardo's Notebooks, where many have found this remarkable claim:

'Infralle cose grandj che infra noi si trovano l'essere della nulla he gradjsima.'(c1503-4)

'Among the great things found among us the existence of nothing (l'essere del nulla) is the greatest.'¹

In another place he virtually repeats the same claim:

'Infra le grandezze delle cose che sono infra noi l'essere del nulla tiene il principato.'(c1503-4)

'Amid the vastness of the things among which we live, the existence of nothingness (l'essere del nulla) holds the first place...'²

What on earth could he mean? No irony or lack of seriousness is apparent in the surrounding passage. He seems to be explaining something he sees as given, not arguing for something that needs arguing, something apparently extraordinary. Following on in the second passage he adds some more details:

'...and its function extends over the things with no existence, and its essence, as regards time, lies precisely between the past and the future, and possesses nothing [niente] of the present. This nothingness [nulla] has the part equal to the whole, and the whole to the part, the divisible to the indivisible; and the product of the sum is the same whether we divide or multiply, and in addition as in subtraction; as is proved by arithmeticians by their tenth figure which represents zero; and its power has not extension among the things of nature.'

Nothing [nulla] possesses nothing [niente] of the present, he seems to be saying, though in Italian there is no significant difference in the use of the two words [for nothing]. So why bother with it? Why consider it 'the greatest' or the 'great things', whose existence or being [l'essere] 'holds the first place'? Another passage might help:

'What is called nothingness [niete] is to be found only in time and in speech. In time it stands between the past and future and has no existence in the present [nulla ritiene del presente]; and thus in speech it is one of the things of which we say: They are not, or they are impossible.'

This is clearer and closer to how we might understand 'nothingness' or 'nothing', i.e., as a word we use in speech to refer to what is not the case, or is impossible. But how does it exist in time? Especially how, if it 'lies precisely between the past and the future' does it not 'possess' something 'of the present'? What he has to say further on this is far from clear:

'With regard to time, nothingness [nulla] lies between the past and the future, and has nothing [niente] to do with the present, and as to its nature it is to be classed among the things impossible: hence, from what has been said, it has no existence [e non a l'essere]`; because where there is nothing [nulla] there would necessarily be a vacuum.'

Here we seem to have the beginning of an argument, with two premises or reasons, one presently suppressed, by expressed elsewhere in the notebooks, i.e.,

1) Where there is nothing there would necessarily be a vacuum.

i.e., If the present contains nothing, it would be a vacuum.

•2) [But a vacuum is not nothing, and so nothing and a vacuum are not the same] [suppressed premise, expressed elsewhere].

[i.e., The present is not a vacuum.

3) Therefore the present doesn't contain nothing [nulla]; i.e., nothing has no existence [in the present].

If this is what he is saying, and it need not be, then it seems to contradict his first statement, that the existence of nothing (l'essere del nulla) is the greatest of the great things among which we live. How can nothing (nulla) be anything, have any being or existence (l'essere) if it has no existence [e non a l'essere]? Some distinction between being ('between past and future', for instance) and existence (or non-existence in the present) is called for, or perhaps between different kinds of 'nothing.'

In modern Italian *nulla* and *niente* are more or less interchangeable, except for some stock phrases like *niente scherzi* (no joke), *niente pauri* (no fear) and *dolce far niente* (sweet idleness). Also in maths, physics and philosophy *nulla* is used to refer to the abstract quantity 'nothing', zero, or nothingness. In English and Italian we can use the word 'nothing' as an adjective, adverb, noun or pronoun, and each with different meanings. As an adjective it can mean 'worthless' or 'of no account', as when we say 'It was nothing' or 'worth nothing.' As an adverb we can use to modify a verb or adverb, or another adjective, e.g., 'nothing special, nothing strange, and means 'in no way, not at all.' When we use it as a pronoun we are substituting it for a noun, as if it were something substantive. E.g. 'Nothing gets by you.' Or 'Nothing ventured, nothing gained.' We can imagine something not ventured, gained or someone not venturing, and so not gaining, but we mean 'only if something is ventured is something gained'. We are not referring to something that does not exist, or to the sum of 1 and minus 1, or someone of no or slight value, or even to absolute nothing or nothingness. When we do any of those things we are using 'nothing' as a noun, and important ambiguities can arise in meaning and use. When we say 'Nothing interests me here' our meaning and use of nothing (as a pronoun meaning no thing) is usually clear. If you are saying or thinking it now, I hope you are interested enough to see that for da Vinci at least something strange and novel is being referred to. It should become clearer when looking at Shakespeare's English, but first I want to try and see what Leonardo sees here, why Nothing [*nulla*] interests him enough to claim for its existence or being [*l'essere*] the highest place [*il principato*], the greatest in his scheme of great things, but also somehow no place [*non a l'essere*] in the present.

Leonardo's notebooks are principally concerned with his Science of Painting,⁴ i.e., his account of the theory and practice of painting, the nature of the eye, perspective, light and colour, botany, landscape painting, and practical and moral precepts for painters. In his Introduction To Perspective: That Is Of The Function Of The Eye, he says he has found something about the eye 'not known or falsely understood' till then:

'22: Here [in the eye] forms, here colours, here the character of every part of the universe is concentrated to a point; and the point is so marvellous a thing...Oh! marvellous, O stupendous Necessity- by thy laws thou dost compel every effect to be the direct result of its cause, by the shortest path. These [indeed] are miracles...'

This unusually impassioned passage draws out the foundation of his general account of perspective, i.e., the point:

'42. All the problems of perspective are made clear by the five terms of mathematicians, which are: --the point, the line, the angle, the surfaces and the solid body. The point is unique of its kind. And the point has neither height, breadth, length, nor depth, whence it is to be regarded as indivisible and as having no dimensions in space. The line is of three kinds, straight, curved and sinuous and it has neither breadth, height, nor depth. Hence it is indivisible, excepting in its length, and its ends are two points. The angle is the junction of two lines in a point.

43. A point is not part of a line.

44. OF THE NATURAL POINT. The smallest natural point is larger than all mathematical points, and this is proved

because the natural point has continuity, and any thing that is continuous is infinitely divisible; but the mathematical point is indivisible because it has no size.'

Though a (mathematical) point is indivisible, without dimensions in space, and 'not part of a line', a 'line is a length produced by the movement of a point, and its extremities are points. It has neither breadth nor depth. A surface is an extension made by the transversal movement of a line, and its extremities are lines. [it has no depth] A body is a quantity formed by the lateral movement of a surface and its boundaries are surfaces.' It has length, breadth and depth. A surface he calls 'the limitation of the body and the limit of one body is that which begins another; that which is not part of any body is a thing of naught [niete], ' something which fills no space (occupies nothing [niete occupa].'

So from a point which is 'indivisible, occupies nothing [niete occupa]' and so does not exist (is nothing) [niente sono] we get the line, surface and body. Yet since 'the limiting surface of one thing is the beginning of another...[t]hat which is no part of any thing is called no-thing [niente]. That which has no limitations has no form. The limits of two coterminous bodies are interchangeably the surface of each' ...so 'none of the surfaces of a body are parts of that body...because among us bodies are not formed of incorporeal things...the contact of the liquid with the solid is a surface common to both...the surface does not form part of either-it is merely a common boundary... What is it therefore that divides [the liquid from the solid and] the air from the water?' It [the surface] is 'without substance...[without] divisible bulk. Since the surface is indivisible nothing separates these bodies the one from the other. Every body is surrounded by an extreme surface...full of infinite points. Every point makes a ray made up of infinite separating lines [The line has in itself neither matter nor substance and may rather be called an imaginary idea than a real object; and this being its nature it occupies no space].' We therefore create the lines [imaginary ideas], surfaces and bodies that we see, and so really it is 'nothing that separates these bodies one from another.' 'Among us bodies are not formed of incorporeal things...the contact of the liquid and the solid is a surface common to both...but not part of either.' It is the nothing that we see that separates them. It both is and is not [or something-and-nothing else], substantive noun and pronoun pointing to something without substance and indivisible, the perspective of points, lines, surfaces and bodies that is something great, the greatest of the great thing-making things that are among us, but in themselves occupy no space, are indivisible and without substance. Or so it seems he thinks about nothing, nulla and niente, like this. Nothing is not just nothing.

'Consequently the part of nothing not having anything except the name and not substance, this part is equal to the whole, so that by this we conclude that the point and the line are equal to the surface [which is nothing].' So nothing separates things.

A hundred years later, another myriad-minded man was thinking about nothing, if we can safely assume he thought seriously about what he said and did when he gave himself and his characters so much to say about nothing in all its forms. Whatever, he makes us think about nothing in all his plays and much of his poetry. 671 times the word appears in his collected works, and at significant points, often with multiple meanings. In the top two-hundred words used by him, it comes in at one hundred and eight-fourth, but most of those proceeding are simple connectives, articles, conjunctions, prepositions and pronouns. Among nouns it is in the top thirty, among pronouns the top twenty, and the longest of both. There is almost too much ado about nothing in Shakespeare, ironical and comic as well as deadly serious, and like Leonardo, nothing is something and nothing not easily accessible to straightforward logical analysis. It is not intended to, of course, not being straightforward philosophy, and at times appearing critical of it, as in Hamlet's remark to Horatio about 'more things in heaven and earth ...dreamt in our philosophy' (1.5.843) and Romeo's attack on philosophy as Friar Laurence sees it ('Adversity's sweet milk')(3.3.1855). yet Shakespeare, like his Iago, is 'nothing, if not critical' (2.1.892) with everything he says, offering to virtually every point of view a counter-point or contrary position. There is not time or space here to do justice to his thinking about anything, but a few examples will be given to try and show the importance he gives to thinking about nothing.

King Lear's whole plot and action develops from Lear's daughter Cordelia's reply to his question 'what can she say' about her love for him. All she can say to him is 'Nothing', though we already know she has decided to 'Love and be silent.' (1.1.67)

'Nothing?' he replies. 'Nothing,' she says again, to which Lear responds with the truism, 'Nothing will come of Nothing. Speak again.' Her response is a model of honesty ('Unhappy that I am, I cannot heave my heart into my mouth. I love your Majesty according to my bond, no more, no less.') but it doesn't satisfy Lear, cannot satisfy him, while he judges the love of his daughters according to what they say, and rewards them with land and wealth accordingly. A parallel course is taken by his Duke of Gloucester and his sons. Gloucester finds his son Edmund reading and asks him what it is? 'Nothing' replies Edmund. 'No?' says his father, then why 'the terrible dispatch into your pocket? The quality of nothing hath not such need to hide itself. Let's see: come; if it be nothing, I shall not need spectacles.' Yet soon he shall need more than spectacles: he'll need eyeballs, having fallen into his son's trap to remove his other son from his inheritance and favor, and take over the dukedom and the kingdom. In play after play Shakespeare takes this common word in common expression and gives it very uncommon meanings and use. It ceases to be simply nothing and becomes something else, something almost magical in power. Was it perhaps never just a word, not a thing at all? Nothing does come of 'Nothing', for Cordelia initially, and then for Lear. He becomes a nothing, less than a fool, says his fool, for at least he is a fool, but Lear becomes his own shadow and a zero, after being the prime number one, the king, now 'an O without a figure' (1.4.706). Only when he meets the outcast, naked, 'the thing itself...' 'a bare, forked creature,' does he come to realize what 'nothing' really means, and it not just nothing material.

Romeo also falls into 'so deep an O' with Juliet, who 'says nothing, but weeps and weeps.'⁵ Othello, Orsino, Orlando, Olivia, Hero, Ophelia, and virtually all his major characters fall into one kind of 'O' or another. Of Ophelia in her madness it is said, "Her speech is nothing, yet the unshaped use of it doth move the hearers to collection; they aim at it, and botch the words up fit to their own thoughts, which as her winks, and nods, and gestures yield them, indeed would make one think they would be thought, though nothing sure, yet much unhappily." (4.5. 2752). What does she say? 'O, how the wheel becomes it!' is a repeated part of it. Her brother responds, 'This nothing's more than matter.' What is the matter? Hamlet, of course, who wants to lie upon her lap, and she says no, and he thinks she thinks he means 'country matters,' and she says 'I think nothing.' 'That's a fair thought to lie between maid's legs,' he responds. Which thought, she wonders. 'Nothing' he says. Here, of course, 'nothing' has a sexual meaning, parallel to 'thing', which though practically without any specific meaning, and able to replace any other noun, is used much less in Shakespeare, 125 times less than 'nothing.' But can we say it has only a sexual meaning even here? She suggests he is joking, being merry, but he denies it. 'O, God, your only jig-maker!... O heavens!... For O, for O, the hobby-horse is forgot! Sex and death and other things (or nothings) ...but nothing for sure.

Think about the effect of Hamlet's remark to Rosencrantz and Guildenstern taken out of context: 'there is nothing either good or bad, but thinking makes it so.' (2.2.1350)

Editors and commentators are usually keen to assure us it was merely a proverbial commonplace about the language of morality and not its essential nature. But with that 'nothing' linked to 'it' (and free-floating at the end of the line in the text) 'it' moves from being simply adverbial or adjectival in function to serving like a substantive noun or pronoun. The implication is that there is nothing essentially good or bad in nature or the world, but only our thinking making it good or bad. Whether thinking anything can by itself have any physical or moral effect on the world is one of Hamlet's central concerns, and is surely part of his problem in acting on the commands of what may be something he has thought up himself, i.e., his father's ghost. The opening line, 'Who's there?' is directly answered by the final one, 'Go, bid the soldiers shoot.' Thought and action are at war throughout the play. Out of nothing perhaps-Barnardo the sentry says he has 'seen nothing' and tonight he thinks he does see something again, 'in the same figure, like the King that's dead.' The audience see it too, or think they do.

Hamlet, who earlier had thought himself a dull, muddy-mettled rascal' who can 'say nothing, no, not for a King',

now gives Fortinbras his 'dying voice...the rest is silence,' he says. It is Fortinbras who bids the soldiers shoot after the final carnage of the play.

Thinking clearly has a vital part to play in deciding what is good or bad, but the 'nothing' he is thinking about when he says the world is a 'goodly' prison is more than any trite nihilism or subjectivism. It is a lure for drawing out the fatal consequences of his friends' traitorous thinking, and serves as the first step in an ingenious *reductio ad absurdum*, which ends with the ironic conclusion, 'By my fay[th], I cannot reason.'

'The king is a thing,' he tells them, 'a thing of nothing,'(4.2.2659) and so it is not surprising so many of Shakespeare's kings come to nothing while still alive: Richard II, for example, says he 'must nothing be...' and 'nor I, nor any man that but man is, with nothing shall be pleased, till he be eased with being nothing.'(4.1. 201; 5.5 38) His Queen Margaret, in her anxiety for him, 'with nothing trembles...' "as though on thinking on no thought I think, makes me with heavy nothing faint and shrink.'(2.2.964, 983)

Innogen, daughter of King Cymbeline, says 'I am nothing, or if not, nothing to be were better.'(4.2.2696). Richard III aims, by seducing the wife of the brother he has murdered, to reduce 'all the world to nothing.'(1.2.418) He achieves the seduction. Macbeth achieves his ambition and concludes 'life's but a walking shadow, a poor player... a tale told by an idiot, full of sound and fury, signifying nothing.'(5.5.28) But what does nothing signify? Shakespeare the tale-teller suggests we think about it. Nothing is not just nothing. Like Leonardo, he thinks it is something as well. Not a concept with reference or sense, for then it wouldn't really be nothing, would it? Yet it is surely something somehow, some kind of great notion, one of the greatest perhaps, both absolute zero and relatively nothing much, a king or queen and a beggar of a notion, an outcast, something worth thinking about sometime, and nothing special.

1 The Notebook, transl. 1954, E. McCurdy, p.61

2 The Notebooks of Leonardo da Vinci-- Complete, translated 1888, Jean Paul Richter, 1216).

3 Codex Arundel 289vb

4 See Richter (1888) op. cit.

5 Romeo and Juliet 3.3.1968, 1977.

1 The