Can the Nozickean Proviso Guide *Homo habilis*: Cognitive and Evolutionary Criticism of the 'Historicity' of the Entitlement Theory

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Abstract

Robert Nozick claims that we should apply the principle of initial acquisitions of just holdings in historical instances. In this thesis, I argue that the proviso for the principle of initial acquisitions of just holdings which Nozick suggests, cannot be an action-guiding principle at the stage of *Homo habilis* and *Homo rudolfensis* and this alters the claim that the Entitlement Theory is a 'historical principle'. Considering this central claim, I explore the social and cognitive capabilities of *Homo habilis*, *Homo rudolfensis*, and *Homo ergaster*, in order to construct the historical instance of early hominid social life. Secondly, I give account of their mindreading ability based on mental simulation. By means of these, I argue that *Homo habilis* and *Homo rudolfensis* were cognitively incapable of being guided by the Nozickean Proviso, whereas *Homo ergaster* would have been capable of understanding it. Thus, this issue puts limits on the accessibility of the Entitlement Theory to all historical instances. Ultimately, I conclude that limitations of the Nozickean Proviso alter the claim of historicity of the Entitlement Theory.

Key Words: Robert Nozick, Entitlement Theory, Nozickean Proviso, Property, Distributive Justice, *Homo habilis, Homo ergaster*, Theory of Mind, Mindreading, Mental Simulation.

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Introduction

Robert Nozick in, "Anarchy, State, and Utopia" (ASU, Nozick 1974) defends the claim that the state should only have "the function of protection against force, theft, fraud, enforcement of contracts, and so on" (p. ix). In this case, he opposes any other justifications of the state, which are aimed to extend its functions. Accordingly, any theories, such as liberalism or utilitarianism, will support many enforcement rights, which are against the basic liberties of men. His project of the 'minimal' or 'night-watchman state' is constructed on the rights of property and individual freedom. His conception of the minimal state turns out to be a 'dominant protection agency', which protects the rights¹ of its clients. In this big framework of the minimal state, Nozick also gives an account for distributive justice; namely the Entitlement Theory. By means of this, Nozick wants to disregard many roles of the State that we can observe in liberal theories. For instance, most significantly, the coercive power of the State concerning redistributive justice is one of the elements of the State that Nozick wants to reject. In this work, I will examine one of the components of Nozick's Entitlement Theory; namely the Nozickean Proviso for the initial acquisition of just holdings.

For the Entitlement Theory, Nozick underlines that his theory is a historical principle. This claim suggests that the need for redistribution of properties and the legitimacy of acquisitions of properties should be evaluated by looking at instances of transactions and appropriations of property in the past. In this thesis, the issue is not going to capture the entire Entitlement Theory, but to concentrate on one of the principles of the Entitlement Theory. The Nozickean Proviso that is suggested for the legitimate appropriation of the un-owned property will be the subject of discussion.

¹ Here basically Nozick considers the rights to holdings, self-autonomy and the rights to participate to the freemarket.

The past is an odd concept but it is not the issue to be solved in this thesis. One can claim that the important part of the history for political philosophy starts with the emergence of State. However, it cannot be considered explicitly sufficient for Nozick's claim of historicity. In this case, the work of this thesis will bring a new domain of perspective for our investigations of the past. In this thesis, I am going to bring back some of the first actors in the history of evolution of human specie into the issue here. These early hominids, our ancestral relatives; namely *Homo habilis, Homo rudolfensis* and *Homo ergaster*, will be the actors of the instance of past that I will examine in this thesis.

These ideas are mainly derived from the following worry. In order for us to examine the initial acquisitions of property, we have to be sure that agents of the given instance would have been capable of understanding the provision. In this case, while putting aside all of the discussion concerning the conception of past, I am going to examine the cognitive and social capabilities of these early hominids. Ultimately, the hypothesis of the thesis is: if these early hominids wouldn't have been capable of understanding of (so to be guided by) the Nozickean Proviso, then the claim of historicity is not sound. According to this hypothesis, my central claim of the thesis will be the following. *Homo habilis* and *Homo rudolfensis* are cognitively incapable of understanding the Nozickean Proviso. It follows that they wouldn't have been capable of being guided by the Nozickean Proviso. Therefore, the claim of historicity of the Entitlement Theory is altered by the Nozickean Proviso because of its inaccessibility to the stage of *Homo habilis* and *Homo rudolfensis*.

This work is based on inter-disciplinary research, which is fed by archeological, anthropological, evolutionary and cognitive evidences about early hominids anatomy, cognition and social life. At the same time, based on these empirical data it provides a philosophical argumentation concerning the Nozickean Proviso in relation to the mental and social capabilities of these early hominids. In this respect, this work reflects two important features, one of which is important for evolutionary psychology, and the other is important for political philosophy. For the former we will see that there is a cognitive breakthrough after the evolution of bipedalism in the stage of *Homo ergaster*, which is morally significant for their social life. After bipedalism, hominids would have started to have access to their own mental states by introspection and thus would have been better off advancing in inter-personal relations. Following this, for the latter, we will see that such studies can be good examples of testing political theories because of the limited mental requirements of agents in the scope. To anticipate this, we can claim that if a theory has an element of historicity, and if it is applicable to early hominids, then the theory may well be applicable to more recent periods of past. However, these side-results of the thesis will be nothing more than mere anticipations and speculations derived form the conclusions in the thesis. In this case, they, indeed, need further study and research.

The thesis consists of four chapters. The opening chapter is the critical analysis of the Nozickean Proviso, divided into two main sections. In the first chapter, I will construct the adequate structure of the Nozickean Proviso. In the first section (1.1), I will compare the Lockean Proviso and the Nozickean Proviso and explain Nozick's criticism of John Locke's 'mixing labor' criteria. In the second part of the first chapter (1.2), I will critically discuss Nozick's understanding of his provision and provide G. A. Cohen's criticism concerning Nozick's misleading structure of the Proviso.

In the second chapter, I will describe *Homo habilis*'s, *Homo rudolfensis*'s and *Homo ergaster*'s anatomical, cognitive and social features providing empirical evidences from archeological and anthropological studies. Ultimately, I will describe the important cognitive and social features of these early hominids. Secondly, the crucial difference between *Homo ergaster* and *Homo habilis/rudolfensis* is going to be emphasized as well. This section will be divided into five sections. The first section (2.1) is going to be about the tool making

capability of *Homo habilis/rudolfensis*. In the second part (2.2) I am going to describe the communicative capabilities of the former early hominids. Thirdly, (2.3) the evolution of bipedalism and its impacts on *Homo ergaster* will be discussed. Fourthly (2.4), I will look at the social life in the stage of these early hominids. Finally, (2.5) based on these features, I will conclude that, first, these early hominids were capable of using a theory of mind capability, and second, *Homo ergaster* differs from *Homo habilis/rudolfensis* in terms of effects of bipedalism.

In the third chapter, I will examine the capability of mindreading of these early hominids based on two simulation models. In the first part (3.1), I am going to give a brief explanation of the Simulation Theory of Mind in general. In the second part (3.2), I will critically examine Alvin Goldman's account of simulation and raise the problem of introspection. Next (3.3), I am going to look at Robort Gordon's radical simulationism and raise the objection concerning future-directed prediction. Finally (3.4), I will conclude that Goldman-style simulation can explain *Homo ergaster*'s mindreading capability, whereas Gordon-style can explain *Homo habilis/rudolfensis*.

The final chapter will be the examination of the Nozickean Proviso by applying it to the period described in the second chapter. The first section of the chapter (4.1) is going to be the argument concerning the legitimacy of this application. In the second part (4.2) I am going to examine the structure of the Nozickean Proviso and the account for the understanding of the Proviso by these early hominids. In this case, I will use the two simulation models of mind reading evaluated in the third chapter. Finally, and conclusively (4.3), I will claim that *Homo habilis/rudolfensis* couldn't have been guided by the Nozickean Proviso due to their lack of ability in mindreading. Ultimately, this will show that the claim of historicity of the Entitlement Theory is altered by the inapplicability of the Nozickean Proviso at the stage of these early hominids.

1. Robert Nozick's Principle of Initial Acquisitions of Just Holdings and the Nozickean Proviso

In Chapter 7 of "Anarchy, State, and Utopia" (Nozick 1974) Nozick attacks those theories which are claimed to have an unjust criterion for the distribution of property in society (i.e. Rawlsian and utilitarian theories), and presents his defense of Entitlement Theory. In this chapter, I will look at one of the components of the Entitlement Theory, which is the principle of initial acquisition of just holdings. Accordingly, my aim is to examine the provision for the principle that Nozick suggests to us. In this case, two main issues will be discussed here. First, I will evaluate differences between the Nozickean Proviso and the Lockean Proviso, in which case Nozick objects to the 'mixing labor' criteria of the Lockean Proviso. Secondly, I will critically discuss that Nozick confuses his own provision. Ultimately, I will end up with the adequate interpretation of the Nozickean Proviso, which will be the Nozickean Proviso for this entire paper.

Nozick says that justice in holdings has three major components. Firstly, there is the *original acquisition of holdings*, which is the appropriation of unowned externality: "This includes the issues of how unheld things may come to be held, the process, or processes, by which unheld things may come to be held (...) We shall refer to the complicated truth about this topic as the principle of justice in acquisition" (Nozick, 150). Secondly, there is the *transfer of holdings*, which means to be the transition of property from one person to another. Nozick says, "Under this topic come general descriptions of voluntary exchange, and gift and (on the other hand) fraud, as well as reference to particular conventional details fixed upon in a given society. The complicated truth about this subject we shall call the principle of justice in transfer" (Ibid.). Finally, there is *the rectification of injustice in holdings*, which is used for the rectification of unjust past transfers of holdings or initial acquisitions of holdings.

injustices done in them, and information about the actual course of events that flowed from these injustices, until the present, and it yields a description of holdings in the society" (Ibid. 152). So, for Nozick if a person acquires a holding entirely in accordance with the first two, then he is entitled to that holding. And if there is an entitlement which is not accordance with these two principles of just holdings, then it should be rectified in accordance with the principle of rectification.

Before dealing with the principle of initial acquisition of holdings, I will first outline the distinction between the '*historical principles* and *end-result principles*', which is very important for Nozick because he wants to argue against other theories of distributive justice by accusing them for being '*end-result principles*'. Nozick claims that the entitlement theory of justice is a historical principle. This means that it looks for the process by which distribution came about. On the other hand, end-result principles deal with the distribution by how things are distributed. For the latter a patterned principle determines how things are distributed (Ibid. 153-154). As an example of the latter, an egalitarian would examine a distribution of property by looking at the current distribution and determine who gains what and then apply an egalitarian principle in order to redistribute property.

On the other hand, a historical principle will look at past instances and actions of people when they acquire some property. Nozick thinks that because people might have acquired property justly, they are entitled to property, and the present inequality of holdings may not indicate that there is an injustice in holdings. Similarly, if there are instances in the past that show that an injustice took place when there was a transfer of holding, then we can rectify it not because there is unequal share in the present situation but historically there was an instance of injustice in the acquisition, or transfer of that holding (Ibid. 155). It is I think fair enough to see the distinction between these two types of principles.

Accordingly, because Nozick gives us the right to inquiry historical instances of transactions, it should not make any difference whether we inquire into a period 2 million years ago, when our first ancestors started to live, the year 1850, or today. However, there is an important factor to be cautious about. In such a historical approach one should avoid kind of anachronism that is to apply a concept to a past instance regardless of the temporal chasm between now and then (Rorty, Schneewind, and Skinner 1991, 12). At the first glance, it seems that examining the Nozickean Proviso in a historical context is an anachronistic approach. One may object by saying that 2 million years ago people would have had no awareness of such a proviso and thus we cannot determine initial acquisitions then by appealing to any proviso provided in recent times. However, this problem does not involve any difficulty for our purpose here. Firstly, this issue here is not to judge the property transactions at that referred time period, instead the issue is to examine the evolutionary and cognitive capabilities of early hominids that can allow them to be guided by the Nozickean proviso at that time period. Secondly, this criticism of anachronism may be raised to the Entitlement Theory in general but it can lead us to another debate, which I will not discuss here.

Another objection – a most important one – will be raised about the boundaries of this historicity that is involved in the Entitlement Theory. One can say that, the Entitlement Theory can only be applied to people who are already capable of having a sense of justice and morality - in general, of being a political agent. Considering this demand on boundaries of the applicability of the Entitlement Theory, *Homo habilis* might not be considered as a political agent. By means of this, it can be said that *Homo sapiens sapiens* or even nearer ancestors of us can be in the scope, but not *Homo habilis*.

Next Chapter will provide archeological, anthropological and evolutionary evidences and reasons for why we can include *Homo habilis* in our domain of concern here. However,

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before coming to that, we have to see what exactly the principle of initial acquisition and the Nozickean Proviso are.

1.1. The Principle of Initial Acquisition of Just Holdings

Nozick considers the explanation of the initial acquisition as "adding a bit of complexity into the entitlement theory" (Ibid. 174). However, he does not suggest a new principle of initial acquisition; rather he adapts Locke's theory of acquisition. He says that the principle of acquisition "is best approached by considering Locke's attempt to specify a principle of justice in acquisition" (Ibid.). Even if he thinks that the best approach is Lockean, he does not take the Lockean provision as granted. Apparently, Nozick objects to some points of the Lockean account and modifies it accordingly. At this point, before dealing with Nozick's understanding of the Lockean proviso, I first want to briefly explain Locke's property rights and the Lockean proviso.

1.1.1. John Locke's Property Rights and the Lockean Proviso

In "The Second Treatise of Government" (ST, Locke 1980) Locke talks about property rights by saying that the world is initially 'given' to men in common (ST, I: 1). That means that initially no one has a right to announce his ownership over anything and that makes the world initially un-owned. However, he continues and claims that men have 'reason to make use of it [the world] to the best advantage of life and convenience' (ST, V: 26). In the following proposition Locke holds that because man is rational in that sense, he has a property in his own person; 'this nobody has any right to but himself'. So, Locke considers man as 'self-autonomous'² in the sense that man as a rational being has a right to preserve himself and a right to use nature by means of his own duties. Thus, he concludes, "Whatsoever, then,

 $^{^{2}}$ Not to overwhelmingly extend the paper, I do not want to fall into a discussion that may argue what 'selfautonomy' means. I will leave that phrase odd not to emphasize on it. Any argument from this phrase is tolerable for the paper.

he removes out of the state that nature hath provided and left it in, he hath mixed his labor with, and joined to it something that is his own, and thereby makes it his property, [...] at least where there is enough and as good left in common for others." (ST, V: 27) So, even if the world is initially not owned by anyone, Locke thinks that labor and work of rational man gives rights to the man to own the things that are joined to his own labor as long as he left enough for other people for performing their own labor with the world. Ultimately, this is the Lockean proviso, which has two main components: (a) 'mixing labor' and (b) 'enough and as good left in common for others'.

Then he continues by saying that laboring is the case in which the private and the common property are distinguished. Labor gives man the right to have private property because man, when he is laboring, adds something more to nature and ultimately it makes the land his own property. (ST, V: 28-29)

Now we can ask what does Locke mean by the idea of mixing labor with un-owned land? In this case, as Nozick contends, there could be two possible objections and concerns about the idea of 'labor-mixing'. First of all, "If a private astronaut clears a place on Mars, has he mixed his labor with ... the whole uninhabited universe or just a particular plot" (Nozick, 174). The point here is that what is the extent of mixing the labor with the material in question? What distinguishes the land in use and the rest of it? If I appropriate an un-owned mountain, do I have also the right to have the trees on it? As Rousseau puts it,

Secondly, we may ask whether I own a material by inextricably mixing some of my property with that material. Nozick asks, "If I own a can of tomato juice and spill it into the sea so that its molecules mingle evenly throughout the sea, do I thereby come to own the sea,

When Nuñez Balboa stood on the shore and took possession of the southern seas and of South America in the same of the crown of Castile, was that enough to dispossess all the inhabitants and to exclude all the other princes of the world? If so, such idle ceremonies would have had no end; and the Catholic King might without leaving his royal chamber have take possession of the whole universe, only excepting afterwards those parts of his empire already belonging to other princes (Rousseau 1954, 67).

or have I foolishly dissipated my tomato juice?" (Nozick, 175) I think Nozick's worry is quite plausible. However, Locke has another idea to fix that problem, because otherwise the rights of appropriation would have been extremely weird.

This next step is as Jonathan Wolff points out the following: "One special feature of course, is that in the normal course of things 'mixing your labor' with something makes it more valuable, or, at least, more useful. Locke does indeed attempt to add weight to his justification of the appropriation of property by appealing to this consideration" (Wolff 1991, 103-4). In this respect the former concern about Locke's view may be met. This is simply because, for the case of the astronaut, we can say that when he cleans a piece of land on Mars, he doesn't either make the entire universe valuable, or the whole planet. His labor may give value to the extent of what he cleans and nothing more. For the case of the tomato juice, I think Locke would say that the man, who acts in this way, makes a big mistake by wasting his tomato juice when he spills it into the sea³. That is because his action gives no more value to the sea. This is not because the proviso is not satisfied but because the action in question is not an appropriate type of action to be considered as 'mixing labor'.

According to these worries, Nozick thinks that how appropriation come about is irrelevant, (so as the 'mixing-labor' criterion') and what is important is the impact of appropriation on other people. Nozick thinks that there is an ambiguity of the former. He asks, "Why isn't mixing what I own with what I don't own a way of losing what I own rather than a way of gaining what I don't?" (Nozick, 174-5) This means that adding a bit of value by mixing the labor does not necessarily permit one to own the thing. In this case, just like in the tomato juice case, 'mixing labor' cannot be an appropriate criterion for legitimate acquisition of property. It is simply too ambiguous to determine the balance between the value added to the material and the quantitative threshold for this, which is needed for the evaluation.

³ Here, it is clear that this action does not conflict with the proviso. However, this specific action is simply inconsistent with Locke's understanding of the mixing labor with the land (See. ST, V).

1.1.2. Nozick's Interpretation of the Lockean Proviso and the Reconstruction

Nozick prefers to bypass this criterion of 'mixing labor' and stick to the criterion of 'enough and as good left in common for others'. For the latter, one can legitimately appropriate a certain amount of x, if there will surely be enough left for the others. Even if the appropriator has got the whole amount of it, this would make the situation better for others by counterbalancing the loss of right to appropriate that x (For instance, by compensating them with money). In this case, how the appropriation came about is less important than whether the situation of others worsens by the appropriation of that particular appropriation (Ibid. 175). This is for Nozick one legitimate way of putting the Lockean proviso ('enough and as good left in common for others'). So, if one's appropriation is worsening my situation, then I have the right to object to that appropriation. This is basically, what Nozick takes as his proviso. He says, "Locke's proviso that there be "enough and as good left in common for others" (sect. 27) is meant to ensure that the situation of others is not worsened" (Ibid.).

To understand the extension of this new notion of the Proviso, we should first look at Nozick's argument on page 176 in ASU called the 'zipping back' argument. Let's assume that the first man Z who is in a situation in which for him not enough and as good was left to appropriate. In this case, the last person, whose appropriation left Z without the chance to appropriate, actually worsens Z's situation. Therefore, Y's appropriation is illegitimate under the Lockean Proviso. Then, the next to the last person X, who appropriates while leaving Y in a worse position, is also not permitted to appropriate. Ultimately, with this logic, if we go back to the first person A, his appropriation is a permanent one because, following the proviso, there is no other person for A to make the situation worse for (Nozick, 176). One consequence for this argument, which Nozick criticizes, is that we can conclude that the proviso cannot be applied to all instances of appropriation but only to the initial one. However, if this is the case, and also if we avoid the 'labor mixing' criteria, then we can think why and how the appropriation of property in the initial stage can be legitimate. Concerning this we can refer to Benjamin Tucker's following conclusion: "It should be stated that, however, in the case of land, or of any other material the supply of which is so limited that all cannot hold it in unlimited quantities, Anarchism undertakes to protect no titles except such as are based on actual occupancy and use" (Quoted in: Wolff 1991, 108). Apart from Tucker's individualist anarchist views, the worry here is that intuitively an appropriation of a limited material must be limited because initially everyone has the right to appropriate. In this case no one could have a better title to appropriate more than others, but all can have the equal liberty to use it. This worry is about being skeptical about the necessity of private property in order to have better account of distributive justice.

Contrary to this, Nozick wants to establish unlimited rights to property. He thinks that the argument from zipping back is too quick. He adds the following concerns to legitimize the property rights of appropriation. He makes a distinction between two forms of Lockean proviso. One way of worsening another's appropriation is 'by losing the opportunity to improve his situation by a particular appropriation or any one'; and secondly 'by no longer being able to use freely what he previously could' (Nozick, 176). Nozick calls the latter the *weaker* form and the former is the *stringent* form of the proviso. Nozick thinks that the *weaker form* of the proviso is appropriate for his entitlement conception of justice. This is so because only the weaker form of the proviso can solve the regress problem in the zipping back argument. In the case of the weaker form even if one could not appropriate any more or no more, one may have another types of opportunities to make one's situation better. In this case, even if there is not enough and as good for other persons, there would be other things which 'counterbalance the diminution in opportunity' (Ibid.) raised by the foregoing appropriation. His point with regard to the 'counterbalance the diminution in opportunity' is the following:

Here enter the various familiar social considerations favoring private property: it increases the social product by putting means of production in the hands of those who can use them most effectively (profitably); experimentation is encouraged, because with separate persons controlling resources, there is no one person or small group whom someone with a new idea must convince to try it out; private property enables people to decide on the pattern and types of risks they wish to bear, leading to specialized types of risk bearing; private property protects future persons by leading some to hold back resources from current consumption for future markets; it provides alternate sources of employment for unpopular persons who don't have to convince any one person or small group to hire, and so on (Nozick, 177).

It is important here to note that Nozick does not defend the utilitarian principle favoring of private property. He claims that these facts about the beneficences of private property in order to support the Lockean conception of "enough and as good left over". This claim refers back to counterbalancing 'the diminution in opportunity' by saying that these benefits of a system of private property can provide sufficient counterbalancing for the loss of people who are left with less or no property at all.

From here all we can see is that the Nozickean adaptation of the Lockean proviso says that appropriation of something will be illegitimate if it worsens another person's situation and would have no effective benefit for the system⁴. If this explanation is satisfactory, we can look at what is misleading in Nozick's own understanding of the Proviso.

1.2. Clarification of the Nozickean Proviso

In the previous section, I pointed out Nozick's distinction between the weaker form of the proviso and the stringent form of it. The following definitions are the weaker and stringent forms of the proviso:

<u>The weaker form W</u>: "X must not cause Y to lose the opportunity to use freely what he previously could".

⁴ From the quote above we can infer this. Nozick means to say that all of the consequences of a given appropriation should be considered in order to determine whether this appropriation worsen another or not. In this case if a particular appropriation improves system of private property such that it has similar effects as the ones listed above than this particular appropriation can be said to be legitimate, regardless of the other's loss of opportunity to appropriate.

<u>The stringent form S</u>: "W (X must not cause Y to lose the opportunity to use freely what he previously could) and (S1): X must not cause Y to lose the opportunity to improve his situation by a particular appropriation or any one, unless something counterbalances the diminution in opportunity".

G. A. Cohen against Nozick has raised the argument here (Cohen 1986, 120, footnote 17). He thinks that, first; S1 in the stringent form differs from W in three different ways. Firstly, S1 focuses on Y's opportunities to appropriate things, on the other hand W focuses on the opportunities to use them. Secondly, S1 requires Y's being not to lose possible opportunities to improve his situation; unlikely W does not require any possible improvement in Y's situation, instead of this it just prohibits any possible worst off situation that Y may encounter then.

Finally, S1 has a compensation clause, and W has not. For the third distinction, Cohen argues that W is weaker than S not because it does not contain a compensation clause, but it is weaker because W is a conjunct of S. The reasons are the following. The compensation clause in S1 only satisfies S1 without satisfying W which means that the compensation that Nozick thinks stands for any possible worsening situation, in which Y should be compensated. In this case Cohen thinks that Nozick confuses the distinction between W and S1. Ultimately, Nozick's distinction is actually between W and S2, which is S1 without its compensation clause:

(S2): X must not cause Y to lose the opportunity to improve his situation by a particular appropriation or any one.

Cohen gives three reasons why Nozick confuses his distinction. On page 176 in ASU, Nozick tries to avoid the regress argument by giving the distinction between W and S. He thinks that the stringent form creates a regress, but that W does not. However, as Cohen clearly states, the compensation clause of S prevents the regress (Cohen 1986, 121). In this case, S2 would create regress, but S does not. Recalling the regress argument, the problem was about how to prohibit the last appropriation, which is about the last bit of property. In this case, if we look at S1 (so as S), it provides a compensation, which will work for those who cannot appropriate anymore. However, S2 cannot trigger the regress. It is simple because any appropriation in the initial stage will be a lost in opportunity for the others to improve their situation.

Secondly, on page 178 in ASU, Nozick says, "I assume that any adequate theory of justice in acquisition will contain a proviso similar to the weaker of the ones we have attributed to Locke". However, the proviso on page 178⁵ is not W but rather S1, which includes the compensation clause. In this case, Nozick would have referred neither to the weaker form nor S2 but S1 (so S) in this passage. Therefore, Nozick again confuses his distinction.

Finally, Cohen powerfully claims that the weaker form of the proviso prevents the transformation of all common land into private property, while some end up with no private property (Cohen 1986, 122). However, in Nozick's capitalist system it is defensible that some people will end up with no property because the system will compensate the loss of the propertyless people⁶. Unfortunately, not the weaker form but the stringent form of the proviso can express the idea of compensation. For instance, imagine a mine, in which a good reserve of chemical sources has been found. In this situation imagine two persons –for simplicity, one of which is a scientist and other is a farmer. The scientist has appropriated the mine, while he knows that by appropriating the mine he will cause the farmer to lose the opportunity to use the mine freely –which he previously could use. In this case, from the passage in ASU p. 177, we can say that the scientific work of the scientist by using these resources will be an indirect

⁵ Nozick says; "Someone whose appropriation otherwise would violate the proviso still may appropriate provided he compensates the others so that their situation is not thereby worsened; unless he does compensate these others, his appropriation will violate the proviso of the principle of justice in acquisition and will be an illegitimate one" (Nozick, 178).

⁶ See the quotation on pages 13.

compensation for the farmer because the farmer will benefit the good consequences of these scientific researches. However, in order to satisfy such compensation Nozick should have appeal to the stringent form and not the weaker form of the proviso. Thus we can conclude that Nozick needs S1 (so S) rather that W.

Ultimately, we will conclude that the proviso that Nozick wants to establish is the stringent form. As we saw, even if he says that he needs to buy into the weaker form of the proviso, he actually uses and needs the stringent form of the proviso because of the necessity of the compensation clause. Hence, we can legitimately and freely use the stringent form as the Nozickean proviso.

1.3. To Tie Up

In this chapter, I've defended the view that the Nozickean view diverges from the Lockean Proviso not in a slight but in a very strong way. In this case, it is important to pinpoint here again that Nozick rejects the idea of "labor-mixing" as a condition for his proviso because he finds it problematic for his theory of distributive justice. In order to do this, he adds other conditions, which make the Proviso much stronger and elaborated than the Lockean Proviso. Furthermore, I've suggested that Nozick confuses himself about the stringent and the weaker form of the proviso. Contrary to his claim, he actually defends the stringent form and not the weaker form of the Proviso instead of the weaker form because it serves the Nozickean ideas more consistently than the weaker form. Ultimately, the Nozickean Proviso is: "X must not cause Y to lose the opportunity to use freely what he previously could and X must not cause Y to lose the opportunity to improve his situation by a particular appropriation or any one, unless something counterbalances the diminution in opportunity".

In addition to this, I've mentioned Nozick's distinction between the "historical and the end-slice principles". In this case, there might be an open question to discuss his defense of the Entitlement Theory as a historical principle. However, such discussion is not the issue of this paper. I am basically relying on Nozick's claim in the sense that we have to or are allowed to apply the Proviso in an instance of past providing sufficient data for property transactions. In this case the rest of the paper will rely on these two concerns about the Nozickean Proviso, so that any other issue concerning the Entitlement Theory is not a topic of this paper⁷.

⁷ I am simply discarding problems concerning the notion of 'private property', 'self-autonomy', and 'problem of base-lines'. For these problems see: Steiner 1977; 1981.

2. A Past Instance: Homo habilis

In this chapter I will examine three different actors – *Homo rudolfensis, Homo habilis, and Homo ergaster,* in the evolution of human specie, who had lived in period between 2 million and 1.5 million years ago. According to archeologists these three actors are the first members of the Homo Linage and they followed *A. africanus* which had lived 2.5 millions years ago. Even though, it is difficult to differentiate them explicitly, we will see that *Homo ergaster* shows some distinguishing features, which can be considered as a cognitive breakthrough. In this chapter, I will describe the anatomical, cognitive and social features of *Homo habilis, Homo rudolfensis* and *Homo ergaster*. In this inquiry we will see the elements that are necessary to construct our period of the past. These elements are going to be the abilities of tool making, communication, bipedalism and social intelligence. Secondly, we will see the difference between *Homo habilis/rudolfensis* and *Homo ergaster*, which is effected by the evolution of bipedalism. Ultimately, by means of these features of early hominid social life, I will infer to that these early hominids would have had a mindreading capability, which will be the issue of the next chapter.

Homo habilis, until its discovery, was the missing link between the Australopithecus africanus and Homo erectus. Australopithecus africanus was not fully upright and had a much smaller brain than Homo erectus. Furthermore, the ability of Homo erectus's to make complex tools such as hand axes had not been explained accurately because Australopithecus africanus was not capable of making tools. In this case, this great discovery enabled anthropologists to explain the continuity between the closest common ancestor of humans and apes, Australopithecus africanus, and one of our closest ancestors, Homo erectus. So, this was until 1964, when Louis Leakey, John Napier, Philip Tobias named the small-brained but partially bipedal fossil discovered in 1960 at Oldovai, Homo habilis (Gibbons 2006, 93-94). This specimen, known as OH7, is dated to 1.75 million years ago and had a brain size of 674

cubic centimeters. Another important fossil has been found in *Koobi Fora*. This specimen is known as KNM-ER 1470 had a larger brain size, at 775 cubic centimeters, and was named as *Homo rudolfensis* (Mithen 2006, 125). The next key specimen for our purpose is *Homo ergaster*, which was the missing link between *Homo habilis* and *H. erectus. Homo ergaster* lived from 1.8 or 1.7 million years to probably 1 million year ago. The famous fossil of *H. ergaster* is named as the Turkana boy, which is nearly complete adolescent male skeleton. It has been found at *Nariokotome*, Kenya, in 1984 (Tattersall 1995, 187).

2.1. First Clue: Oldowan Industry

Homo habilis was capable of making stone artefacts from nodules of basalt, chert, and from some other materials. These stone artefacts are called the 'Oldowan industry'. These artefacts are characterized by sharp flakes which are detached from the nodules of stone, and by minimally shaped 'chopping tools' that are left behind the tool making processes. These tools are considered to have been used for cutting through the tendons and flesh of animal carcasses. In this case, cut marks on the bones are shown as to be the evidence for this claim. Steven Mithen commented on these findings by saying, "It appears unlikely that the hominids had a particular shape of tool 'in mind' when they were striking one stone against another: they simply needed both sharp-edged flakes and more robust stone implements" (Mithen 2006, 125). Then the question arises here is whether these tools, made by *Homo habilis*, show any difference from the tool use in chimpanzees or the common ancestor 6 million years ago.

It is not so easy to draw an explicit answer to that question. However, there are two important points that can help us to find an answer. First of all, tools made by chimpanzees are from plant material and the *Oldowan* tools are made from stone. It might be seen at first glance that this difference has no importance at all. However, this resource difference implies an important difference in the mental process that is used in manufacture. Regardless of the ambiguity of the specific functions of the *Oldowan* tools, it is clear that some of them are used

in order to manufacture other tools (i.e. stone flakes to sharpen sticks) (Mithen 1996, 96). This use of tools has not been observed among chimpanzees. Mithen says, "It (*making tool in order to make another*) involves holding in one's mind the qualities of two contrasting types of raw material, such as stone and wood, and an understanding of how one can impinge on the other" (Ibid.; Italic part added). This understanding of and contrasting the content in manufacturing can be seen as the first distinguishing element of the *Oldowan* Industry.

Secondly, in the case of chimpanzees' termite stick making process, the task of removing the leaves from the twig is not complicated. In order to poke a stick down a hole, it is necessary to detach the leaves and it is a simple task because the position of these leaves are determined and simple to detach from the twig. On the other hand, the making of stone tools is a more difficult task. In this case, to detach the flakes, *Homo habilis* had to recognize acute angles on the nodules of stone and to employ good 'hand-eye co-ordination' to strike the nodule in the correct place, in the right direction and with appropriate amount of force (Schick & Toth 1993, 118-22. Cited in Mithen 1996). Accordingly, this distinguishing feature of stone tool making implies higher mental capabilities than the mental capabilities of chimpanzees. Consequently, considering these two differences, we can say that *Homo habilis*'s ability to produce stone tools was an important unique step in the human evolution.

These tools show that *Homo habilis* have acquired some kind of technical intelligence. In addition to this, the tools were used for butchering but there is no indication that suggests *Homo habilis* have used these tools for social purposes. This means that there were no tools like toys, weapons that are for maintaining and regulating the social life. Thus, I will conclude that the mind of the *Homo habilis* was not as capable of social intelligence as *Homo erectus* or *Homo sapiens sapiens* would have been. However, this will not indicate that no group living had been involved in *Homo habilis*'s social life. What we can infer from these

is that a notion of property, perhaps private property would have been evolved at the stage of *Homo habilis*.

2.2. Communication in Homo habilis

It seems quite plausible to think that the origins of language evolution are recent innovations in the hominid spectrum. Some scholars believe that language has evolved only 50,000 years ago. However, considering the communication capabilities of primates this hypothesis is at least misleading. So there should be continuity in the evolution of language from its most primitive form to the modern complex languages that we have. Thus, it is plausible to think that kind of primitive (proto) language may have been involved in *H. habilis's* social life. To support this claim, I will introduce two main evidences, one of which is the change in facial anatomy and the other is the evolution of Broca's area in the brain, which implies mirror neuron activity.

Let's start with the first. The change in facial anatomy of *H. habilis* is caused by the change in their dietary trend towards meat eating. By meat eating, the size of teeth and jaws of *H. habilis* has been reduced. Consequently, this reduction has affected the shape and volume of the vocal tract. These changes are important because they make *H. habilis* to use oral gestures in a different range and a greater diversity than its ancestors. However, it is unclear to what extent these oral gestures give access to vocalization and how far the vocalizations of *H. habilis* differ from *Australopithecine* ancestors.

A second indication of *H. habilis*'s communication abilities is the expansion of Broca's area in *H. habilis* brain. The surviving crania findings indicate that the brain size of early Homo was larger than those of earlier ancestors. From some of the specific crania fossils, Phillip Tobias (Tobias 1987, 741-61) and Dean Falk (Falk 1990, 333-81) have inferred an important conclusion. These crania fossils were full of sediment, which are natural cast of the inside of the cranium and are called 'endocasts'. Tobias examined these natural

endocasts of *H. habilis* as well as some other artificially produced endocasts. According to Tobias, these endocasts show that we can infer some specific sulcal patterns that correspond to the Broca's area in the modern human brain. After Tobias, Falk also reported the same results in her studies and in addition to this she argued that in the *australopithecine* endocasts these sulcal patterns are absent. This is important because, first, Broca's area is an area of the brain which plays an important role for motor activity, and secondly, with the recent discovery of mirror neurons, which are located in the Broca's area, it became a very important subject of interest.

Without going into detail here, I will argue that this precursory finding in *H. habilis* endocast indicates that they possessed mirror neurons. This is important because mirror neurons play an important role in the case of acquisition of oral gestures. And, according to Giacomo Rizzolatti and Michael Arbib, "mirror neurons represent the link between sender and receiver that is a necessary prerequisite for any type of communication" (Rizzolatti & Arbib 1998, 188-94). This inference has nothing to do with the level of communication but it emphasizes the importance of mirroring system. Considering this, I will argue for the importance of mirror neurons in the case of communication but more importantly, this presence of mirror neuron system indicates that a theory of mind capability might have evolved by this stage. This latter claim will be examined in the following chapter.

The last thing that should be discussed here is *H. habilis's* grooming capability. To start discussing this, we can first look at another archeological finding that tells us a lot about the possible group size of *H. habilis*. In an area near the Lake Turkana in East Africa in the early 1970s, Richard Leakey discovered a fossilized skeleton of a hippopotamus, which is surrounded by stone flakes and chopping tools. This area is called the Hippopotamus Artefact Site and the findings are dated to 1.6 millions years ago. Mithen discusses this by saying:

One might imagine food-related calls to elicit help from other hominids who could bring stone flakes for butchery – Isaac found that there were no suitable stones for making flakes in the immediate vicinity of the carcass. Quick work would have been essential, as the butchery

of a carcass in a river delta would have exposed the hominids to predators and other scavengers searching for a free lunch (Mithen 2006, 134)⁸.

Quickly, we can infer that *H. habilis* had already started live in large groups and by the communicative calls they had been able to produce informative alarm calls.

From this former point, we can argue that there would have been kinships, friendships, or alliances between both individuals and groups of hominids. Because of the large number and the complexity of social relations, it is suggested that grooming would have started to play an important role in the social life of early hominids. Very briefly, we can observe grooming in the case of non-human primates. These observations show that if one member of the group spends more time grooming another, then the relationship between the two is stronger. So it is suggested that grooming results in social bounding and cohesion. Ultimately, the mainstream theoreticians argue for grooming as the precursory of modern language.

Robin Dunbar (Dunbar 1993, 681-735) and Leslie Aiello (Aiello & Dunbar 1993, 184-93) introduced one of the most well known hypotheses called *the vocal grooming hypothesis*⁹. This hypothesis argues that communication by grooming by the time of *Homo habilis/rudolfensis* was no longer sufficient to make the necessary social bounds because the groups had grown so large (up to 80-90 members). So, considering the relation between the number of individuals in primate groups and the ratio of neocortex size and the size of the rest of the brain, Dunbar and Aiello conclude that *vocal grooming* in ancestral life was essential to explain the social life and they think that the vocal grooming time of *Homo habilis\rudolfensis* was at about the break point in homo linage and was the rudimentary origins of modern language. However, we will see that not until *Homo ergaster* was it possible for the early hominids to have a vocalized language. We will examine the precursory indications of proto-language in the next section.

⁸ See also. Isaac 1989.

⁹ Vocal Grooming: "An expression of mutual interest and commitment that could be simultaneously shared with more than one individual" (Aiello & Dunbar 1993, 187).

2.3. Bipedalism

In the beginning of this chapter I've referred to three specimens; *Homo habilis, H. rudolfensis and H. ergaster* as the scope of the period that we are investigating. Now, in this section it is time to turn our attention to *Homo ergaster*, which has its importance with the evolution of bipedalism. In this section, I will argue that this crucial feature of *Homo ergaster* shows us that this specimen was capable of using a sort of proto-language and was more intelligent than the preceding ancestors. However, to what extent they have these abilities is the question that we should make clear here. In this case, first, we should see how bipedalism would have led *Homo ergaster* to get these abilities and then we should consider how far they have got involved in social life by the aid of these new cognitive and evolutionary equipments.

In 1984 at Nariokotome in Kenya a specimen of a male adolescent with a brain size of 880 cubic centimeters was discovered. This fossil is dated to 1.6 million years ago. This specimen, *Homo ergaster*, showed that the ape-like common ancestor's body plan had been replaced by a distinctively modern human anatomy. *Homo ergaster* was fully upright on two legs and this bipedal position was similar to ours today. This evolution of bipedalism influenced new theories concerning the evolution of human linguistic and cognitive abilities. However, here it is not the task to give a complete evaluation of these theories, rather we are going to see the consequences of this fully upright bipedal position of *Homo ergaster*.

One study in 1994 has showed that the bony labyrinth of the inner ear of the fossilized skulls of *Homo ergaster* indicates that they were fully upright¹⁰. In this study four different specimen, two types of australopithecine, one *Homo habilis*, and one *Homo ergaster*, were examined. They found that the inner ear morphology of the australopithecine was ape-like,

¹⁰ Bony labyrinth of inner ear: "This consists of three semicircular canals positioned at right angles to each other, which are crucial for enabling the body keep its balance when walking, running, jumping on two legs, or hopping. This inner ear morphology is presence in monkeys and apes but anatomically different. This indicates the locomotory differences between humans and monkeys". (Spoor, Wood, and Zonneveld 1994, 645-8; Cited in Mithen 2006, 142)

whereas *Homo habilis*'s inner ear morphology was more like modern monkeys. Distinctively, *Homo ergaster*'s inner ear morphology was like that of modern humans. This study concludes that the first specimen who was fully upright was *Homo ergaster*, whereas *Homo habilis* was only partially bipedal.

The question of why this transition from partial bipedalism to full bipedalism is important, has its domain in the cognitive and communicative consequences. Leslie Aiello has claimed that bipedalism plays a crucial role for the evolution of intelligence and language (Aiello 1996, 269-90). She has argued that standing or walking on two legs requires more sophisticated sensorimotor skills and ones it evolves it enables other new sensorimotor abilities as well. The reason why this is so is that standing or walking on two legs requires a constant monitoring of the center of gravity and complex correlation of arm and hand movements in order to maintain a dynamic balance for the body position. As a consequence, arms and hands become free and can be used for other purposes like carrying, throwing, catching, making tools, etc. Mithen remarks on this by saying,

Bipedalism requires, therefore, a larger brain and more complex nervous system just to attain this more complex degree of sensorimotor control. Once evolved for those reasons, the larger brain might then be used for other tasks, including the planning of foraging behaviour, social interaction and, eventually, language; intelligence may have been no more than a spin-off from walking on two legs (Mithen 2006, 146).

This theory, therefore, suggests to us that bipedalism was the origin of many cognitive abilities of the human species. This, of course, does not imply that *Homo ergaster* was fully capable of higher cognitive abilities but it definitely shows that they were the first 'humans' who were intelligible in many areas of social life because of the emergence of vocalized proto-language. Now, it is time to look at these abilities, which are resulted by bipedalism.

The first and most obvious characteristic of the effects of bipedalism is the change in the sophistication of tool making capabilities of *Homo ergaster*. The tools made by *Homo ergaster* were more elaborate and complex than the Oldowan industry which was mentioned

earlier. These tools, which are known as the Acheulean tool kit, were symmetrical design and typified by hand axes. Erhlich points out,

The hand axes were flaked on both sides and often had sharp points. These improved tools should have enhanced our forebears' skills in hunting and rapid butchering and thus added more meat to their diet, presumably an important factor enabling the continuing enlargement of their brains. (Erhlich 2002, 169)

As we can see the tools of *Homo ergaster* were significantly more sophisticated than the tools of *Homo habilis/rudolfensis*. We can claim that this sophistication was one of the byproducts of bipedalism.

The other important consequence of the evolution of full bipedalism has been claimed to be the evolution of complex vocalization (Cf. Aiello 1996). Accordingly, Aiello argues that the anatomical differentiation, which is caused by bipedalism, would have initiated the change of the structure of larynx and vocal cords. This change would have made *Homo ergaster* capable of producing sounds more enhanced and diversified. Thus, this evolutionary improvement of the anatomy would have caused the biological access for the evolution of vocal language.

Combining the former to the social complexity of the early hominids life, we can say that *Homo ergaster* would have coped with the selective pressure for enhanced communication. Ultimately, we can say that this need of communication would have been succeeded by a proto-language. We should here realize that the need for a language has its evolutionary pressure in social needs. In this case, we can infer the presence of such a protolanguage as being consistent with the social complexity of early hominids social life. For the social life, very briefly, Mithen claims:

It is important to appreciate that *Homo ergaster* would have lived in socially intimate communities within which there would have been a great deal of shared experience and knowledge about individual life histories, social relationships and the surrounding environment. There would have been relatively slight demands for information exchange compared with our experience today. (Mithen 2006, 148)

If we think carefully, then, we can easily figure out that *Homo ergaster* had not been faced with any social pressure to communicate with total strangers. We will see in more detail how

the social life of early hominids was in the next section, but it is at least necessary to indicate here that the need for communication was necessary but there were no pressure for a 'creative language' like our languages today.

One feasible theory concerning this kind of proto-language might claim that *Homo ergaster* were using holistic utterances. Mithen refers to Wray's account for this:

The proto-language of *Homo ergaster* consisted of holistic utterances, each with its own meaning but lacking any meaningful sub-units (that is to say, words), much as Alison Wray has proposed ... For instance, a string of syllables such as *tebima* might have meant 'give that to her', and another such as *mutapi* might have meant 'give that to me'. (Ibid p. 149)

In this framework we can say that the teleological purpose of such proto-language might be that manipulation of others, commanding, treating, requiring something from another person etc.

Of course this theory of proto-language has faced many criticisms (Bickerton 2003, 77-93). One of these criticisms mainly states that this account cannot be a feasible protolanguage because it is too demanding to be adequate for communication. The shortness of the utterances might make *Homo ergaster* unable to communicate with other members of the community. This criticism can be avoided easily by referring to the social situation of *Homo ergaster*. Considering the social demands; such as lack of need for information exchange, communicating only with familiar members of the community, etc, for *Homo ergaster* we can say that this proto-language is sufficient for *Homo ergaser* to communicate. In addition to this, the possibility of using bodily gestures, which is made available by bipedalism, can be seen as supplementary to the proto-language.

So, conclusively we can say that the ability to communicate in *Homo ergaster* had improved since the evolution of bipedalism. However, this proto-language merely consisted of holistic utterances and that was far from being symbolic. At the same time the evolution of full bipedalism shows that before *Homo ergaster* it was anatomically impossible to produce a vocalized language. Thus, what Aiello and Dunbar speculated in 1993 about *Homo habilis* and *H. rudolfensis* cannot be true. Ultimately, the communication in *Homo habilis/rudolfensis* was merely by physical contact and grooming. On the other hand, *Homo ergaster* would have used a proto-language such as I've mentioned in this section.

However, the presence of a proto-language can be seen as a gateway to the modern language today but nothing more than a starting point. Related to this, the use of body language was also not very well understood and the expressiveness of the body language was also as primitive as the vocal communication. However, on the other hand, the improvement of the tool making capability shows us that the enlargement of the brain size of *Homo ergaster* was also effective in other things like tool making and not only to stand in an upright position.

2.4. Hominid Social Life

In order to start exploring the social environment and the social intelligence of our early ancestors, it is self-evidently important to determine, first, the possible group size of hominid society. We can infer quite easily that the group size of *Homo habilis/rudolfensis* was much larger than the earlier hominids like *Ardipithecus ramidus* or the common ancestor of humans and chimpanzees 6 million year ago. This is as much as certain because the environment of *H. habilis/rudolfensis* was relatively open landscapes, in contrast to the woodlands which the earlier hominids inhabited. This strong relation between the size of the environment and the group size can be seen in the modern-day primates as well. Mithen mentions why the group size on landscape should be much larger:

Away from the cover of trees, safety can only be found in numbers, which provide more eyes to notice predators and lessen the chances that any particular individual will be attacked. There is, however, a cost: social tensions leading to conflict can easily arise when large numbers have to live continually in close proximity to one another (Mithen 2006, 126).

This need for large group size and the social cost enable us to claim the following. Because these social tensions are highly important, each individual would probably have been acquainted with each other; they should have been knowledgeable about other members and

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they should have shared a common knowledge of existing and past social relationships as well as the environment.

This claim of group size is also well supported by the studies of the examination of the relationship between the group size and brain size (Aiello & Dunbar 1993). Accordingly, comparing the brain size of *Homo habilis/rudolfensis* with the brain size of modern apes, it is suggested that the group size was around eighty or ninety members. Considering this expansion in brain size (up to 50 per cent larger than modern apes), we can also claim that meat eating was the necessary consequence of this brain expansion because only meat can provide the necessary supplementary nutrition to fruits or insects for this larger brain. Suffice to say that meat eating was the new diet of these early hominids.

In this case the foraging activities of early hominids tell us another important factor. According to the archeological fossil findings, the meat diet of early hominids contained a considerably large number of different animal species. The bone fragments in the archeological sites indicates that animals were brought to a home base from different areas. This is explained by the '*home base/food-sharing hypothesis*' (Isaac 1978, 90-108). One of the examples of such home bases is the area called FxJj50 (Mithen 2006, 137). This area was located next to a watercourse, contained trees, and fruits and had access to stone for flaking. In this area, more than 20 different species of animal fossils have been found. Interestingly, these animal species were not inhabitants of that specific area but had been brought there by early hominids. According to Mithen, this shows that "Cooperation would have been essential for hominid life, whether in terms of foraging behavior, food sharing or social interaction" (Mithen 2006, 136). So in the light of these claims and evidences, it is evident that *H. habilis/rudolfensis* were socially more complex creatures than their predecessors. We can speculate also that they were emotional and being capable of expressing their feelings towards others because of the efficient character of emotion in cooperative activities.

Conclusively, we can say that all of these social complexities of these early hominids reflect another very important cognitive capability, which is the theory of mind. The next chapter will discuss an account of the theory of mind capability of early hominids. However, why we should think that they were enhanced in their ability of mind reading is fairly straightforward. The group size that I've discussed is the first indication of the necessity of a mind reading capability. In such a large group living it is arguably the case that hominids were able to engage in social interactions by a capability of mind reading. Secondly, the brain size ratio and the rudimentary Broca's area which is more similar to the F5 area in monkeys shows us that a mirroring system had evolved by the time of early hominids. In this case, it is very appealing to our theory that such a mirroring system would have been a compulsory element of the theory of mind. Ultimately, in the next chapter I will bring the issue of early hominids' theory of mind capability into the discussion.

2.5. What the Little Bones Told Us

We have seen that actually the little bones and tools can tell us many things about the social life of our early ancestors. It is still arguable whether we can construct a full story of the history of early hominids or not, but at least in this chapter I've described enough material to construct an explanation of social complexities of our early ancestors. We have seen that the Oldowan Industry and the Acheulean tool kits show that these early hominids were capable of manufacturing tools. However, the question of whether or not we consider these tools as property is still unanswered. This will be issued in the final chapter.

Then, in the case of communication we have seen that *Homo habilis/rudolfensis* was capable of grooming. This ape-like grooming indicates that the social boundaries of early hominids were strong and the social network within the groups was accessible by the members. However, this kind of physical communicative skill would not have been enough for the early hominids to have a complex language to communicate with each other. It is

argued that this kind of complex communication had evolved by the evolution of bipedalism. So, by the presence of *Homo ergaster*, a proto-language had appeared in the social life of early hominids. This proto-language, that I have referred to in this chapter, was supplemented by the new access to bodily gestures. This accessibility is of course due to the fully upright position of *Homo ergaster*, which enables them to use their arms, hands, etc freely.

Finally, we have seen that the groups of early hominids were in general close kinships, alliances, etc, which have no direct social contacts with outsiders or enemies. According to Dunbar, the population of these communities was around 80-90 members. In addition to this, cooperation within the community was essential for the hominid life. Ultimately, I've claimed that all of these social complexities and the communicative enhancement show us that these early hominids should have been capable of a theory of mind, which, I will now start to discuss in the next chapter.

3. Early Hominids' Capability of Mind Reading

I have mentioned in the previous chapter that these early hominids would have acquired a theory of mind capability. In this chapter, my aim is to discuss two important accounts of the theory of mind based on mental simulation. In this case, even though, this choice has some implicit reasons, it is deliberately because of the word limit of the paper. In this case what I will argue will be mainly restricted to these two theories, which I will discuss. Accordingly, first I am going to outline a general outlook of the simulation theory of mind (ST) in general, and then I will evaluate Alvin Goldman's account, which involves the capability of introspection and Robert Gordon's account, which introduces a new heuristic called 'ascent routine'. My claim is going to be that we can use Goldman's account for *Homo habilis*/*rudolfensis*.

However, before that I want to mention briefly why I've chosen ST instead of the theory of theory of mind¹¹. Recalling the presence of Broca's area, which is the area where mirror neurons are located, in *Homo habilis*/*rudolfensis*, this makes us to think that if there was this capability of mind reading, then it should be most likely to be ST. Gallase and Goldman argue for this claim by stating, "Our conjecture is only that MNs (*mirror neurons*) represent a primitive version, or possibly a precursor in phylogeny, of a simulation heuristic that might underlie mind-reading" (1998, 498; Italic Added). In this case, I want to avoid discussing whether or not this is true but take it as a hypothesis for this chapter. Following this, I make the discussion based on the assumption that mirror neurons indicate mental simulation.

¹¹ I am avoiding a possible comparative analysis of theory-theory and simulation theory of mind. For further information, see: Davies and Stone.

3.1. The Simulation Theory of Mind: A General Outlook

Simulation theory of mind is the account of the ability to make sense of the behavior of others. One of the important elements of this ability is the identification and attribution of inner mental states (i.e. desire, belief, etc.). In this case, a successful simulation or mind reading allows us to predict and to explain what others are doing, believing, or desiring and more generally what mental states (MS) they are attributing to themselves. The simulation that is the issue here can be explained as if one represents the mental activities and the processes of others by generating similar activities in oneself. In the case of the simulation that ST suggests, Röska-Hardy and Westfalen (2002) underline three assumptions that any ST might be based on.

First of all, they claim the notion that the same mental concept is attributed in selfattributions and in other attributions. On this assumption concepts expressed by mental predicates are unitary and the mental predicates employed in mental attributions are not different in first-person from other person uses. The contention that mental state predicates are univocal and mental state concepts unitary is supported by the observation that firstperson and third-person mental attributions are symmetrical with respect to their truth and falsity.

The second assumption is about whether or not there is a principled asymmetry between self and other's attributions of mental states. This view holds that there is an epistemological asymmetry between self-attributions and other-attributions. In the case of this asymmetry assumption the grounds for self and other's attributions of mental states vary, even though the meanings of the mental state predicates appear to be univocal.

Thirdly, in attributing a mental state, an attributor characterizes the modality in the case of sensations and perceptions. In the case of beliefs and other "propositional attitudes" both the MS-type and the MS-content must be characterized. Plausibly, the phrases 'hoping it

is raining' and 'believing it is raining' characterize different mental states and express different MS-concepts, because the MS-types are different. Whereas, 'believing it is raining' and 'believing the sun is shining' are different MS, because their contents differ, even though their MS-type is the same.

On the basis of these assumptions we can talk about at least two kinds of ST. Joe Cruz and Robert Gordon (Draft Entry, 11) explain that there is, firstly, the view that to ascribe mental states to others by simulation, one must already be able to ascribe mental states to oneself by introspection, and to do that one must already possess the relevant mental state concepts. Alvin Goldman's introspectionism can be seen as an example of this sort. We will explore that in the next section.

Secondly, Gordon thinks that the ST would be built on the 'subject looking out on the world' idea of mental state ascription. In such a case, concerning oneself or another, one has to say something about the world that is relatively directed to a particular 'point of view' (first person or third person). This account assumes, unless there is counter-evidence, all subjects look at one and the same world.

Anna Riberio (Unpublished, 3-4) puts the whole discussion of ST into two categories namely, externally driven simulation, which is the Gordon-variety simulation and internally driven simulation, which is the Goldman variety simulation. Now I will critically evaluate these two theories.

3.2. Goldman's ST Model

3.2.1. Goldman-Style Introspectionism

Goldman's ST relies on the assumption that simulators themselves should have beliefs, desires, etc. in order to simulate other's self-ascriptions. Goldman thinks that when we are trying to understand other's ascriptions, we do not use a theory-theory but rather, he says, we "consider what we should do if we had the relevant beliefs and desires" (1989, 81). In this case, for him, one ascribes MS to others by putting himself into the other's shoes. In this process, one first generates the situation that the other is in and then acts thereupon. He says, "We simulate the situation of others, and interpret them accordingly" (Ibid.). Thus the prospect that Goldman suggests is a '*phenomenological model for the attitudes*'. In his 1993 paper Goldman says, "the cognitive system must use ... information about the intrinsic (nonrelational) and categorical (non-dispositional) properties of the target state" (1993, 87). He goes further and suggests that we are introspectively using simulation in order to predict other's behavior. In this case, he thinks that these intrinsic and categorical properties are the qualitative properties of mental states. So, on this view, Stich and Nichols remark that "one detects one's own mental states by discerning the phenomenological properties of the mental states, the way those mental states feel" (2003, 31). For instance, when playing chess, one can predict the other player's next move by imagining himself being in the other's position and deciding what he would choose to do.

However, as Goldman indicates, this explanation does not give a satisfactory account for mental simulation. He adds that one should take into consideration other important information. In the chess case, one should pay attention to the individual difference (i.e. whether or not he is a novice or master, or vice versa). This final point, for Goldman, explains how prediction failure occurs in this account of simulation model. He thinks that people are mistaken or totally uninformed in such information and hence their predictions fail. In this case, prediction failure cannot be derived from the simulation processes but from misguided predictions.

In fact, in terms of this necessity of information add-ons, Goldman claims that we use "generalizations and other inductively formed representations (schemas, scripts, and so forth) that can trigger analogous interpretations by application of ... 'knowledge structures' alone, sans simulation" (1989, 88). We should not, however, misunderstand this sort of use of

information and think that Goldman suggests a theory-theory explanation. Differently, the use of body of knowledge is not the same as the theory-theory, but it is the knowledge about the world or the facts that can help to simulate.

Stich and Nichols (2003) evaluates Goldman's proposal in two ways: the *weaker* and the *stronger* versions. For the *weaker* version, they hold that we detect the type of a mental state by the qualitative properties of the mental state. The qualitative character of a state tells us that the mental state is a belief or desire or hope. On this version, qualitative properties do not play a role in detecting the content of propositional attitudes. On the other hand, the *stronger* version claims that we detect both the type and the content of a given mental state by the qualitative properties of the mental state. So the qualitative character of the mental state both tells us that, for instance, the mental state is a belief and it is the belief that 'there is no greatest prime number'.

Leaving aside objections that they have raised to these proposals, it is important for our discussion that both of these versions depend on the assumption that one must already have self-awareness of one's mental states and should somehow (off-line or on-line) distinguish types of mental states. Moreover, for the *stronger* version one should also distinguish the qualitative character of the propositions. For instance, a mental state has the type of belief and the content of that is '17 is less than 18' and another one has the same type and the content of that is '17 is a prime number'. In the case of these two mental states, how can these two beliefs have distinguishing qualitative characters? If this is possible, then it is at least impossible to determine that every possible instance of a proposition's distinguishing characters in order to predict other's ascriptions.

Finally, all of the concerns that Goldman claims are strongly depended on introspection, which is the way that he suggests for the mental access to self-ascriptions. Let

us now see what is wrong with introspection and how it is problematic to make it closely connected to mind reading for our purpose in this chapter.

3.2.2. The Problems with Introspection

The very existence of introspection itself is a highly debatable issue even in recent debates. So, in order to evaluate Goldman's theory of mind reading, we should first examine how it is problematic to make mind reading closely introspective. Carruthers (2008) denies the existence of the faculty of introspection. His general goal in his paper is not important here but what is important is the data against introspection that he presents and evaluates in his paper.

According to Carruthers, a person might verbalize his intention in his "inner speech". This inner speech may be used as an input to the mind reading system, "because inner speech uses the same perceptual systems involved in the hearing of speech" (Ibid., 7)¹². However, this cannot indicate that we only introspect in order to use our mindreading capability. In addition to this inner speech, a person can form visual or 'proprioceptive' images that are as available as inner speech to the person (Kosslyn 1994), or he can use pre-verbalized thoughts or images in order to "interpret" his decisions. Here interpretation or "self-interpretation" is related to Carruthers's alternative theory of mindreading that I will not discuss here. What is important from this concern is that he raises the possibility of other capabilities that can do the same job as introspection might perform. In this case we should look at some further evidences.

Following this neurological contingency about introspection, there is also the doubt about the necessity of metacognitive access, which is prior to the propositional attitudes. Carruthers holds that the executive systems such as "searching the memory, retrieving an appropriate first-order content" of the agent can provide this metacognitive access. Then he

¹² Cf. Paulescu, *et al.* 1993, 342-345 and Shergill, *et al.* 2002, 219-227.

claims, "This capacity would surely have been of ancient evolutionary provenance, long predating the emergence of language and mindreading. Nor does it qualify as a form of introspection because it is not metarepresentational in character" (Carruthers 2008, 9). If it is the case that these executive systems are evolutionary prior to mindreading and language and also if the language and mindreading have been evolved coextensively (Gomez 1998 & Origgi and Sperber 2000), then this may show that introspection is not the only means of mindreading. Even if one can say that these executive systems, after language has evolved, work for verbal expressions as well, it seems quiet unlikely because in order to produce 'metarepresentational thoughts' one should first hear his own words and utterances. In this case, introspection is enclosed by the language capabilities and cannot depend on metacognitive representations.

Now we have to see evidences that support these former claims. The first interesting case of research is about commissurotomy or split-brain subjects, which is studied by Gazzaniga (1995 & 2000). Very briefly, in the research the patient looks at a point while two cards are flashed up, one of which is located to the left of the point and the other to the right. With the instruction "Walk!" that is flashed to the right brain, the patient left the room. When they asked him why he left the room, the patient replied, "I am going to get a Coke from the house". This reply of him is fully self-confident, confabulated and seems introspective (Carruthers 2008, 11). There are some complications of these research and different interpretations and anticipations of it. However, the only important one is Goldman's (2006) remark (Ibid., 12). He thinks that the data of commissurotomy cannot be evidence that normal humans also do not have access to their own intentions. Split-brain patients have serious brain damage, which make the comparison difficult. On the other hand, Carruthers claims that this objection is not accurate enough. He thinks that split-brain people's reports of their intentions have the same vividness in the sense of obviousness and immediacy as normal people. He

concludes, "The best explanation is therefore that subjects themselves cannot tell when they are introspecting and when they are interpreting or confabulating. So far all we know it may be that our access to our own judgments and decisions is always interpretative, and we never have introspective access to them" (Ibid.). Hence, the data strengthen the claim that introspection may play no role in mindreading.

The next support is from developmental evidences. Goldman (2006), Gopnik (1993), Nichols & Stich (2003) all agreed with the old conception of the 'developmental timetable for mindreading' according to which false-belief task competence does not occur before the age of four (Wellman 1990; Cited in Carruthers 2008). However, as Carruthers indicates, recent studies show that false-belief understanding emerges at around 15 or 24 months, although it may be masked by incompetence in language use until age 4 (Bosco, *et al.* 2006; Onishi and Baillargeon 2005 & 2007). This recent data helps us to anticipate that if false-belief understanding emerges before the false-belief understanding which requires linguistic competence, then introspection may not be the only tool that allows mental access. Carruthers asks, "In particular, if meta-representational competence is present in the second year of life, we want to know why it takes two or more additional years for that competence to manifest itself in verbally based tasks" (p. 15).

This question leads us to claim that it is not introspection but the executive mechanisms that are the means to cope with attributing mental ascriptions to others and to self. In the case of the false belief task, it is clear that no verbal mechanism plays role in this process. Recalling the claim that these executive mechanisms had been evolved before language, we now have an interesting result concerning the evolutionary implications of the false-belief tasks. From the developmental evidence we saw that long before introspective capabilities have emerged, a young child has access to his/her own intentions non-verbally. In

this case, because these mechanisms that the child is using are more ancient than the introspection, it makes sense to draw an analogy between the phylogeny and ontogeny.

If we remember in the 2nd Chapter I attributed *Homo habilis*/*rudolfensis* no vocal communicative tools. On the other hand, I have shown that the emergence of vocal communication can be considered to have happened in *Homo ergaster*. In this case, we can say that due to the lack of vocal communicative abilities of *Homo habilis*/*rudolfensis*, they were incapable of using introspection as a means to access to their own mental ascriptions. Thus it is highly probable that *Homo habilis*/*rudolfensis* might have used such executive mechanisms as their means for mindreading. Thus, from the evolutionary concerns and developmental evidence we can conclude that the hominid mind does not need introspection in order to simulate other's mental ascriptions. In this case, my claim here is that before *Homo ergaster*, which were the first vocally communicating hominids, it would not have been the case that early hominids were using a simulation capability such as Goldman suggests. Of course, I should underline here that I am not arguing against introspection in general. However, I am claiming here that *Homo habilis*/*rudolfensis* were unlikely to be capable of introspection.

3.3. Gordon's ST Model

Robert Gordon considers a 'radically' different kind of simulation model, which is distinct from other kinds of models like Goldman's introspection, or Stich and Nichols's (2003) monitoring model. The specialty of Gordon's simulation theory is that it does neither depend on introspection, nor inference making. By this virtue it is worth considering that it as preferable to the rival view of Goldman's introspectionism because of its lighter requirements.

In order to explain his version of simulation, Gordon gives the Tees/Crane example. He says that in order to find out what Mr. Tees would think, Gordon does not imagine himself in Mr. Tees' situation, but uses another way. Gordon says, "I have the option of imagining in the first person Mr. Tees barely missing his flight, rather than imagining myself, a particular individual distinct from Mr. Tees, in such a situation and then extrapolating to Mr. Tees" (Gordon 1995, 55). In this case the referent "I" ceased to be Gordon and instead it becomes Mr. Tees. This is the egocentric shift that is the core of the simulation theory for which Gordon argues. For the egocentric shift to work one should predict what mental states takes place in Mr. Tees mind. In this case, one should determine whether or not he is upset or if it was the driver's fault (Ibid., 57). In order to obtain such determinations, while having such an egocentric shift, Gordon suggests an alternative solution to the introspection and inference making. The technique which Gordon suggests is the "ascent routine" (1996). The ascent routine can work for both the egocentric shift and self-ascriptions. Thus, an ascent routine is a procedure which allows one to get the answer to a question about one's mental condition by answering a question that is not about oneself or mental states, i.e. "Do you believe that Mickey Mouse has a tail?", by asking oneself an "outwardlooking" question about the world, "Does Mickey Mouse have a tail?". If he answers for the latter "yes", then he will give the same answer for the former and vice versa. Gordon says:

I call this procedure an ascent routine because it answers a question by answering another question pitched at a lower semantic level –the former being a question about a mental state that is about x, the latter a question directly about x (1996, 15).

In fact by using an ascent routine one is not putting himself into the other's mental shoes nor is one looking to one's own mental states at all. Gordon's model removes the necessity of such introvert self-awareness. In this case, we can see two implications of the application of ascent routine. First of all, using an ascent routine one can both identify another's ascriptions as well as one's own ascriptions in the same way. Secondly, one should not be fully self-aware while predicting ascriptions. He might predict by using an ascent routine only by directing it to the external world. One consequence of this is that it gives young children the ability to predict other's behaviors to some extent. This might be strengthened by the study of false beliefs. Gopnik argues in the candy box experiment, "Children's ability to answer the false-belief question about their own belief was significantly correlated with their ability to answer the question, about the others' belief and the appearance-reality question, even with age controlled" (1993, 5). Gordon also holds that although young children can do simulation via ascent routine, this ability is not as advanced as old children or adults. For instance, a young child cannot understand the question "Do you believe that p?" as a question about herself. Rather she understands it as a simple question about p. Gordon says,

The point is ... that they would have no means of understanding how, 'I believe Mickey Mouse has a tail' could be about an individual at all. They fail to grasp several components of the concept of belief, but the one that is paramount, because it is presupposed by all the others, is the general idea that a fact can have a mental location: can be, in other words, a fact to some individual (1996, 16).

On the side of the young children, he holds that they can simulate others' attributions

(i.e. by gaze following) without understanding the mental concepts. In this case, understanding is not a necessary condition of Gordon's ST. He adds that the young child's simulation is indeed "nothing more than fact-from-particular-perspective" (1995, 62). However, because understanding of mental concepts plays a significant role when the simulation is made by an adult or old child, he distinguishes between two types of ascriptions, namely *comprehending* and *uncomprehending* ascriptions. He says,

If we ordinarily identify our own present beliefs by using an ascent routine, then there is an important distinction to be made between comprehending and uncomprehending ascriptions: that is, ascriptions made with and ascriptions without understanding that the beliefs ascribed may be false. On the one hand, a capacity for reliable uncomprehending identification of one's own present beliefs should emerge before one can ascribe beliefs to others or to oneself in the past. It emerges extremely quickly, if my view is right, and does not even await development of a capacity to introspect, much less a capacity to recognize a belief by its introspected phenomenological marks (1995, 62).

As Gordon claims, the ascent routine alternative has advantages such as being a simpler and quicker process than introspection and inference. His view eliminates the problems of understanding the mental state concepts and the self-awareness of them. However, Goldman raises an objection, "Suppose someone is asked the question, "Do you hope that Team T won their game yesterday?" (Q1). How is she supposed to answer that

question using an ascent routine? Clearly she is not supposed to ask herself the question, "Did Team T win their game yesterday?" (Q2). This would only be relevant to belief, but not hope. What question is she supposed to ask herself?" (Stich & Nichols 2003, 30) This objection by Goldman reflects the general objection to Gordon's ascent routine. It basically argues against the idea that the ascent routine can explain every ascription and not only belief. Furthermore, it is also suspicious of that the ascent routine can work for retrospective reports but not only for the current situations like "what do you want to do?" Thus, he concludes that the ascent routine is inadequate to explain every prediction of self-ascriptions and can only work for belief reports.

We should, I think, admit that this objection brings many problems to Gordon-type simulationism. However, problems related to this objection can be handled in the framework that we are interested in here. In other words, I think, even though Gordon-type simulationism has this problem for the modern humans, it cannot be applicable in the context of early hominids. Ultimately, what am I saying is that the social needs shape the way of mindreading and mental states. In this case, first we have to see the social demands of the early hominid social living. As I've claimed, these early hominids were living in close groups without the evolutionary pressure to contact with strangers. They were very well acquainted with nature. They knew each other and had decent knowledge about past members of the group.

Now we have to imagine that one early hominid utters¹³ the following: "Do you desire that Able hunted the tiger yesterday?¹⁴" As we can anticipate, the 'desire' then and the 'desire' now should be different in content. By the social demands of the hominid life 'desire' can be derivative to 'belief'. If we admit that each member of the community has a knowledge of what others are doing or did, then that question can simply be reconstructed as an 'outwardlooking' question. The very simple reason is the impossibility of not knowing

¹³ For the sake of the argument we have to assume that this utterance is not vocal.

¹⁴ The ascription desire is a deliberate choice for the example. I will argue that use of 'desire' is necessary for the understanding of the Nozickean Proviso. In the following chapter it will be recalled.

something about the activities of near past, i.e. yesterday. Then the question may become: 'Did Able hunt the tiger yesterday?' In this case if Cane is knowledgeable of what Able did yesterday, then he can simply answer it accordingly. In terms of this the mental ascription 'desire', it can be said that because facts relevant to the prediction are quite obvious (either known or unknown), this reconstruction can work. In this case, the egocentric shift can be successfully done.

However, if we improvise with the objection of retrospective simulation, we can find another objection that cannot be specific to the context of early hominids. This is the worry about future-directed mindreading. I mean by future-directed mindreading that the prediction of a mental state of another, which is not simultaneous with the situation or about past, but a mental state, which will be present possibly in the future. The reason why I think future directed simulation couldn't be succeeded is because according to Gordon the mental state should always be directed to the outside world and facts. In this case, if I ask, "Do you believe that she will desire this pen next week?" we cannot refer to her pen here and now and predict that she will desire it because of the fact that she needs to write three essays during the next week. Suffice to say that 'ascent routine' only suggests to us that the mental ascription should be reconstructed as if it is about a fact. However, in the case of future directed predictions the issue is not about the facts but it is mainly about the content of the mental state. The content of 'desire' may be a dispositional attitude of the agent towards the object but this attitude should not always be explicit and observable. So, in the case of the pen example, the issue is not that because she needs to write, she needs the pen. Rather, it is about the mental ascription of her aboutness to the pen, i. e. "She believes that she won't lose her pen till next week". So this relational attribution has no reference in the external world appears as a fact. As I've said this prediction is merely about the mental ascriptions and their *aboutness* to the object.

3.4. Gordon-Style or Goldman-Style Simulation Theory for Early Hominids' Mindreading?

In this chapter, we have seen that both theories that I have introduced have problems. In this case it is highly difficult to determine the best theory to explain early hominids' mindreading capability based on simulation. However, considering the problems with both theories that I've mentioned, we can say that Goldman-style ST can explain *Homo ergaster*'s mindreading capability but not *Homo habilis**rudolfensis* because introspection seems to require vocalization and language. On the other hand, even though Gordon-style ST may be considered as a decent account for both *Homo ergaster* and *Homo habilis**rudolfensis*, the problem of future directed prediction weakens its adequacy.

Briefly, Goldman-style requires the ability of introspection. In this case as I've objected, the lack of communicative ability of *Homo habilis* makes it impossible to them to use introspection. In this case, the idea is that vocal communication, or language, is considered as the precondition of introspection. This claim is supported by the experiments that I've mentioned above. If vocal communication is necessary for introspection (so for mindreading), then from the fact that the only means of communication in *Homo habilis* was physical contact and grooming, we can say that Goldman-style ST cannot be applicable to *Homo habilis*. Ultimately, this conclusion makes us rely on the executive mechanisms instead of introspection that can be used for mindreading in the case of *Homo habilis*/rudolfensis.

However, as I've explained *Homo ergaster* would have been capable of using vocal communication. In this case, it is at least theoretically possible that they might have been capable of introspection as well. If this is the case, then it seems to me that no particular reason can demand us to claim that Goldman-style ST cannot be applicable as an account of their mindreading capability. Ultimately, I conclude that only after *Homo ergaster* can we see Goldman-style simulationism.

Following the former claim, I've claimed that Gordon's account of the 'ascent routine' can be seen as an example of such executive mechanisms. The economical insight of this account makes it, of course, very appealing in order explain the mind reading capability of early hominids. Firstly, if we recall the idea behind the 'ascent routine' that is the 'fact-from-particular perspective' we can say that *Homo habilis* were able to perform this kind of reasoning. As we have seen in the 2nd chapter *Homo habilis*'s ability to make tools, foraging activities and cooperation shows us that the technical intelligence and natural history intelligence were complex enough to enable them to understand and manipulate the state of affairs to some extent. This means that the fact, which is the given state of affairs and the particular, which is the agent are fully available for early hominids to understand and act according to them. A quick example might be the following. A question: "Do you believe that he is hunting?" is a meaningful question and can be substituted to a factual question as "Does he hunt?" So, ascent routine in this sense is applicable to the early hominids.

Secondly, Gordon's ST does not require any sorts of vocal communication. In this case, we know that *Homo habilis*/*rudolfensis* were only capable of grooming and physical contact as a communicative tool. In this case, the bodily gestures and facial expressions that might have been used by *Homo habilis*/*rudolfensis* were most probably sufficient for the prediction process. In that case, no introspective access is required for this sort of simulation, so no vocal communication is necessary. Ultimately, in this context Gordon's ascent routine alternative has more explanatory power comparing to introspection. However, as I've indicated above the problem of future directed prediction is still a problem for Gordon-style ST.

Conclusively, we have two theories which can explain the mindreading ability of two different species of early hominids: Gordon-style for *Homo habilis**rudolfensis* and Goldman-style for *Homo ergaster*. So again we can see that vocal communication plays an important

role in the evolution of human mind. Accordingly, we will see how this dichotomy between *Homo habilis\rudolfensis* and *Homo ergaster* affects the understanding of the Nozickean Proviso in the next chapter.

4. The Limitation of the Nozickean Proviso and the Claim that the Entitlement Theory is a Historical Principle

Up to this point, we have seen the accurate formulation of the Nozickean proviso in the first chapter. Secondly, I have referred to a stage of time as our target instance of examining the Nozickean Proviso. *Homo habilis, Homo rudolfensis* and *Homo ergaster* were the actors of this stage. Following the paleoantropological and archeological descriptions of these early hominids' social life, cognitive and social skills, I have concluded that they were capable of using a theory of mind ability in their inter-personal relations. In this case in the third chapter I have evaluated two simulation theories of mind and concluded that Goldman-style simulation can be best fitted to the ability of mindreading of *Homo habilis/rudolfensis*.

In this chapter, I am going to conclude this whole discussion with the examination of Nozickean Proviso by applying it to the historical instance that I have described so far. In this case, we will see whether or not these early hominids were capable of being guided by this provision of legitimate acquisition of property. By means of this examination the theory of mind capability of these early hominids will play the crucial role. In this case, I will stick to the conclusion and will use the theories that I've referred in the previous chapter. Considering this restriction of inquiry, I have to underline again that it is possible to look at this issue by conducting other accounts of theory of mind. However, in this paper the conclusion will be restricted to the theories that I am using, hence possible objections by other accounts can be a topic of another study.

The examination here will be constructed in three parts. First, we have to see whether or not it is plausible to use our early hominids as the theoretical bearers of the Nozickean Proviso and then secondly we have to see how well they were capable of grasping the proviso cognitively. By means of this issue of cognitive competence we will refer back to 2nd and 3rd

Chapters. Finally, and conclusively, we have to determine the relation between the results that we will get in the second part, and the issue of historicity of the Nozickean Proviso. Ultimately, we will get to the conclusion that *Homo habilis* and *Homo rudolfensis* wouldn't have been guided by the Nozickean proviso because of their restricted capability of mindreading and communicative incompetence. Thus, the Nozickean Proviso alters the claim that the Entitlement Theory is a historical principle.

4.1. The Nozickean Hominids

When saw general characteristics of the Entitlement Theory, I did not emphasize the motivation behind it. Related to this, I've shown Nozick's criticism of 'end-slice' principles (Rawlsian or utilitarian) that simply argues that such principles require an institutional organization, a State, which can have the power to handle the distributive justice in the society. On the other hand, Nozick's Entitlement Theory, as a historical principle, does not require that an institutional organization have the coercive power to control and the intervene in property transactions of the society, but only that it should have the right to intervene by means of protection basic rights and liberties and rectifications of unjust transfers and appropriations. In this case, I claim that the Nozickean Proviso as a part of the Entitlement Theory does not presuppose any institution necessary for the application of the proviso. Ultimately, it is pre-political in the sense that it is an action-guiding principle for agents, who want to appropriate justly.

For Nozick, principles of distributive justice are all action-guiding principles (Nozick, 150). In this case the principle of original acquisitions of holdings is an action-guiding principle for acquiring something, which is initially un-owned and this holds for the proviso as well. Ultimately, the distributive justice that Nozick suggests does not require any political institution in order to satisfy its requirements. Therefore, this provision can be applied to any

society which has pre-political elements. We can say that the role of the state is merely to protect the basic rights of its citizens.

Considering this important feature of the Nozickean Proviso the objection to considering early hominids as if they are the bearers of the proviso is eliminated easily. In order to show this we just need to demonstrate the social elements of the hominid social life. This is crucial because even if the Nozickean Proviso is an action-guiding principle, Nozick underlines that distributive justice can be applied to any social arrangements¹⁵. For this need, I have already demonstrated the social complexity of the hominids' social life in Chapter 2.

Very briefly, the first indication is the tool making capability of early hominids. It is naturally simple to think that in order to talk about distributive justice we have to observe the notion of property privileged in the given society that we are talking about. In this case, manufacturing tools and the possession of these tools by the producers show us that they have an understanding of property in general. This idea is strengthened with the comparison between the chimpanzees' tool using capability and hominids' tool making capability. In that case, the difference was that the labor that is performed by the hominids is quite unique by comparing to the simple tool uses of chimpanzees. Ultimately, this Lockean approach to consider early hominids tool making as 'mixing labor' gives us the reason to conclude that these tools would have been considered as, in a broad sense, property.

Furthermore, the findings in the 'Hippopotamus Artefact Site' (See. Chapter 2.2) that I have referred shows that these early hominids were keeping their tools for later uses. Moreover, they were using these tools in cooperative uses like foraging. It follows from this evidence that they were aware that they appropriate these tools that they produce because the very notion of possession in this context leads us to think that they were valuing what they

¹⁵ We can see this when he refers to 'free society' on page 149 in ASU.

were producing. Thus, we can conclude that some notion of property was present in hominid social life¹⁶.

The second thing is the social complexity of the early hominid life. I have shown that these early hominids were capable of communication. In the case of *Homo habilis/rudolfensis* we have observed that they were using grooming and physical contact for social communication. In the case of *Homo ergaster*, we have seen that a proto-language would have taken place. In addition to this, body language was also important. Finally, we have seen that all this social complexity concerning the population and the cooperative way of life makes it strongly plausible to think that these early hominids would have been capable of using a capability of theory of mind. Thus, considering all of these we can call these early hominid groups as 'societies'. Ultimately, we satisfied the conditions for the examination of the Nozickean Entitlement theory in these early hominid pre-political societies.

4.2. The Structure of the Nozickean Proviso and the Question of Hominids's Competence of Understanding the Nozickean Proviso

In the first Chapter, I concluded that Nozick is misconstruing the structure and the components of the proviso for the principle of original acquisition that he is suggesting. What I've stated as the actual Nozickean Proviso was the following:

(W) X must not cause Y to lose the opportunity to use freely what he previously could and (S1): X must not cause Y to lose the opportunity to improve his situation by a particular appropriation or any one, unless something counterbalances the diminution in opportunity.

In this section, first we need to evaluate these three components of the proviso in order

to prepare the basis for the issue of hominids' competence of understanding the proviso. The

¹⁶ Here I am appealing to a natural understanding of property. It is plausible to argue for a more moralized version of property, which brings claim rights to appropriators. This claim rights may suggests other's not to intervene the property that has been appropriated already. However, I will stick with the first notion because the second would be too elaborated for these early hominids' social life. This is because, by social regulations of early hominid's would have been make it unnecessary to express any claim rights due to the cooperative way of social living. In this case, because it is impossible to determine empirically that such claim rights were in place, I think, we can stick to the natural understanding of property. For the moralized version, see the distinction between *in rem* and *in personam* rights by Jeremy Waldron (1988, 108-09).

idea here will be that the understanding of the proviso requires a theory of mindreading because of its requirement of interpersonal relations.

4.2.1. Homo habilis/rudolfensis

Let's start with *Homo habilis/rudolfensis*. I have said that Gordon-style simulation theory can explain the theory of mind capability of these early hominids. In this case, in order to understand the proviso, an early hominid of this sort should use an 'ascent routine' heuristic.

For W we can easily see that it is about the world and the facts that are related to the appropriation of property. In terms of this, x must observe that his particular appropriation is not worsening y's situation. To illustrate this, let's assume there are two stones¹⁷ and agents x and y. If x tries to appropriate both of stones, then he simply overrides the W-condition of the proviso. In this case, x must understand that he is allowed to appropriate only one of them. To understand this, x must simply ask to himself, "Do you believe that this appropriation is impeding y using it?" and by using an ascent routine the question will become, "Am I impeding y using this stone by appropriating it?" There, an 'egocentric shift' can perfectly be succeed. To answer this question, the 'ascent routine' must contain two factual elements. First, x must observe that there are only two stones and secondly, if he appropriates both of them there will be nothing left for anyone else. In this case, the former is a simple observation, which doesn't require anything special. For the second, because we presupposed that there are no other stones, by mere knowledge of the natural history, this fact can be inferred easily. Ultimately, x can satisfy the requirement of W.

Secondly, S1, which is the second part of the proviso, requires something different to W. Let's imagine two early hominids x and y and a stone A¹⁸. In this scenario, x wants to

¹⁷ For the sake of the argument imagine that there are only two pieces of stone available for them.

¹⁸ For the sake of the argument imagine that this is the only piece of stone available for them.

appropriate A in order to manufacture a tool. However, in order to satisfy the proviso he should be certain that his appropriation is not going to cause y to lose his opportunity to improve his situation by x's particular appropriation. In this case, x needs to use mindreading in order to predict y's desire to that piece of stone. The question for x would be: "Do you believe that y desires to appropriate A?" The problem here is that the desire is not about facts which are co-temporal with the situation. The desire is about the future state of y and this requires x to simulate a future-directed prediction. More precisely, y may show a dispositional attitude towards A, which expresses an intentional state about A. This attitude can be seen as a fact about the situation and can be used for a simulation. However, y may not show this dispositional attitude towards A in cases in which it may be interpreted that y has no interest in appropriate A. Even though y might not express an interest in A, y can still desire to appropriate A in the future. Moreover, because A is the only stone available to be appropriated, by the proviso x should compensate he lose of y in any way. Unfortunately, this desire of y about a future fact cannot be successfully predicted by using 'ascent routine'¹⁹.

One might object to that by saying that X can consider Y's grooming and behavior as clues and facts and he can construct his prediction based on them. However, these attitudes seem to be quite unsuccessful to express such complex meanings. According to the 2nd Chapter, I think that the communication capability of *Homo habilis/rudolfensis* was not adequate for such goals²⁰. Thus, even if there is still a theoretical possibility, this claim is not

¹⁹ The situation can be read in a different way. It might be said that it is enough for x to evaluate his appropriation and decide whether or not it is worsening the situation of y. However, this idea presupposes an extreme conception of well-being. By means of this, to suffice that, x must know the value of the stone in an objective way. He should have known that A has a fixed value V, and this V is valid for all members of the community, hence A is worth for appropriating no matter what y thinks of A. However, given the fact that the natural history of these early hominids, this extreme view would be a *pseudo* historical one. For instance, A might be a stone, which is not known as a material to produce stone tools. In this case, there would be no fixed value of A that everyone can know (Simply, A would no be as same as water, which is necessarily important for all individuals). Thus, this possibility gives right to my reading of the scenario. Ultimately, determining the individual validations of property work in a better way than appealing to such an extreme conception.

²⁰ See Chapter 2.2 & 2.3 for the arguments.

consistent with the evidences that I've shown before. Ultimately, we can conclude that *Homo habilis/rudolfensis* wouldn't have been capable of understanding S1 (so the Nozickean Proviso) and guided by the Nozickean Proviso.

4.2.2. Homo ergaster

After the examination of *Homo habilis/rudolfensis*, we don't even have to evaluate the proviso for *Homo ergaster* because for our purpose it was necessarily sufficient to find only one instance of indeterminacy of the Nozickean Proviso as an action-guiding principle. However, just to be precise, we can briefly look at the scenario for the *Homo ergaster* as well.

I've claimed that *Homo ergaster* was capable of using a Goldman-style simulation. In this case, the problems for *Homo habilis* wouldn't have been the case for *Homo ergaster*. The key difference of Goldman-style ST was the use of introspection in mindreading. This use gives to the agent the access to his own ascriptions and then applies it to the other's ascriptions. In this case, in previous scenario for S1, we can say that the desire of x to appropriate is enough to predict that y has to have a desire to appropriate as well. This is because both x and y are in the same situation. So, conclusively, x can put himself into y's shoes and predict that y would appropriate A because A is worth for appropriating. The key difference here is that by using introspection, this idea of considering A to be worth appropriating does not necessarily depend on an objective notion of well-being but it comes from the background knowledge of x about A. Ultimately, a *Homo ergaster* would have been successful to predict in this situation.

As I've said, even if *Homo ergaster* wouldn't have been capable of understanding the Nozickean Proviso, it would not make any difference for our purpose because one instance will be enough to criticize Nozick's claim of the historicity. In this case, because I've concluded that the Nozickean Proviso wouldn't have guided that *Homo habilis/rudolfensis*,

this will be enough in the next section to show that this alters the claim of historicity of the Entitlement Theory.

4.3. The Incompatibility of the 'Historicity' of the Nozickean Proviso with *Homo Habilis*

After this inquiry concerning the early hominids and the Nozickean Proviso, now I want to conclude the issue by discussing the element of historicity of the Nozickean Proviso concerning the incompetence of *Homo habilis* to be guided by the Nozickean Proviso. Conclusively, the claim is that Nozick's provision for the initial acquisition of property alters the Entitlement Theory because of its inapplicability to all instances of past.

To recall briefly, Nozick says that as a theory of distributive justice, the Entitlement Theory should be applied to instances of the past. It follows from this idea that the theory should be applicable to every instances of past in which property transactions had been involved. In this case, I have already claimed that the Nozickean Proviso should be graspable by the possible bearers, in order to be an action-guiding principle as a means of their sense of justice. However, we have seen that it is not the case for *Homo habilis*. So, the proviso cannot be an action-guiding principle for them because of their cognitive incompetence.

In this case, the claim that the Entitlement Theory is a historical principle loses its plausibility by this former issue concerning *Homo habilis*. In order for this claim to be complete, the proviso should have been graspable in every instance of past and the future. However, unfortunately, there is at least one instance *–Homo habilis*, which cannot be examined by the Entitlement Theory. Ultimately, this claim of being a historical principle is limited to be considered as being adequate because of the proviso that Nozick suggests for the principle of initial acquisition of holdings.

Conclusion

In this thesis, I have argued that *Homo habilis/rudolfensis* were cognitively incapable of understanding the Nozickean Proviso because of their limited mindreading ability. Because of this reason, these early hominids wouldn't have been capable of using the Nozickean Proviso in order to appropriate un-owned objects justly. In this case, the Nozickean Proviso wouldn't be an appropriate action-guiding principle for these early hominids. Ultimately, I have reached the conclusion that the claim of historicity of the Entitlement Theory is altered by this limited accessibility of the Nozickean Proviso.

I have used an evolutionary account for explaining the cognitive and social capabilities of these early hominids. In this case, the approach is supported by archeological and anthropological data, which is important to build a historical framework to describe these early hominids' social and cognitive life. This approach was necessary because the claim of historicity required us to be consistent with what history tells us. Considering this, my way of looking at this historical instance can be considered as a new perspective on the political issues related to the history which cannot be examined by documents.

This analysis of early hominids might be seen as unimportant at face value because the rationale of the 'minimal state' that Nozick argues for, is a theoretical construction, in the sense that it is based on a '*fundamental potential explanation*'²¹ that gives basis to the State of Nature theories. However, the idea of historicity in the Entitlement Theory suggests us a different rationale. Nozick, there, wants to argue that the acquisitions and appropriations of property should not be explained by fact-defective explanations, but rather they should be considered as real. In this case, in contrast to the idea behind the 'minimal state', theoretically, Nozick considers the Entitlement Theory as a theory which should be applied in any evaluation of property, because if minimal state turns out to be real, it will be the part of the

²¹ Nozick on page 8 in ASU mentions that *fundamental potential explanation* captures the idea of *fact-defective fundamental potential explanations*. It means that it does not depend on what have really happened.

chain of transactions of property from past to that time. Ultimately, Nozick's idea behind the Entitlement Theory is not to give a fact-defective theory but rather a fact-sensitive theory. Suffice to say that arguments based on these early hominids were legitimate by Nozick's own permissions.

The thesis has consisted of four major steps. First, I have determined the adequate formulation of the Nozickean Proviso, which has been used in the entire paper. Secondly, I described two major specimens, *Homo habilis/rudolfensis* and *Homo ergaster* in order to construct a historical case for examining the Nozickean Proviso. In the third step, I examined the theory of mind capability of these early hominids. This was crucial to show how it is possible for them to understand the Nozickean Proviso. In this case, I concluded that we can explain the theory of mind capability of *Homo habilis/rudolfensis* and *Homo ergaster* with two separate accounts of the simulation theory of mindreading. Finally, and conclusively, the task was to analyze the Nozickean Proviso by means of the mindreading capabilities of these specimens. Ultimately, I have shown that *Homo habilis/rudolfensis* were unable to understand the Nozickean Proviso alters the Entitlement Theory because the claim of historicity has got actually some boundaries that Nozick does not mention.

This project brings us some new questions, some of which I have referred to in the footnotes and some I have not mentioned so far. For instance, questions of how the notion of property and well-being can be best explained in such cognitively less facilitated hominids. In this case, as I have emphasized, contemporary debates concerning property and well-being should be reconsidered, if we want to explain these notions by avoiding the temporal chasm between now and then. Secondly, other interesting work may be done with the Lockean Proviso, especially with the 'mixing labor' criterion. More precisely and intuitively, it seems

at first glance that the 'mixing labor' criterion can be applied to that stage of time easier than the Nozickean Proviso because it can be argued that it does not require any mindreading activity. Finally, the issue concerning the cognitive breakthrough after the evolution of bipedalism seems to be an interesting area for political philosophy. I've described some of the important consequences of the evolution of bipedalism in the 2nd chapter and it seems to me that the cognitive and social tools that these early hominids acquire by the evolution of bipedalism can have very important moral significance, which can illuminate any factsensitive study on moral rights and obligations. It is my hope to see such studies that can shape our conceptual framework in the near future.

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