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Ownership, preferences, and offers

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Abstract
The *Action Theory of Exchanges* is based on three main assumptions: i) an exchange is motivated by people having convergent preferences, ii) people exchange actions, and iii) offers and acceptances are crucial parts of an exchange and they bring about rights and obligations. The main aim of this paper is to discuss three aspects of this theory to better understand its ontological implications and, possibly, improve it. I first examine the expression “transferring the ownership” by showing an ontological issue behind it; after that, I propose an interpretation that might solve this issue. I then show that convergent preferences are not enough to motivate an exchange; accordingly, one has to introduce two more preferences possessed by the agents. I finally propose a characterization of buying and selling (and buyer and seller) which, in addition to being compatible with the *Action Theory of Exchanges*, has the advantage of accounting for both monetary and non-monetary exchanges.

Keywords: Economic exchange, Ownership, Offer

1. Introduction

The action of exchanging is crucial in almost any area of the economy (Bastiat 1996; Buchanan 1964; Buchanan 2001), and it has special relevance in the services sector to which finance belongs (Clark 1940). Many exchanges occur in the legal system through formal agreements. However, while the nature of legal contracts in general is widely studied (see Markovits & Atiq 2021), the nature of economic exchanges, in particular, has been neglected by both philosophers and economists. Massin and Tieffenbach (hereinafter M&T) (2017) have the merit of having tried to fill this gap by presenting what they call the *Action Theory of Exchanges* (ATE), a metaphysical account of, precisely, the action of economic exchange.

This work is valuable for both theoretical and practical reasons. First, it improves our philosophical understanding of the economic realm which, given the phenomenon of financialization,[1] is an increasingly large part of the social world. Secondly, the ATE offers insights that are seen as helpful in defining economic terms which has recently been the focus of some research in applied ontology.[2]

The main aim of this paper is to discuss some aspects of the ATE, and thus to improve our understanding of voluntary exchanges performed by human agents in both formal and informal contexts.[3] In what follows, I first present the ATE and then provide some suggestions as to how

[1] The term financialization refers "to the increasing importance of the financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international levels" (Epstein 2002: 3). As a result, finance and its dynamics have spread to other social sectors, including, for example, higher education (Eaton et al. 2016; Banerji 2018).

[2] See, for example, Vajda et al. 2019; Blums & Weigand 2020; Porello et al. 2020; Merrell et al. 2021.

[3] With “formal contexts” I mean contexts governed by formal rules, meaning rules that are created and explicitly formulated by state institutions, corporations, interest groups, and political parties; with “informal contexts” I mean

one might make it ontologically more acceptable. Finally, I present a characterization of buying and selling that, in addition to being compatible with the ATE, can account for both monetary and non-monetary exchanges.

2. What is an economic exchange?

The ATE is supposed to overcome the limitations of the *Standard Theory of Exchange* (STE), and thereby provide a more encompassing account of the economic exchanges. According to M&T (2017: 173), the STE is a collection of general beliefs about economic exchanges that, while not typically spelled out explicitly, are assumed by economists. In what follows, I will summarize the STE and its drawbacks as pointed out by M&T (2.1). I will then present the ATE (2.2) and the arguments in its favor (2.3).

2.1 The Standard Theory of Exchange (STE)

According to M&T (2017: 173-174), the STE is based on three main assumptions. First, the things to be exchanged are goods.[4] Second, when an exchange occurs, the goods are *mutually* exchanged by the agents. Third, the agents have inverse valuations of what they are exchanging, meaning that they value more the good they are acquiring than the good they are relinquishing. Suppose, for example, that I buy some groceries, and that I pay with banknotes. In this exchange, the goods exchanged are food and banknotes which are both material goods. I am transferring some banknotes to the grocery store, whereas the grocery store is transferring food to me. The exchange is motivated by the fact that I value the food I am buying more than the money I am relinquishing, and the grocery store values my money more than the food they are providing.

M&T (2017: 178-180) point out that the STE, though tacitly accepted by economists at large, does not provide a satisfactory characterization of the nature of economic exchange because it is both incomplete and restrictive. It is incomplete because it does not account for all the steps involved in an economic exchange; more precisely, the STE misses three crucial aspects. First of all, the fact, for example, that the grocery store and I have inverse preferences about the same goods is not enough to motivate the transfer; something else has to happen to explain why the agents agree to mutually transfer the goods instead of simply trying to take the good they value more without relinquishing the good they value less. In other words, something else has to happen to explain why I prefer to relinquish money to the grocery store instead of trying to take the food and keep my money (if one does not take into account other elements, this second option would be more profitable for me).

Moreover, the STE does not make explicit that a good is transferred in exchange for another good. While it is true that I am transferring money to the grocery store, and the grocery store, in turn, is transferring food to me, there is a relation between these two transfers that needs to be spelled out. Indeed, I am transferring money *against* food, whereas the grocery store is transferring food *against* money, meaning that I transfer money on the condition that the store transfers some food, and *vice versa*.

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context governed by informal rules, meaning rules which are typically unwritten, and created and shared outside official channels (Helmke & Levitsky 2004). A house sale, a purchase on Amazon, and shopping at the grocery store are examples of exchanges performed in a formal context. Kids selling lemonade and trading babysitting with friends are, instead, examples of exchanges performed in informal contexts.

[4] The term "good", here, has to be understood as referring to both material (tangible) and immaterial (intangible) things. As a consequence, to account for exchanges involving services, one has to consider services as a sub-type of immaterial goods (see, for example, Varian 1992: 314).

Finally, the STE does not take into account the relevant claims and obligations arising during an economic exchange, but these seem to be an important part of the exchange process. When I have transferred money to the cashier at the grocery store, then I have a claim to the food I am buying, whereas the grocery store has an obligation to provide this good to me. This claim and this obligation disappear when the food is finally handed over.

Even when completed, however, the STE would remain flawed because, according to M&T (2017: 181-184), it could be applied only to a limited number of cases. Indeed, the STE assumes that an economic exchange always entails a transfer, but in many cases, this is not true. This becomes evident if one considers a slightly different version of the example provided earlier. Suppose that, instead of buying food directly at the grocery store, I order food online and I choose to have it delivered right to my door. While it is correct to say that I am transferring money against food and that the grocery store is transferring food against money, it seems a bit odd to say that the same applies to the delivery service. There are indeed two main differences between food and delivering it: i) the food persists after the exchanging process, whereas delivering food does not; ii) before the exchange, the food is owned by the grocery store; after the exchange, the food is owned by me, whereas the process of delivering food is not something that can be owned.

Delivering food, like any other action instantiating a type of service, cannot be owned and it cannot be transferred; the delivery service, like any other service, can be just provided. M&T also notice that, in addition to services, other things cannot be transferred: non-depletable goods, such as knowledge, and un-owned goods, such as granted rights (2017: 182).

Moreover, the STE assumes that the occurrence of an economic exchange entails the existence of prior inverse preferences. But M&T show that there may be economic exchanges without inverse preferences (2017: 185-186). This is particularly evident, again, in the case of services. Suppose, for example, that Abel babysits Lilian's children on Friday in exchange for Lilian's babysitting Abel's children on Saturday. It does not seem correct to say that Abel prefers Lilian's babysitting his children to his babysitting her children. Indeed, Abel does not value Lilian's babysitting more than his babysitting, and Lilian, in turn, does not value Abel's babysitting more than her babysitting. It seems more correct to say that Abel and Lilian enter this exchange because they prefer a certain state of affairs (they babysit each other's children) than the alternative (they do not babysit each other's children).

2.2 The Action Theory of Exchanges (ATE)

The *Action Theory of Exchanges* (ATE) provided by M&T is supposed to provide a more complete and comprehensive account of the economic exchange than that provided by the STE. The ATE is based on three main assumptions: i) an exchange is motivated by people having convergent preferences, ii) people exchange actions, and ii) offers and acceptances have a central role in the exchange process.

According to the ATE, there are three groups of conditions that an exchange process has to meet: preferences and beliefs, offer and acceptance, and provisions. This means that when two parties *A* and *B* enter an economic exchange, they take the following steps (where φ and ψ refer to the actions exchanged, meaning the actions that each agent performs for the other).

(1) Preferences and beliefs:

(1.1) *A* prefers [to φ and that B ψ-s] rather than [not to φ and that *B* does not ψ]

(1.2) *B* prefers [to ψ and that A φ-s] rather than [not to ψ and that *A* does not φ]

(1.3) *A* believes that [promising to *B* to φ on the condition that B ψ-s] may convince *B* to ψ

(2) Offer and acceptance:

(2.1) *The offer*: Because of (1.1) and (1.3), *A* promises to *B* to φ on the condition that B ψ-s

(2.2) *The acceptance*: Because of (1.2), *B* accepts the offer, so *B* has an obligation to ψ

(3) Provisions:

(3.1) *First provision*: Because of (2.2), *B* ψ-s and, as a consequence, *A* has now the obligation to φ

(3.2) *Second provision*: *A* φ-s (M&T 2017: 187-188)

If an exchanging process involves exclusively goods, then there is one more group of conditions concerning inverse preferences at the beginning of the process, where *x* and *y* refer to the goods:

(0) Inverse valuations:

(0.1) *A* prefers *y* to *x*

(0.2) *B* prefers *x* to *y* (M&T 2017: 197)

In the example of the grocery store, when the exchange involves food and money, the actions involved in the exchange are: transferring the ownership of some food and transferring the ownership of some money. When the exchange involves delivery service provision and money, the actions involved in the exchange are: providing the delivery service and transferring the ownership of some money. As shown above, there are situations where an exchange involves the provision of two services: Charlotte may teach English to Francis in exchange for Francis' cleaning her room; in this case, the actions exchanged are teaching English and cleaning a room.

2.3 Main benefits of the ATE

According to M&T, one of the greatest benefits offered by the ATE compared to the STE is that it provides an account that can be applied to exchanges regardless of whether they involve goods or services or combinations thereof. This is particularly advantageous when one considers those exchanges involving a good *and* a service, as in the example of the home delivery service.

Moreover, M&T (2017: 199-202) point out that, by introducing offers and acceptances and making explicit that the preferences focus on mutual actions, the ATE has three more significant advantages over the STE. First of all, it can better justify the transition on the part of the agents from *having inverse preferences* about two goods to *making a transfer*. Indeed, I decided to transfer the ownership of some of my money to the grocery store because, in addition to preferring some food to a certain amount of my money, i) the grocery store and I have convergent preferences on mutual actions involving food and money, ii) the grocery store makes me an offer based on these convergent preferences, and iii) accepting this offer would fulfill my preferences.

Also, the interrelation between offer and acceptance make clear that the action performed by me and the action performed by the grocery store are not independent, but each is performed on the condition that the other is performed as well. Finally, taking into account the offer and the acceptance explain how claims and obligations are brought into existence: if I accept the grocery store's offer, then I have the obligation to transfer the ownership of some of my money to the store's owner; and once I have transferred this amount of my money, I have a claim on some of the grocery store's food.

3. Remarks on the ATE

While I agree with most of the arguments provided by M&T, I would like to focus on two aspects of the ATE that, I believe, need to be improved (or at least better clarified), even given practical applications, such as a realism-based ontology of economic exchanges.

3.1. Ownership

According to the ATE, when I enter into an economic exchange with the grocery store, I transfer the ownership of a certain amount of money to the store, while the store transfers the ownership of some food to me. The ATE, however, leaves unexplained the ontological nature of ownership and how it is transferred from one person to another. While this does not affect the theory *per se*, it does not facilitate the understanding of the types of entities involved in an economic exchange, and how they are related to each other.

Suppose, for example, that one aims to create an ontology representing an exchange in a grocery store; what things does one need to include? What types of entities are they? Based on the ATE, it seems plausible to include, at the very minimum, two human beings (the agents), the food, and some pieces of paper (the banknotes);[5] all these things are material objects. One can go further and include the roles carried by the agents, such as the cashier role and the customer role; roles can be seen as entities that, similarly to qualities, depend on material objects.[6] Finally, one needs to include the actions performed by the agents whereby, according to the ATE, the agents transfer their ownership of the goods involved in the exchange. Assuming that an action is an entity that i) depends on some material entity, and ii) has temporal parts,[7] how can ownership be related to actions? What type of entity is ownership?

3.1.1 Ownership rights as quasi-abstract entities

Massin (2017) points out that, in the literature, there are two main ways of accounting for ownership.[8] One can say that ownership is a bundle of rights (Hohfeld 1913), or just a single right (Penner 1995; Haller 1998). Alternatively, one can say, like Reinach (1921), that ownership is a relationship between an individual and an object, and that such a relationship grounds one or more rights over the object. Based on that, one may say that when people transfer the ownership of an object, they transfer either a right or a bundle of rights, or a relationship grounding a right. None of these options, however, really help us to fully understand the ontological nature of ownership. This is because they all, albeit in different ways, refer to rights, which are entities that themselves need to be accounted for.

An ontological characterization of rights is offered by Smith (2008), who considers them quasi-abstract entities.[9] A quasi-abstract entity is a *sui generis* social object that, on the one hand, like numbers and other abstract entities, is non-physical *and* non-psychological; and, on the other hand, unlike other abstract entities, it is historical, meaning that it exists in a certain interval of time. Such an entity is anchored to the physical world by being recorded on a material support, such as

[5] I am assuming, for simplicity, that this is a cash transaction.

[6] For more detailed characterizations of roles, see, for example, Arp & Smith 2008.

[7] For a more detailed characterization of the process that can be seen as a super-class of action, see Smith 2013.

[8] As Massin, I consider "ownership" and "property" as interchangeable terms. However, I prefer to use the term "ownership" because it is less ambiguous than "property".

[9] Elsewhere (2003a; 2003b), Smith also refers to things like rights as "free-standing Y terms"; "quasi-abstract entities" and "free-standing Y terms" are thus terms used to refer to the same type of entities.

a document or a person’s head. Other examples of quasi-abstract entities include: debts, permissions, obligations, and bond derivatives, but also works of music, computer programs, and, more generally, any information content entity.[10] Therefore, if one assumes, for simplicity, that ownership is a single right, then the ownership right is, on Smith’s account, a quasi-abstract entity.

3.1.2 Rights without rights

While the introduction of quasi-abstract entities is, in some cases, a valuable tool, Donohue (2018; 2020: 139-157) calls into question the choice of accounting for deontic powers, meaning things such as rights, permissions, and obligations, in terms of quasi-abstract entities. Donohue, thus, proposes a more conservative solution, that is, to account for deontic powers by simply considering the information content of agreements and regulations.

More precisely, Donohue argues that, in order to account for the ownership right, it is enough to include in an ontology the information content of some regulations, such as the Civil Law, the owner, and the object owned. In order to account for the ownership right, it is not necessary to postulate the existence of a second quasi-abstract in addition to the information content of the regulations.

This means that when I say, "I have the ownership right over this laptop", I am actually saying, "There is a regulation that allows me to perform actions *x*, *y*, and *z*, with this laptop”. The expression “ownership right”, hence, does not denote an entity (a quasi-abstract entity, in Smith’s account), but a *situation* where the only quasi-abstract entity needed is the information content of some regulation.

3.1.3 One label, many actions

I am inclined to embrace Donohue’s theory because, although it moves away from the ordinary language, it allows the creation of a leaner ontology avoiding including entities that do not seem to have any explanatory benefits. The problem with this choice is that it seems to make the original problem (that is, what people really transfer when they transfer the ownership of an object), more complicated. If the term “ownership right” does not denote an actual entity, then the “ownership right” is something that can neither be transferred nor be grounded on a relationship. How can one thus account for the state of affairs created by an economic exchange, such as the fact that people start (or stop) owning objects?

Assuming, with M&T (2017) that when two people *A* and *B* engage in an exchange, they exchange actions, one might argue that, if the exchange involves two goods, say, *x* and *y*, then the agent *A* simply transfers *x* to the agent *B*, while *B* transfers *y* to *A*. This exchange is regulated by the information content of some regulation or agreement (the latter can be oral and have an informal character). Such an information content determines that *A* and *B*, by performing their actions, acquire respectively the role of merchant and the role of customer. The information content also determines that, in virtue of their role, they are permitted or obliged to perform other actions. If, for example, I transfer some money to the grocery store to buy some food, I am acquiring the role of customer and, in virtue of this, I am permitted to own this food, meaning doing certain things

[10] An information content is here intended as an abstract pattern made concrete by something material such as the ink marks on a piece of paper. An information content, thus, depends on *at least* one material object (although the same piece of information can be concretized by, for example, the ink marks on many different pieces of paper). Some examples of information content include the novel “Pinocchio” and the content of this paper. For more details, see Arp et al. 2015: 105-107; Smith & Ceusters 2015.

with it (bringing it out of the store, eating or selling it); I am also permitted to do something more, such as complaining to the store if I experience problems with that food and, in serious cases, even taking the store to court.

This proposal certainly has the advantage of avoiding the ontological complications entailed by the thesis that people transfer the ownership of things, but, unfortunately, it can be applied only to those exchanges involving material objects that can be moved from one person to another. If, for example, *x* is a piece of land, *A* does not actually transfer it to *B*; *A* is just accepting to lose the role of the owner with all the possibilities associated with it.[11] The very same applies to exchanges involving non-material objects such as stocks, bonds, and derivatives where, again, agents do not physically move them, they just accept a change in their roles.

A possible way to handle the problem is to try to make the ATE and Donohue's account compatible by pointing out that the expression "transferring the ownership" is just a *façon de parler,* a label that, for reasons of convenience, is given to the different actions an agent may perform when she accepts to enter into an economic exchange. In the case of material and movable goods, for example, an agent may express her decision to enter into the exchange by (literally) transferring the goods to the other agent. Instead, in the case of unmovable or non-material goods, an agent typically expresses her acceptance to enter into the exchange by signing a contract (or, in less formal contexts, just by shanking the other person's hand).

This solution allows us to maintain the benefits of Donohue's account without sacrificing any relevant aspect of the ATE. It seems also that this solution is in line with a well-known approach in social ontology that makes use of constitutive rules to account for social entities (see Searle 1969; 1995). One can say, thus, that in virtue of certain constitutive rules, it is true that under certain circumstances performing certain actions *counts as* transferring the ownership of the good involved.

3.2 Preferences

One of the criticisms that M&T (2017) bring against the STE is that *having inverse preferences* is not enough to justify a transfer. Even if I prefer some food to some of my money, the most profitable course of action for me is to try to take the food *and* keep the money. For that reason, they say, it is crucial to grant that, in addition to inverse preferences concerning what they want, people have convergent preferences on the course of action they want to take. More specifically, M&T (2017: 188-190) point out that both parties have to prefer to mutually exchange rather than to not mutually exchange, where to *not* mutually exchange means that the grocer does not transfer some food to me and that I do not transfer some money to the grocery store.

I argue that this is still not enough to motivate the exchange. Indeed, the convergent preference to mutually exchange rather than to not mutually exchange (where, again, to not mutually exchange means that people just keep what they already have), is not a convergent preference on *the* course of action the agents want to take, but it is just a convergent preference on *a* course of action the agents *may* take. Indeed, this convergent preference still does not rule out the most profitable course of action which is, for me, to try to get the food without relinquishing money, and, for the grocery store, to try to get my money without relinquishing the food.

The ATE, as it is, is thus incomplete, although in a different (and much less serious) way than the STE. The difference is that, in the STE, the explanatory gap is located between *having inverse preferences* and *making a transfer*, whereas, in the ATE, the explanatory gap is located between *having convergent preferences on* a *course of action* and *making a transfer*. A good way to fill the

[11] I am indebted to one of the reviewers for this point.

explanatory gap in the ATE is, I think, to specify that the people involved in an exchange prefer, for some reasons (such as avoiding legal issues), to get what they want rather through an exchange than without it.
One can, thus, add a couple of additional preferences at the early stages of the process, such as:

> (a) The grocery store owner prefers [to transfer some food to me and that I transfer some money to him] rather than [to not transfer some food to me and that I transfer some money to him]
> (b) I prefer [to transfer some money to the grocery store and that the grocery store transfers some food to me] rather than [to not transfer some money to it and that the grocery store transfers some food to me]

These additional conditions make clear that trying to get what the agents want without relinquishing anything is *not* the most rational course of action for them anymore; this fills the gap in the schema.
A general version of the aforementioned conditions is the following (where, again, φ and ψ denote the actions that the agents are supposed to perform to enter into the exchange).

> (1.3) *A* prefers [to φ and that *B* ψ-s] rather than [not to φ and that *B* ψ-s]
> (1.4) *B* prefers [to ψ and that *A* φ-s] rather than [not to ψ and that *A* φ-s]

Those conditions complete the ATE and help better explain why the agents choose to enter a mutual exchange instead of simply trying to get what they want.

4. Buying and selling
M&T (2017) do not offer an account of buying and selling; in this last section, I thus try to offer an explanation compatible with the ATE. I first consider the pros and cons of the account of buying and selling offered by Merrell et al. (2021) (4.1), after which, I present my own proposal (4.2).

4.1 Four acts
Merrell et al. (2021) provide the most recent and comprehensive ontological characterization of buying and selling. They point out that an act of buying takes place when agent *A* receives a good or service from agent *B* and, because of that, *A* has to make a payment to *B*. Conversely, an act of selling takes place when agent *B* provides a good or service to agent *A* and, because of that, *B* has to receive a payment from *A*. Merrell et al. also argue that payment does not necessarily involve money; accordingly, they reject the view that buying always entails the relinquishment of money and that selling always entails the offer of a good or service.
This account has the disadvantage of being contrary to common sense and some prominent literature (see, for example, Mill 1974; Merger 1892; Fisher 1906). But, on the other hand, according to Merrell et al., their view allows us to account for two particular (and somehow problematic) instances of commercial exchange: bartering, meaning an exchange where no money is involved, and currency exchange, meaning an exchange where only money is involved.
Merrell et al. decide, thus, to follow Walras (1954), and argue that, in an economic exchange, there are two acts of buying and two acts of selling because each agent both provides and receives something. When, for example, Ellie gives Abby an apple in exchange for one dollar, one can distinguish four different acts. “One act is Ellie relinquishing ownership of the apple, another is

Abby taking ownership of the apple. A third is Abby relinquishing ownership of her dollar, and the fourth is Ellie taking ownership of that dollar" (Merrell et al. 2021: 7).

I agree with Merrell et al. that an account of economic exchanges should be applicable to bartering too, because, despite what one might think, barter and barter-like transactions[12] are still relatively common even within industries and firms at both the domestic and international levels (see Prendergast & Stole 1996; Oliver & Mpinganjira 2011). I also agree that an account of economic exchanges should be applicable to currency exchanges, meaning those exchanges where a certain amount of money in a given currency, such as dollars, is changed into another currency, such as euros. I do not think, however, that is correct to see a currency exchange as an exchange involving *just* money and that, as such, it requires a special consideration. Indeed, Merrell et al. seem to imply that when two agents *A* and *B* enter into a currency exchange, *A* is transferring some money to *B*, and *B* is transferring some money to *A*. But this is not the way currency exchange actually works. Currency exchange is a service where an agent *A* pays a fee in order to have her currency exchanged. Therefore, here, the actions exchanged are: transferring money and providing the currency exchange service, not transferring money, and transferring money. Merrell et al.'s worry can be applied, at most, to those currency exchanges taking place among two friends who do not have any intention to make a profit other than having the currency they want. This is, however, a borderline case; more importantly, one may argue that currencies, here, are treated as mere commodities; consequentially, this exchange can perhaps be seen as an instance of bartering.

Besides that, the main problem with the account offered by Merrell et al. concerns the view of Walras. First of all, it is difficult to see how, during an exchange, the phase of provision is constituted by four acts. Suppose that Adele buys a lamp from an Amazon seller. The phase of the provision seems to be characterized by two acts (as the ATE rightly points out): i) Adele transferring money to the Amazon seller (that, as we have seen, *counts as* transferring the ownership of the money), and ii) the Amazon seller transferring the lamp to Adele (that *counts as* transferring the ownership of the lamp).

Obviously enough, right after having transferred her money to the Amazon seller, Adele loses the role of the owner of that amount of money, whereas the Amazon seller acquires it. The Amazon seller, however, does not need to perform any act in order for his owning the money to be initiated. Similarly, when the Amazon seller delivers the lamp to Adele, he loses the role of the owner of the lamp, whereas Adele acquires it without needing to perform any further act. Merrell et al. seem thus to confound the actions actually performed with their deontic consequences.

Secondly, to say that each exchange has two acts of selling and two acts of buying (and, as a consequence, that each agent has both the role of buyer and the role of seller at the same time) is clearly against common sense and, more importantly, deprives us of the possibility to distinguishing the two agents which, in virtue of their different roles, are permitted or obliged to perform certain actions. The buyer, for example, is obliged to pay the price of the goods, whereas the seller is obliged to deliver the goods.[13] It is precisely because of this that, if problems arise, one of the parties can potentially file and win a lawsuit.

4.2 Offer and price

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[12] Barter-like transactions are exchanges that take place without the use of money but, unlike traditional barter, their performance can occur over a long period of time. An example is the construction of a plant exchanged against a portion of the plant's output (UNCITRAL 1979: 37).

[13] United Nations Convention on Contracts for the International Sale of Goods (1980): art. 53.

In the previous paragraph, I mentioned that the buyer has the obligation to pay the price. With the term "price", I mean "the amount of money or *other consideration* asked for or given in exchange for something else; the cost at which something is bought or sold"[14] [emphasis added]. The price, thus, is not something pertaining exclusively to monetary exchanges, and it can be seen as the condition an agent has to fulfill in order to acquire a good or benefit from a service. However, while it is uncontroversial that, in monetary exchanges, the price is expressed in terms of money, and the agent who transfers money is the buyer, it remains unclear what is price in a non-monetary exchange, and which agent has to pay it.

To address this issue, one may try to detect a pattern of interaction in monetary exchanges that characterizes the buyer and the seller besides the element of the price, and then try to identify the same pattern in non-monetary exchanges in order to distinguish the agents. One may say, for example, that in monetary exchanges, the agent transferring money acts first, and her action binds the other agent to transfer the good (or provide the service). One may thus conclude, as a general rule, that the agent acting first is the buyer. Unfortunately, although the agent transferring money typically acts first, there are important exceptions that must be taken into account. If the agents opt for the payment-after-delivery method, for example, then the agent who transfers the good (or provides the service) acts before the agent who transfers the money.

Alternatively, one may focus on the offer and who makes it. At first sight, this does not seem to be a good idea because both buyers and sellers can make offers. However, their offers differ, and so the *type* of offer made can be the key to distinguishing the seller from the buyer. In monetary exchange, when a person decides to make a certain object available for exchange, say a piece of furniture that does not fit into the new apartment, then her offer goes something like: "I promise that, if someone gives me 100 dollars, I will give to them this piece of furniture". The offer does not have a specific addressee, and it is open to anyone willing to accept it. The offer made by a person who wants to get a certain good, instead, usually targets a specific person and object. For example, I would like to make an offer to buy the house where I used to spend the summer when I was a child. This offer would have a specific addressee, that is the current owner of the house and would concern *that* specific house. The offer, thus, would go something like: "I promise that, if you make this house available for exchange, I will give you a certain amount of euros in order to have it".

As a general rule, thus, I would say that, in monetary exchange, the offer made by a seller is *aspecific*, meaning that it is *not* directed towards a specific person, but to anyone willing to accept it. In contrast, the offer made by a buyer is *specific*, meaning that it is directed toward a specific person. I am aware that there are few counterexamples to these general rules. It may happen that, during the move to a new house, a person says to one of the movers: "Do you like this piece of furniture? I promise that, if you give me 100 dollars, I will give it to you". This is a *specific* offer, but still, the speaker is the seller, whereas the addressee is the buyer. Or one can imagine that, at the beginning of the COVID-19 pandemic, when there was a scarcity of face masks, someone who really needed one said: "I promise that, if someone gives to me a face mask, I will give 10 dollars to her". This is an *aspecific* offer, but still, the speaker is the buyer. These two cases, however, are far from being standard modes of making offers; they seem to be borderline cases and, as such, they do not seriously question the general rule.

The distinction between aspecific and specific offers can be thus applied to non-monetary exchanges in order to distinguish the buyer from the seller. Consider, again, the example of Abby, Ellie, and the apple. Suppose that, in this case, the exchange does not involve money, but another

[14] Garner & Black 2009: 1308.

piece of fruit, say an orange. Suppose that Abby makes the offer, and says: “I promise that, if someone gives me an orange, then I will give this person an apple”, and that Ellie accepts the offer. In this case, I would say that, since the offer is aspecific (it is not specifically directed to Ellie), then Abby is the seller whereas Ellie is the buyer; in this specific exchange, an orange is thus the price to pay, and by paying it, Ellie binds Abby to give the apple to her.
If, on the other hand, Abby's offer sounds like: “I promise that, if you make this orange available for exchange, then I will give this apple to you to have the orange”, then one may assume that, in this second case, Abby is the buyer, whereas Ellie is the seller, and the apple is the price to pay in order for Abby to bind Ellie to give the orange to her. The obvious consequence is that, in non-monetary exchanges, the same object can, in one case, count as the price to pay and, in another, be the good an agent is paying for.
This account of buying and selling has three main advantages: first of all, it avoids a proliferation of unnecessary entities by maintaining that the provision phase of an exchange consists of two actions: transferring a good (or providing a service), and paying the price for that good (or that service). This is, *inter alia*, compatible with the ATE. Secondly, my account maintains that, in an exchange process, an agent sells and the other buys, as a consequence one is the seller and the other is the buyer. There is no way that an agent can buy and sell in the same exchange process. This reflects both common sense and what happens at the legal level. Finally, this account can be applied to exchanges involving monetary goods as well as non-monetary ones, and it is thus suitable to explain bartering too.

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