

## Micro-philosophical foundations of competition

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### Introduction

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### Introduction

It is perhaps fair to say that philosophical *action theory* is in good shape. Like in all scientific disciplines there are controversies and difficulties, but there is also a solid consensus as to the phenomena to be explained, there are paradigmatic theories constantly being made reference to, and there are classic contributions providing starting points for old insights and new debates.<sup>1</sup> All in all, action theory is regarded as a decent, well-established, and worthwhile field of study in its own right.

The situation seems different with the study of human action in the practical disciplines and the social sciences. In economics, for example, there is the famous rant of 20th century luminary *Paul Samuelson* that the study of human action in economics gives “reason to tremble for the reputation” of the subject.<sup>2</sup> How can this be if economics is, as *Alfred Marshall* famously stated, “a study of mankind in the ordinary business of life” and an examination “of individual and social action”?<sup>3</sup>

Since the explanandum of economic theory is economic action it would seem that an enquiry into the nature of *action in general* should have a bearing on its subdomain. The present talk aims at making good on that assumption. It delineates from scratch how a substantial conception in economic theory may fundamentally benefit from insights drawn entirely from philosophical action theory, properly understood.

The field of application is the central concept of *competition* which comes with far-reaching policy implications. Today, the notion is accounted for in the dominant equilibrium picture of *perfect* competition.<sup>4</sup> But it has been noted for some time now that there remains something important missing:

The popularity of the concept of perfect competition in theoretical economics is as great today as it has ever been. [However, the] limitations of the concept in dealing with condi-

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<sup>1</sup> Cf., e.g., Anscombe 1957; Davidson 1963; von Wright 1971.

<sup>2</sup> Samuelson 1964, 736

<sup>3</sup> Marshall 1890, 1

<sup>4</sup> Cf., e.g., Arrow & Hahn 1972.

tions of persistent and imperfectly predicted change will not be removed until economics possesses a developed theory of change.<sup>5</sup>

What is being left out is precisely what action theory is all about: The (economic) *agent*. Action theory can help putting him back in.

Oddly enough, economists themselves have pointed out the fact that originally the agent did occupy a central position in the understanding of the term: “Competition entered economics from common discourse, and for long it connoted only the independent rivalry of two or more persons.”<sup>6</sup> Action theorists will quickly realise, however, that *rivalry* can be fully accounted for using action theory and the philosophy of mind only. This talk very narrowly explores this idea and very briefly touches upon the ensuing theoretical and practical implications.

To this end the talk is organised as follows: Basics of action theory and the philosophy of mind are outlined in sections 1 and 2. Section 3 introduces the notion of competition and section 4 offers an action-theoretic analysis. The closing comment wraps it up and puts the result in context.

## 1. Subjectivity

Acting is necessarily motivated. Motivation is necessarily intentional. This chain of reasoning invokes the philosophy of mind. There we need to add that what motivates the one does not necessarily motivate the other. This leads to the issue of *subjectivity*. Even critics of the subjective see this. Says *Donald Davidson*: “A reason [explains] an action only if it leads us to see something the agent saw, or thought he saw, in his action”.<sup>7</sup> Agreed. But how is this not just an idiosyncratic way of inadvertently conceding that motivation is necessarily subjective. With motivation being both intentional and subjective the question arises: What is their interrelationship? If we want to understand the basic tenets of human action we need to understand what intentionality is, how it relates to subjectivity, and why we cannot simply eliminate the subjective altogether.

A natural starting point is the traditional contention that the objective is what is *independent of the mind*, while the subjective is what *depends on the mind*.<sup>8</sup> But in what sense does a seemingly subjective judgement like “Haggis is delicious” depend on the mind while a seemingly objective judgement like “Two is prime” does not? Some would point at truth-values, but that fails to do justice to that divide, which is one of understanding: Under the assumption that nobody ever had, has, will or would have any attitudes whatsoever towards the famous Scottish dish the claim that Haggis is delicious is simply rendered *unintelligible*. In contradistinction, the corresponding assumption concerning the number two is not.

What everyday parlance describes when we say that somebody *believes* something, or *wants*, *hopes*, or *fears* it, philosophical jargon defines as entertaining a *propositional attitude*.<sup>9</sup> Still, attitudes are not sophisticated artefacts but elements deeply ingrained in our mental universe. In explaining *intentionality*, which he took to be the essence of the

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<sup>5</sup> Stigler 2008, 8

<sup>6</sup> Stigler 1957, 1

<sup>7</sup> Davidson 1963, 1

<sup>8</sup> Cf., e.g., Oliva Córdoba 2018; Burge 2010, 46; Knebel 1998, 40678; Nagel 1974, 436; Frege 1884, 34.

<sup>9</sup> Cf., e.g., McKay & Nelson 2010; Matthews 2007; Baker 1995; Anderson & Owens 1990; Richard 1997 & 1990; Fodor 1978; Quine 1953, 142; Russell 1918, 227.

mental, *Franz Brentano* emphasised two features: *directedness* and *inexistence*.<sup>10</sup> Theorists usually focus on directedness, sometimes termed “*aboutness*”.<sup>11</sup> But only inexistence gives us a non-metaphorical understanding of intentionality:

Brentano’s central claim that “every mental phenomenon includes something as object within itself”<sup>12</sup> is best understood when considering something very mundane. Imagine a little boy afraid that Santa Claus might not come to his house for Christmas. To the quality and phenomenology of his fear it does not make any difference whether Santa does or does not exist.<sup>13</sup> Quite generally, from anyone’s *believing*, *wanting*, *hoping*, or *fearing* that  $p$  it must not be inferred that  $p$ , nor vice versa. This is what inexistence boils down to: If you will, Santa Claus “*exists in*” the boy’s mental state, whether real or not. Little consideration is needed to see that this enshrines the individual’s *subjective perspective*. It resides in this fact of non-entailment: What man believes, wants, hopes, or fears, etc. ( $\Delta_x p$ ), does not entail it is the case ( $p$ ), nor vice versa:

- (SUB) (i)  $\Delta_x p \not\vdash p$   
(ii)  $p \not\vdash \Delta_x p$

So, the totality of attitudes manifests how man *conceives* of the world, not how it is. But in this totality also resides man’s *individuality*. One’s attitudes carry no prejudice for others. What one believes, wants, hopes, or fears, etc. ( $\Delta_x p$ ), does not imply that another has the same attitude ( $\Delta_y p$ ), nor vice versa. So (for  $x \neq y$ ):

- (IND) (i)  $\Delta_x p \not\vdash \Delta_y p$   
(ii)  $\Delta_y p \not\vdash \Delta_x p$

Actually, we might even generalise *John Locke* and say that two subjects perfectly indistinguishable with regard to their attitudes would be *the same person*.<sup>14</sup>

It is the intentionality of the mental that is responsible for these important features. But there are physicalists aiming at doing away with the mental as something allegedly unreal and reducible to the physical.<sup>15</sup> That, however, is overlooking the logical impediment that, while the physical is taken to be extensional, intentional contexts cannot be logically reduced to extensional ones. There is simply no intelligible extensional reading of the intentional operator “ $\Delta_x$ ”.<sup>16</sup>

## 2. Action Theory

In the previous section we came to understand what it means for something to be subjective: it means being conceived of as (directly or indirectly) depending on someone’s attitudes. Now we need to understand what action is. Here, we will let our everyday talk

<sup>10</sup> Brentano 1874, 68. Cf. Crane 2009; 2006; 1998.

<sup>11</sup> Cf., e.g., Jacob 2019, Yablo 2014.

<sup>12</sup> Brentano 1874, 68

<sup>13</sup> At least not unless he comes to *believe* that he does not exist. But then again, one might come to believe that something exists whether it exists or not. So, for the world *there is no way of bypassing the “iron curtain” of intentionality*.

<sup>14</sup> Cf. Locke 1690, II.27.9: “[S]ince consciousness always accompanies thinking, and ‘tis that, that makes every one to be, what he calls *self*; and thereby distinguishes himself from all other thinking things, in this alone consists *personal Identity*, i.e. the sameness of a rational Being: And as far as this consciousness can be extended backwards to any past Action or Thought, so far reaches the Identity of that *Person*”

<sup>15</sup> Cf., e.g., Davidson 1986 and the discussion in Ludlow et al. 2004.

<sup>16</sup> Cf. Ditmarsch et al. 2015, 7; Hintikka 1962, 10 & 142; also Quine 1953, 142f.

about action be our guide. Using the long-established method of *variation*,<sup>17</sup> we can identify the underlying basic categories of action in what a competent speaker would identify as action reports. This method is common practice among formal theorists like logicians, semanticists, and linguists. They use it when defining basic categories via distribution,<sup>18</sup> although, of course, they apply it to their respective domains.

*Our* starting point will be that action reports can be viewed as substitution instances of one another if properly regimented. This holds across different contexts, styles and registers. Thus,

(1) Peter starts running because he wants to catch the bus and believes he will manage to do so if he starts running

and

(2) Oedipus married Iocaste because he wanted to become king of Thebes and believed he would if he did

result from one another by substitution *salva congruitate*. This means that the replacement of a suitable non-logical part of speech by a categorically equivalent one does not turn an action report into something that would not count as such. Of course, substituting “Oedipus” in (2) with “Peter” from (1), or “wanted to become the king of Thebes” in (2) for “wants to catch the bus” in (1), and so on, is apt to lead from a correct action report to one that is most likely incorrect. However, since what we are interested here is not truth but rather logical form and conceptual structure, this difference does not matter in the present context. On the contrary, the analysis gives us the *canonical form of action reports*:

(CF)  $x \varphi$ -s because  $x$  wants that  $p$  &  $x$  believes that  $x \varphi$ -s  $\rightarrow p$

Against this background we can bring some logico-linguistic insights to bear. From a distributional perspective (CF) manifestly highlights the basic categories of action:

(CF)  $[x]^a [\varphi$ -s]<sup>b</sup> because  $[x$  wants that  $p]$ <sup>c</sup> &  $[x$  believes that  $x \varphi$ -s  $\rightarrow p]$ <sup>d</sup>

From (CF) we can extract the following formal categories: [<sup>a</sup>] *agent*, [<sup>b</sup>] *doing*, [<sup>c</sup>] *wanting* and [<sup>d</sup>] *believing*. With that accomplished we have now arrived at what is usually referred to as the classical *desire-belief model* of action. It accords with a broadly Humean view of motivation,<sup>19</sup> and it constitutes the received model accepted by action theorists, although everyone has their own respective version.<sup>20</sup> Unlike what is usually done, however, we did it in a purely descriptive way, with the most frugal theoretical presuppositions, and without the many substantial theoretical assumptions characterising so much of modern action theory.

Given this result, we are also rewarded with a formal understanding of what reasons for actions are (aka “motivating reasons”). Remember that we customarily refer to anything following the connective “because” in response to a why-question as a reason. *Why is four even?* Because it is divisible by two. *Why are dinosaurs extinct?* Because the Chicxulub Asteroid hit the Gulf of Mexico 60 million years ago. So, with regard to (1)

<sup>17</sup> Cf., e.g., Casari 2016; George 1986; Bolzano 1837.

<sup>18</sup> Cf., e.g., Burton-Roberts 2016, 46; Tallerman 2014, 34; Lewis 1970, 20ff.; Lyons 1968, 147; Ajdukiewicz 1935, 3; Husserl 1913, 242; all anticipated by Frege 1891, 31 and Plato, *Sophist*, 261d–262e.

<sup>19</sup> Cf. Hume 1739, 2.3.3.4: “Reason alone can never produce any action, or give rise to volition [...]. Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them.”

<sup>20</sup> Cf. Anscombe 1957; Davidson 1963; von Wright 1971.

and (2), the reason for Peter's running and Oedipus' marrying Iocaste follows "because" in (1) and (2), respectively. Thus, reasons for action are properly described by conjunctions of two specific propositional attitudes: Peter's (or Oedipus') wanting  $p$  in conjunction with his (or Oedipus') believing that if he  $\varphi$ -s then  $p$ .

This rather neatly aligns with our findings from the previous section. Given that one can describe reasons for actions as complex propositional attitudes, motivating reasons are clearly *subjective* and *individual* in the following way: (i) someone's reason is neither implied by how things are, nor does it imply them; (ii) a reason for the one need not be a reason for the other.

### 3. Competition

Competition is an old phenomenon and a central concept of economics. Its significance stands in stark contrast to the insufficient understanding of the phenomenon, though. The idea of *perfect competition* came into being as an effort to more precisely understand what makes competition peculiar. Perfect competition sought to provide the grounds of truth of some popular classical propositions. Among them was *Adam Smith's* contention that the greater the number of sellers the lower the price.<sup>21</sup> Another one was *John Stuart Mill's* assumption that there can be only one price in the market.<sup>22</sup> The forefathers of general equilibrium theory felt these assumptions were truisms they could render obvious in a mathematically convenient way. The imprecise understanding econometrists sought to refine, but which unfortunately they came to replace, always made reference to man's behaviour: "'Competition' entered economics from common discourse, and for long it connoted only the independent rivalry of two or more persons".<sup>23</sup>

Today, the economic mainstream typically understands competition in terms of perfect competition. Somewhat paradoxically, the original understanding is nonetheless taken for granted. It is pervasively implicit in many standard textbooks,<sup>24</sup> sometimes being stated very clearly: "Competition exists when two or more firms are rivals for customers".<sup>25</sup> All these characterisations concede that competition resides essentially in human behaviour. When it comes to *analysing* competition, however, mainstream economists routinely adopt equilibrium theory. They seem unaware that by this token the idea of rivalry is completely neglected. This is to the detriment of really understanding competition:

Economic textbooks repeat *ad nauseam* that the perfect market structure exists if (i) the number of sellers is very large and (ii) the goods traded are homogeneous.<sup>26</sup> Also, it is at least implicitly assumed that (iii) there are no transaction costs or other obstacles to free and immediate exchange and that (iv) differences in knowledge among participants in the market are negligible. The point of these provisions is to ensure that market participants have no influence over market prices. As standard textbooks put it, perfect competition "is the world of price-takers".<sup>27</sup> The econometrist aims to ensure that "the in-

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<sup>21</sup> Smith 1776, 59

<sup>22</sup> Mill 1848, 242

<sup>23</sup> Stigler 1957, 1

<sup>24</sup> *Cf.*, e.g., Acemoglu et al. 2016, 357; Pindyck & Rubinfeld 2013, 281 *et passim*; Samuelson & Nordhaus 2009, 172f.; Stiglitz & Walsh 2006, 241 *et passim*.

<sup>25</sup> Mankiw & Taylor 2014, 42

<sup>26</sup> *Cf.*, e.g., Mankiw 2020, 62.

<sup>27</sup> Samuelson & Nordhaus 2009, 150

fluence of an individual participant on the economy [...] be mathematically negligible”.<sup>28</sup> Likewise, the assumption that the goods being traded are homogeneous has a similar function. The same holds for the third provision regarding impediments to free and immediate exchange. It secures uniqueness of mapping.

From a logical perspective, then, the provisions amount to *the all-trader’s being uniquely mapped onto the all-good*. Measured against this standard, anything resembling competition in the real world is necessarily outlawed as imperfection. Because of that, however, this emerging picture of a nearly all-encompassing quasi-Parmenidean monism forfeits all explanatory power. Put more charitably: Perfect competition is about “perfection” rather than about competition.<sup>29</sup> Sure, in this picture there is neither change nor waste: The perfect market in perfect competition is a kind of Pareto optimal Nash equilibrium.<sup>30</sup> But this holds by stipulation only. And it leaves no room for competition in the original sense. So, from a methodological perspective we failed. Therefore we need to put the economic agent back into the picture.

All sound economic theorising must start with *barter* as the most basic economic state of affairs. For example, Dick’s *exchanging* his goat for Tom’s sheep involves the following:

- (a) Tom gives Dick his sheep
- (b) Dick gives Tom his goat
- (c) Tom wants Dick to give him his goat
- (d) Dick wants Tom to give him his sheep
- (e) Tom believes that if he gives Dick his sheep, then Dick will give Tom his goat
- (f) Dick believes that if he gives Tom his goat, then Tom will give him his sheep

However, no mere conjunction of (a)–(f) will do: Tom and Dick do what they do *because* they want what they want and believe what they believe:

(BE) (a) & (b) BECAUSE ((c) & (d)) & ((e)&(f))

But how do we get from here to rivalry?

#### 4. An action-theoretic analysis of rivalry

The action-theoretic analysis starts from the observation that (BE) is but a plural case of (CF):

(CF)  $x \varphi$ -s because  $x$  wants that  $p$  &  $x$  believes that  $x \varphi$ -s  $\rightarrow p$

But now we have two agents and a case of intertwined action. In a simple extension of predicate logic the exchange between Tom and Dick could be rendered thus:

(TD)  $\varphi xy$  &  $\psi yx$  because  $W_x \psi yx$  &  $W_y \varphi xy$  &  $B_x (\varphi xy \rightarrow \psi yx)$  &  $B_y (\psi yx \rightarrow \varphi xy)$

where “ $\varphi xy$ ” goes proxy for “Tom gives Dick his sheep”, “ $\psi yx$ ” for “Dick gives Tom his goat”, “ $W_x$ ” signifies “Tom wants that” and “ $B_y$ ” signifies “Dick believes that” etc. (TD) thus simply translates back into previously explained innocuous parts of speech.

<sup>28</sup> Aumann 1964, 39

<sup>29</sup> Cf. Khan 2008.

<sup>30</sup> Cf., e.g., Osborne 2004, 22.

Rivalry comes into play only if another participant enters the picture. Imagine Tom is still open to trading with Dick but now there is another trader, Harry. This gives a strictly analogous alternative possibility

(TH)  $\varphi xz \ \& \ \chi zx$  because  $W_x \chi zx \ \& \ W_z \varphi xz \ \& \ B_x (\varphi xz \rightarrow \chi zx) \ \& \ B_z (\chi zx \rightarrow \varphi xz)$

where “ $\chi zx$ ” goes proxy for “Harry gives Tom his llama”, etc. So we have two alternative scenarios which, as we will assume, are mutually exclusive: Either Tom trades his sheep for Dick’s goat, this is (TD), or he settles for Harry’s llama, this is (TH).

The last step comes from the theory of intentionality: We must take into account Dick’s and Harry’s *attitudes* towards (TD) and (TH). That rivalry comprises an intentional element is a near truism. Two runners cannot be said to be running a race just because they are speedily moving in the same direction. Many men do that every day. Rather, what makes something a race is the fact that one person wants to outperform the other. *Rivals have particular attitudes towards each other*. So the essential step is something along the lines that Dick hopes that he will make the deal but is afraid that Harry might close it instead, and vice versa. And, of course, these are propositional attitudes.

As Samuelson once put it, the role of man in equilibrium theory does not differ substantially from the role of “these individualistic atoms of the rare gas in my balloon”.<sup>31</sup> So it is hardly surprising that in this picture the essential element of competition is lacking: Atoms do not have attitudes. With our action-theoretic approach it is not difficult to put this element back in place. We just need to note that if and only if (PR) holds:

(PR)  $H_y (TD) \ \& \ F_y (TH)$

the one *perceives* the other to be a rival. And if and only if (AR) holds at least one of them *acts* rivalrously:

(AR)  $\gamma y$  because  $W_y ((TD) \ \& \ \neg (TH)) \ \& \ B_y \gamma y \rightarrow ((TD) \ \& \ \neg (TH))$

where “ $\gamma$ ” goes proxy for what, say, Dick would do in order to outperform the other.

What might that be? Well, Dick might offer Tom a discount, special trade relations, immediate delivery, or anything else he assumes will be the right incentive to win Tom over. If this is what he does in order to secure the deal, this is him acting rivalrously.

The rest is simple. We just invoke the classic assumption that competing is nothing but acting rivalrously. But in our framework this has a clear and precise sense: *Competition exists where some acts rivalrously because of perceiving someone as a rival*. So:

(COMP) (AR) because (PR)

Again, if spelled out (COMP) may be complex. But it simply translates back into previously explained innocuous parts of speech. It may be quite a mouthful but it is not logically challenging. More importantly, this understanding of competition rest only on its origins in the theory of action and intentionality as laid out in sections 1 and 2. So, we are dependent on nothing but the frugal and innocuous assumptions we incurred there and a bit of elementary logic, which is needed anyway.

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<sup>31</sup> Samuelson 1963, 1411; cf. Arrow & Debreu 1954.

## Concluding remarks

It is not difficult to anticipate that this attempt at building bridges will not be greeted with enthusiasm. Philosophy and economics lead very successful and gratifying separate lives. Why should anyone fix what is not broken?

Surely, it is useless to aim at winning anyone over. Despite deeply entrenched views, however, it is significant that *it is possible to explain competition in purely action-theoretic terms*. That result no theorist can afford to ignore. Note that it applies to competition quite generally—and not just to the subset the economists sees himself as scrutinising. If economists really wanted to distance themselves and dispute the connection between competition and rivalry this would be at least one of two things:

- (i) Failing to honour the original meaning of competition as understood by many, if not most, economist themselves;
- (ii) treating *competition-in-the-market* as a hyphenated concept that can be understood without understanding the *genus proximum*, *i.e.*, competition *simpliciter*.

Both seems unattractive from a methodological point of view. Still, there may be misgivings from economists. On the other side, philosophers now can better understand the underlying grounds of truth for important propositions economists believe they have specific economic reasons for. Also, they can assess the underlying grounds of falsity for important propositions many cling to despite evidence to the contrary.

For example, according to the above it is neither the number of sellers nor any other objective feature of market structure that drives competition. The agent's subjective attitudes are: Fear (of losing business) and hope (for still securing it). That explains why there can be competitive behaviour even in the absence of competitors: Since a given competitor may be intentionally assumed or expected in the agent's attitude even if there is none, competitive behaviour may be motivated even in absence of a real competitor. Thus a monopolist may refrain from charging excessively despite the theoretical possibility, according to mainstream competition theory, that he could set monopoly prices with virtually no price ceiling. This provides the much discussed *Coase conjecture* (that even monopolists will settle for competitive prices in the long run) with an alternative route for explanation.<sup>32</sup> This will suit those who find Coase's own explanation in terms of competing with one's future selves wanting.<sup>33</sup>

Of course, integrating the fundamentals of economic theory into philosophical action theory comes at a price. Widespread economic assumptions will appear in a less favourable light. That the number or the market share of sellers, the grade of product differentiation, or the extent of knowledge asymmetries among market participants are indicative of the grade of competition would appear unwarranted. Monopoly theory and policy would call for a very different justification. Government interventions because of assumed disturbances of "equilibrium" would be called into question.<sup>34</sup> These messages many will not like to hear. Also, economics stands to lose a lot if it does not serve the role of justifying state action. The alternative, however, to assume the connection between competition and rivalry away, is not an alternative at all.

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<sup>32</sup> Coase 1972

<sup>33</sup> Cf. Board & Pycia 2014.

<sup>34</sup> Cf. Armentano 1972.

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