Trading Fungi and the Austrian School - May 2026

In 2025, an article about fungi trading with plants was published[1] in Biophysics and Computational Biology Ecology. In the article the authors explain that fungi offer phosphorus to plants and plants offer carbon to fungi in return. Fungi created underground an infrastructure to collect phosphorus, transport these resources to plants and collect payments in the form of carbon. Like in a barter economy.

This article inspired me to elaborate from an Austrian School of Economics point of view. Presumably, plants and fungi underground act to improve their situation. Both have a very high preference for nutrients they do not own themselves, as these are needed to survive and to further grow. Plans and fungi focus on what they are good at producing, as in Ricardo´s comparative advantage and divide their labour accordingly. This cooperation is highly successful, as '70% of all plant species forming these resource exchange partnership', the authors mention.

Where two parties trade a price will develop. Austrian Economics explains his price development based on human action. Could it be that in a similar way prices develop due to natural action? The authors anticipate that fungal strategies are under selection for multiple, potentially conflicting tasks. There appears to be a trade-off between exploration and exploration. As in economics, fungi have the choice between consuming and investing, so growing over time. It seems that fungi have entrepreneurial features and that entrepreneurship plays a role in nature as it does in Austrian School theories.

The authors describe the experiment allowing them to track carbon and phosphorous transfer over time. They observed the flow of carbon and phosphorous between plans and fungi, as in a dynamic fungi-plant market process, under different circumstances and genotypes. In this piece I tried to summarise the authors experiment and observations and to provide an Austrian School perspective:

1. Plants and Fungi Trading Carbon and Phosphorus – Austrian School perspective
2. The Fungi Production structure - A Biological and Austrian School perspective
3. Fungi natural interest rate – 3 growth phases
4. Is C/P a price?
5. Conclusion & Further Research

Having read the 'Fungi-trading' article as a layman I may not have captured the finer technical details. Each section will hence include several questions in the footnotes, some requesting technical assistance, some expressing doubts or my uncertainty. I would like to ask SPUN if there is an opportunity to review or to further discuss.

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[1] Carbon-phosphorous exchange rate constrains density-speed trade-off in arbuscular mycorrhizal fungal growth – Bisot, Galvez,Kahane, van Son, Turcu, Broekman, Lin, Bontebal, Winter, Kokkoris, West, Godin, Kiers, Shimizi – PNAS Biophysics and Computational Biology Ecology – December 22 2025

1. *Plants and Fungi Trading Carbon & Phosphorous – Austrian School perspective*

Every day people make choices about how best to spend their time and energy, with the aim of improving their situation. Improving means realising goals that have not been met yet. People will act to realise the most important goals or ends, by using the means available.

When plants and fungi act, they have to make choices as well. Means as resources and time are limited or scarce, not all of their goals can be realised. They may chose as well by ranking their goals in order of importance. For people it is not the physical good properties that is important. What matters is the use value they attach to those goods and their services. This use value is subjective. In biology it seems logical to appreciate the physical properties, although even for plants and fungi the use value of in this case carbon and phosphorus is what matters[2].

In realising a higher ranked goal, a person will exchange a lower preference with a higher ranked preference. It seems the same applies to plants and fungi. If fungi want carbon and have a lot of phosphorus, fungi will be happy to exchange phosphorus for carbon with a plant that has plenty of carbon. If the plant has a high demand for phosphorus, they may transact with each other.

In a barter economy goods have use value and transaction value. Transacting and exchanging are the basis for a market economy and for co-operation between people in society. It is driving the division of labour, each focusing on what they are good at relatively speaking. This well applies to fungi too. As explained by the authors and summarised in the next section, fungi use phosphorous to a large extend for it's transaction value.

Before a person can exchange, this person has to own a good. This is what 'Say's Law' is about. In a barter economy you cannot go to a market and expect to be able to buy something, without offering a good in exchange. This good has to be made or produced first, and with this supply a person is able to demand something else. For fungi it is the same. Fungi harvest phosphorous and offer this to plants. Plants appear to adjust the amount of carbon they supply to fungi in response to how much phosphorous they are supplied. The authors of the PNAS article describe this as 'reciprocal exchange'. The authors wonder 'what (mechanisms that) underlie(s) the exchange remain(s) unclear. Do plants and fungi have fixed trading rules? Within a given plant-fungi pair is the "effective exchange rate" fixed in a manner that guarantees steady returns?'

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[2] It is not fully clear to me what use value both plants and fungi attach to the goods What exactly is Carbon and Phosphorus used for by Plants and Fungi?

When two people transact both will benefit: they value the good differently. The same principle should apply to plants and fungi. Plants selling carbon value the phosphorus more than the carbon and fungi values the carbon more than the phosphorus. Plants and fungi will keep on trading until the marginal utility of the carbon/phosphorus gained is less that the marginal utility of the phosphorus/carbon given up.

With more people, there will be more competition. People will outbid each other until one or a few most capable buyers and sellers remain. The price on which they agree will count for the entire market, other than to compensate for any transportation costs. If this would not be the case, speculators who correctly see the mis-pricing will step in. The benefit of speculators is that the market equilibrium price will be reached more quickly. With plants and fungi there will be competition too with the most capable buyer and seller succeeding to transact[3][4].

In the case of plants and fungi, the article focuses on two goods. The article explains that plants deliver 6% of their carbon production to fungi and fungi supply sometimes up to 80% of their phosphorus to their host plant. The price of carbon is then established as a certain number of phosphorus units. Similar as in human action barter trade, a certain price seems to develop in the system.

To measure the price of one unit of phosphorous expressed in units of carbon, the authors describe how they setup an experiment to measure phosphorous flows from fungi to plants and the carbon flows vice versa. They developed an AI model trained to properly measure. I refer to the article for the finer details. Both the carbon cost of network growth (which dominated fungal carbon expenditure) and phosphorous uptake rate (which limits phosphorous transfer to the plant), could be precisely estimated.

'The nutrient exchange between fungi and their host plants varies widely depending on their physical, chemical and biological environment' , the authors explain. Before continuing with the trading patterns, a better understanding of the biological fungi production structure is hence helpful.

2. *The Fungi Production Structure – A Biological introduction*

The key idea of the experiment of the authors is that both the carbon cost of network growth (the main reason for fungal carbon expenditure[5]) and phosphorous uptake rate (which limits the phosphorous transfer to the plant) is estimated during a stead state

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[3] Who is exactly 'trading'. Is it 1 fungi system that decides (same for plants) or are there several 'actors', such as cells like human beings in society?

[4] In the conclusion of their article, the authors also wonder to what extend the findings of this experiment are still valid under natural conditions. In real nature for instance, is there 1 plant/fungi combination or are fungi potentially dealing with several plants at the same time? In the latter case, could another plant (species) outbid the first one, competing the first one away? Can a fungi system find a second plant host (how does this work, just one harbour/trading place or several?)?

[5] Question: How exactly is phosphorous harvested and how much carbon does this require?

growth phase[6]. In the experimental setup the network then expands as a traveling wave with constant speed and density. The experiments were set up for the 'arbuscular mycorrhizal' or AM Fungi type, where they also compared the results for other genotypes.

The basic rationale for the steady growth is that both network building costs and nutrient uptake rates scale with 'morphological observables'. The latter is explained as follows:

1. The amount of carbon required for network construction is somewhat proportional to the total volume V of the network.
2. The ability of the network to absorb phosphorous from the environment and to transfer these to the plant host is expected to depend on the total membrane surface area S.

An important 'morphological observable' is the radius r of the fungi hyphae and the hyphal length L. The Volume V correspond to r^2 x L, the Surface S corresponds to r x L . The authors hence had great interest in measuring r, which was always a challenge before. The authors have overcome the technical challenge by training a model with AI-techniques. It turned out that the radius r was distributed broadly from 1 nanometer (ựm) to 7 ựm. The hyphae tended to increase their width over time by about 3 to 4.5 over 100 hours[7]. This way the Surface S increased, allowing for more phosphorous uptake and the Volume V increased, allowing for more transportation and carbon expenditure.

The authors found that the flow of carbon increased substantially over time. This was made possible by a production of phosphorous and an efficient transfer of nearly all the phosphorous absorbed to the host plant[8], estimated to be around 85% according to the article.

Some fungi types grow faster in volume than others. Fungal networks that grow and expand faster tended to grow sparser. This means they prohibit a lower carbon density[9]. This seems to imply that they produce more phosphorous with a view to exchange this with more carbon over time, resulting in a higher phosphorous-density for the time being.

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[6] Question: How does this relate to the 3 phases described elsewhere in the article? Would you observe a different C/P ratio is the initial high growth phase? In the article it is written that 'the cell's elemental composition is constant´. This may imply a stable biological constraint in transferring and trading phosphorous and carbon. However, if the composition is different, may this then translate into a different C/P ratio?

[7] Question: Is a higher radius growth related to a higher growth rate, so for instance different in the 3 growth phases? And, related, do you observe different C/P ratios in case of a radius growth of 4.5 compared to 3?

[8] Does this mean that fungi don't need phosphorous themselves (or to a very limited extend?)?

[9] Carbon density is defined as the change in the total amount of carbon in fungi compared to the change in the total Area of the network (where I am not sure how Area A relates to Volume V or Surface S).

The authors anticipate that fungal strategies are under selection for multiple, potentially conflicting tasks. Such a trade-off could arise from constraints due to a limiting nutrient resource. In the fungi system the trade-off was foremost determined by how much carbon was (made) available by the host plant. The carbon uptake appeared to also depend on the carbon use efficiency: the more efficient, the less need for carbon expenditure. As in economics, the more productive or efficient a process is, the less investments are required, all things equal. The speed J and which phosphorous is transported also appeared to be fairly constant and almost all (the article mentions an 85% within 100 hours) of the phosphorous production was absorbed by plants. From a layman perspective, this sounds fairly efficient.

Another important aspect of growing the fungi network is that news tips will be created for further expansion. However, some tips/branches are annihilated, for instance when they collide with other branches. This is an example of external natural circumstances playing a role in whether a fungi system can grow or not. Sometimes an entrepreneurial effort does not pay off.

The Fungi Production Structure – An Austrian School perspective

It is almost like phosphorous is used by fungi as money. Economically, money is an economic good as it provides a valuable service to its owner. Money developed in the human marketplace as a good that has the most market-able product. Horse and fish are not very market-able, as it is difficult to vary them around and divide them in smaller pieces when needed. In the past gold and silver developed as the goods which best serves people in exchanging. Goods have exchange value and use value. In the case of fungi, 80% of the P is used as money and transported as quickly as possible. Similar to as in human economics, the phosphorous is invested in such a way that it generates the highest return.

In economics terms the biological setup translates into a ‘simple’ production structure. In the 1st phase of the production structure fungi source phosphorous via the membranes. Fungi create an efficient transport system in the 2nd phase, aiming to minimise transportation costs. It appears that the infrastructure transports both the carbon and the phosphorous via the same cylinders. In the 3d phase fungi sells phosphorous as in a retail chain to the plants exchanging it for carbon (and plants vice versa). It is as if phosphorous is a good that can be harvested in the present and be exchanged for carbon in the future.

In economics terms, the ratio between the future and present amount is the interest rate. This interest rate is a compensation for giving up a certain amount of money now. It is a compensation for time forgone. The more a person prefers to own money now, the higher the interest rate this person requires by way of compensation.

Where supply and demand of all time preferences meet, a market interest rate develops. The Swedish economist Knut Wicksel [10] used the term ‘natural interest rate’ for the first time. The interest rate is determined in the time market and gets reflected in ‘the slope of the production structure’. The interest rate is the actual investment return, effectively the ratio of the future selling price (future revenue) compared to the current buying price (current costs)[11]. The natural interest rate and market prices shape the production structure together.

The trade-off between investing (in the production structure) and consuming depends to a large extend on people’s time preference. Every person naturally prefers a certain amount of money now compared to the same amount in the future. If someone has to give up a certain amount now, this person will require a higher amount in the future. The more important the present is and the more current consumption is preferred over investing in the future, the higher the interest rate is. Similarly, when a society is keen on future growth, the market interest rate will normally speaking have the tendency to go down. This implies investing more for the future and consuming less in the present. In economics it is hence the time preference that determines the trade-off between exploring/investing and exploiting/consuming.

The trade-off between in a fungi network between exploration (implying growing faster over time) and exploration (implying growing less) could be the equivalent of the Production Possibilities Frontier in economics: If in an economy invests just enough to maintain the production structure, this economy can continue producing the same amount of consumption. The economy will then neither shrink nor grow. If an economy invests more for later, implying consuming less for the time being, the production structure will be expanded and the economy will grow over time.

3. *Fungi natural rate of returns - 3 growth phases*

In a previous article[12], I argued that the natural interest rate Rn for any economy is a real return. A real interest rate is approximately the nominal interest rate minus the price inflation rate, meaning the annual change in the average price level (if such thing exists). People are saving and investing money with a view to really consuming more in the future, instead of having just more money available in the future, but with less purchasing power. In fact, we can consider saying that the natural interest rate is a subjective (real) return. This is not only because it is very difficult (or even impossible) to calculate ‘the average price level’ in economics and because of the absence of ‘an average price level’ in nature. Another reason is that ‘consuming more’ cannot be

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[10] Interest & Prices, Knut Wicksel, 1898

[11] How much time does it take to produce (and transport) P? A related question is how much carbon is needed to grow the network, allowing the fungi system to produce more phosphorous? Is this possible to find out? It would be interesting in order to kind of calculate an investment return.

[12] See www.ausecolec.eu, The Natural Interest Rate

measured, as this does not mean the same to all people. Value can never be measured, not even by prices[13].

In the natural world, it may be easier to consider the natural interest rate return to be a subjective return. This can be illustrated based on the experiments the authors have set up in petri. For these in petri experiments each time they connected one fungi system to one plant. The authors identified 3 phases, across all experiments:

1. Phase one: Exponential growth at start
   The first regime occurs at early times (t < 50 hours). The network exhibits exponential growth.
2. Phase 2: Steady growth
   The second regime begins at t = 50 hours after which the expansion seems to take place at a constant speed. This continues as long as there is plenty of phosphorous to exchange for carbon.
3. Phase 3: Limits to growth
   The third regime develops after around 8 day when a phosphorous depletion front develops. At this point there is not enough phosphorous anymore, putting a limit to further growth. No further growth does not mean a collapse of the system

In economics terms, in the beginning there is nothing and people are living foremost in the present, making sure to survive it to the next day. Over time, if a society develops in a more stable manner, people can start thinking about providing for the future. The natural interest rate has the tendency to go down, as more investment opportunities arise and more money is offered with a view to being able to consuming more in the future.

A similar approach may apply to a natural system. Before the connect with the plant, a fungal system has plenty of phosphorous, but no carbon. Then, when connected to a host plant, as if with a big bang, the system growths into development in phase 1. There is a lot of phosphorous to exchange for carbon. Investments will need to be made into developing the infrastructure. There are great investment opportunities to harvest phosphorous, to transport it in the next production phase and to exchange it for carbon over time. The real investment returns are high, as a small phosphorous investment results in a significant growth of the network, allowing the fungi to consume much more in a limited timeframe.

Once the fungi system has developed into a more mature state, the natural interest rate starts to settle in phase 2. With an efficient transport network and as long as a sufficient amount of carbon is made available by the host plant, phase 2 enters into a steady growth path, with transport taking place at a steady pace of J. Consequently, the flow of carbon increased substantially over time. The fungi growth depends on the ´physical,

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[13] Please see for an extensive explanation www.ausecolec.eu or various articles on Measuring Value at for instance www.mises.org

chemical and biological environment' , explaining why some fungi types grow faster than others.

In phase 3 circumstances change in the availability of phosphorous. When there is a limited availability of primary resources there are less investment opportunities and less opportunity to further grow. The Natural Rate Rn so to speak goes up, in this case due to an ´exogeneous factor´ that limits the supply of phosphorous.

The 3 phases show some similarities to the left side of Ray Dallio's rise and fall graph[14]. After a stellar initial growth, a period of stability arrives followed by a plateauing out of growth. Unlike in human societies, a collapsing phase does not develop. A scientific comparison between the rise and fall and nations and developments in a fungi network cannot be made. It just strikes me that it seems nature is stronger than mankind when it comes to building a resilient structure or economy.

From an Austrian Economics point of view, the artificially creating of money contributes importantly to any economic downfall. A non-scientific observation could be that the absence of a fungi equivalent of artificially growing the money supply may be beneficial to the network´s resilience. In a fungi-plant cooperating system Say's law is applicable, where first he fungi has to offer P before it can trade this for C with the plant. Artificially creating phosphorous out of nothing is simply no option.

4. *Is C/P a price?*

'Within the two-compartment petri dish setup, the fungus has access to carbon only through the plant host', the authors explain. They reasoned that 'examining the relationship between the rate of phosphorous transfer P and the rate of carbon expenditure C at every point could give insight into the nature of the nutrient exchange.' They observed 'considerable variation at the individual plant-fungal level, but also that the relationship between these 2 rates averaged across all replicates was well approximated by a straight line, with a slope of approximately 3 mass units of carbon per 1 mass unit of phosphorous.'

In a way, in economics terms, one could conclude the C/P price that developed in the marketplaces to be 3 on average. The authors note that the price C/P remains the same throughout the three growth phases[15] described in the previous sections. Whether the fungi system growth slow or fast, the C/P relationship remains the same, on average. This last word seems important to me. There are periods or circumstances where the

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[14] Please see Ray Dallio, The changing world order, Why nation succeed and fail, 2021

[15] Is it because the P and the C are going through the same hyphae/cylinder that (assuming a constant cell composition) that a choice needs to be made of how much C to retrieve vs P to deliver? Or does this drive the constant P/C price??

market price deviates from this average. But, these appeared temporarily deviations, with the 'price' returning to the mean. In economics terms, an arbitrage opportunity may have occurred, in case 'the price' was 4 carbon per unit of phosphorous?

Also, the authors explain that the 'C/P ratio is on average constant 'as long as the values of these parameters are invariant across time, space and treatments'. For instance, they found a change in the C/P ratio upon changing the genotype of the plant host. When grown with a fast growing plant root, the 'slope of the dependence of Carbon on Phosphorous increased'. Does this mean that if the 'price' of phosphorous increased to above 3, as the other plant type was growing faster and needed more nutrients[16]?

What may have been measured in economics terms is the equation of M * V = P * T. This formula is the Equation of Exchange, as part of the Quantity Theory of Money formulated by economist Irving Fisher. It states that the total money supply (M multiplied by its velocity V) equals the price level P multiplied by the volume of transactions T, representing that total expenditure equals total value of goods sold. From an Austrian School point of view this formula is not a law, as it does not explain prices, but an accounting truth. The price of a good times the number of transactions over a certain period means the same as how many times the money was spent back and forth.

In Austrian School economics a price is determined by the last unit added. For people, every person values the possession of or command over 2 goods above 1 good, 3 goods above 2, and so on. The more units of goods that are exactly the same a person has, the better this is for this person. If a person adds a second good to their possession, the use value of this second good however is less than the use value the first good offered this person. The first unit eased the most important need, the second unit a somewhat lesser important need. This is called the law of diminishing marginal utility. How much a good is worth to someone depends on the use value of the last added unit of a good. The value of a good or service is hence determined by the use value the last added unit provides for. In fungi terms we may imagine the flow of phosphorous to be fairly constant, however, not completely constant, allowing for variations in the value of the last unit of phosphorous offered. This results in the question of what units of goods plants and fungi are trading their carbon and phosphorous[17].

5. *Conclusion & Further Research*

Using robotic imaging and machine learning, the authors were able to measure in-vitro nutrient flows in AM fungi networks connected to a plant host. They made several observations

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[16] We ask the question because I am not sure about my conclusion

[17] The question is asked in the article, where we are curious to find out if it is possible to answer.

1. The authors found a systematic proportionality between carbon transfer from the plant host and phosphorous transferred by the AM fungi network. This transfer rate was fairly constant across other fungal species with the same plant host. In a human based economy, prices change continuously, as human preferences and circumstances change continuously. In the fungi system the C/P price seems more stable, not impacted by a system that is growing slow or fast and whether phosphorous is plentiful or not. The C/P relationship remains the same, on average.

   It is also observed that the C/P ratio depends on the host plant genotype. And, the authors wonder if the C/P rate might vary if the plant were trading with not just one but multiple fungal partners at the same time. From an economics point of view it is indeed interesting to explore the impact of increased competition from different type providers. In the words of the authors, 'how could a diversity of partners with complementary traits affect the P-transfer to the plants. Further exploring could help explain why so many AM-fungal species can coexist within the same niche'.

   Economically, people are living and working together in society to benefit from a division of labour, where each person can focus on producing what they are good at relatively speaking, to the benefit of whole society, resulting in a profit to society[18]. As included under footnote 4, we note this to be interesting to further explore, what is causing this deviation[19] and to learn more about fungi behaviour in case C/P does deviate from 'the average' (and if the comments under conclusion 4 here below are valid).

2. The authors observed in vitro that more host-derived carbon was transferred to fungal compartments where a greater quantity of phosphorous was available [20]. In real soils, this correlation was also observed. This seems to speak against so-called C-surplus theories that hypothesize that the amount of carbon transferred is independent of nutrient return from the fungus. The work of the authors imply that the fungi 'carbon sink strength' is not fixed by the size of the network.

   Economically seen, if a society has more means then there are plenty of opportunities to realise future goals. If a fungi system has plenty of phosphorous resources and as long as there is plenty of carbon made available by plants,

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[18] See article Society's Profit at www.ausecolec.eu

[19] Do transaction costs play a role? If the fungi network has grown, could it be that the transaction costs have increased, as it takes more time to transport the nutrients? To overcome this issue, hyphae invest to widen their radius. Investing takes time, potentially causing short term C/P fluctuations?

[20] This was not entirely clear from me in the article. What is meant by the word 'compartment'? Is this a part of the fungal system?

there are plenty of opportunities to realise their goals in further growing the fungal network. Th authors observe that plats move where the most phosphorous is available. This seems to further imply there is a role to be played by competition, as mentioned under 1.

It is worth emphasising that the growth is steady. In economics terms this translates into a stable natural interest rate of return. In nature there are no artificial interventions and growing the money supply. Fungal growth only plateaus out in case the means are no longer plentiful.

3. Fungi create a production structure underground consisting of a phosphorous harvesting stage, a transport stage and a retail stage, exchanging the phosphorous for carbon. In order to build a transport system, fungi have to build strong hyphae. These hyphae have two potentially conflicting uses, namely absorbing phosphorous for the environment in stage 1 and transporting these in stage 2. For absorption purpose a thin hypha is beneficial, for transporting purposes thicker hyphae are required. In faster growing networks, where an efficient transport is relatively speaking more important, hyphae tend to be more thicker as a consequence. As circumstances change, hyphae change their width dynamically, as in a dynamic market process.

   The conflicting fungi hyphae uses are to be seen as part of exploring versus exploiting. Exploring seems to imply that there are more growth opportunities. In economics terms, this is the time to invest with a view to be able to consume more in the future. This investing requires thicker hyphae, as the emphasis shifts to transporting and trading for *carbon (see the question in footnote 7 if a higher radius (thicker hyphae) is indeed observed in the higher growth phase).* In the exploitation case, the emphasis is on consuming which requires thinner hyphae, as the emphasis is more on the harvesting and consuming directly *(see the question in footnote 2 and 8: I do not fully understand to what extend fungi require phosphorous for themselves)*.

   From an economics point of view it is strange though that the C/P ratio is the same is an exploration and an exploitation stage. In other words, to me it is not fully clear if more exploitation means less growth. Is the trade-off between exploration and exploitation for instance visible in the 3 growth phases?

4. Further contributing to my confusion is the author's observation that the growth of the network (the authors talk about 'range-expansion speed') and saturating density affect how much carbon is consumed by the fungus network. The authors conclude that the fungal network growth is constrained not by carbon supply per

se, but rather by the exchange rate C/P[21]. This conclusion and comment is strange, as I thought the C/P ratio was on average constant. Furthermore, the authors state that fungal range-expansion strategies trade-off exploration and exploitation performance under a given exchange rate. The exchange rate or price of 3 C/P implies that the flux of carbon in one direction and phosphorous in the other are of a similar order of magnitude. Does this mean that if the price is lower than 3, that the AM fungi shifts from exploring to exploitation? And if so, are there times when the price is higher than 3, when the systems starts to explore?

The fungi system seems to act like an entrepreneur that is arbitraging away any price deviations. Where a price develops in the margin, this price becomes available or known in the entire economy. There is one price in the market, other than to compensate for any transportation costs. The authors conclude that like entrepreneurs and companies active in any economic production structure, fungal networks 'must require sophisticated strategies for routing resources throughout the network and perhaps even through individual hyphae. How these dedicated symbionts manage their 'supply-chain dynamics' for reciprocal nutrient exchange is a promising direction for future investigations. ´.

I completely agree with this last sentence. I hope this piece shows I would be more than happy to contribute from an economic and specifically Austrian School perspective. Foremost, I hope this approach is of interest to the Society for the Protection of Underground Networks and similar organisations and the basis for a mutual introduction.

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[21] Previously, I noted that in the fungi system the trade-off was foremost determined by how much carbon was (made) available by the host plant and not by the C/P ratio. How do these link?