

Tibor F. Liska

Unusual Experimental Economics

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Tibor Liska (1925-1994) explored how society can operate without any central control, in a self-regulating way. LisKaLand student camps are also seeking an answer to this. (The term LisKaLand is a pun, as *kaland* means “adventure” in Hungarian.) In these experiments, a mini society operates according to the rules of the Liska Model. The rules are applied equally to everyone. Nobody tells what to do. The “State” provides only operational conditions, but does not interfere with the functioning of the economy. Every transaction is based on mutual agreement (market solutions), no one is forced, everyone cooperates willingly. These attempts, even if not susceptible of proof, do not contradict the original concept and give an illusion that perhaps it is not entirely hopeless to realize a self-regulating society based on full consensus.

Six LisKaLand and seven ÖkiLand camps were organized between 2009 and 2017,. The former involved university students and university graduates, the latter, high school students. These, as will be explained in detail, were mainly holiday camps, where, in addition, they could participate in an economic game. The purpose of the game experiment in the camps was to test the functionality of the Liska Model and to gain practical experience of the possibilities of a self-regulating society. In the program of university students, the economic behavioral game was given more weight. This report therefore presents and evaluates the experiences of the LisKaLand camps (these specific experiments).

History of the Liska Model

The concept was incubated by my father, Tibor Liska (1925-1994), for decades. The beginnings of this “world-changing” aspiration dated back to the 1950s, when the young, recently graduated, post-war generation to which he belonged left university and entered the management of offices and ministries, where it was not difficult to notice that centrally planned socialism did not work well (Péter, 1954, 1955, Kornai, 1957). Many of the enthusiastic young men, who “wanted to rotate the world”, started to think together about outlining an effective, non-capitalist society – as it is said today – model. It was already agreed on that the main problem had been caused by the State and the ownership of the means of production, because the ownership approach cannot be replaced by any bureaucracy.

Then came 1956, the Hungarian Revolution, and thinking together stopped, but my father stayed in that treadmill alone and kept it spinning. By the early 1960s, the problem of

finding a solution was “globalized” (Liska, 1963). It became clear that the problem was not socialism-specific, but a world phenomenon. Capitalism works so much more efficiently only because the State has less influence on the economy than in the socialist countries (what is a big difference, but the problem is still the same). In the second half of the 1960s, he wrote a book, the Econostat (Liska, 1988), so the theoretical concept was ready. (The book remained a manuscript and was reproduced illegally for long. It was officially published only in 1988.)

In the second half of the 1970s, under the leadership of Tibor Liska, the Enterprise Research Group was established at the Marx Károly University of Economics, Budapest, with the aim of clarifying the concept, stimulating experiments and processing the experiences. The research group held a public debate every week, which initially only few were interested in, but by the beginning of the 1980s there was quite a good turnout and it was hard to find an empty seat in an auditorium that seated 600.

Meanwhile, the theory was tested in practice, too. The press dealt with the topic (Tibor, 1980), (Bársony, 1981), many publishers discussed it (Petschnig, 1981), (Csepeli, 1981), (Bokros 1981, 1982), (Berend, 1982), and (Kornai, 1982), and a lot of experimental feedback (Siklaki, 1985) helped to shape and develop the concept. I made the algorithmic description of the model (in several steps) between 1978 and 1982 (F. Liska, 1982). Experiments and theory also had an international echo on the pages of *The Economist* (Macrae, 1983). The experience of Ökland (a high school journalism training camp) organized in 1982 gave the idea to the LisKaLand camps held after 2009.

As the terminology of the model description was unusual and therefore difficult to understand, I made another formulation during the change of regime, which was mathematically equivalent to the original, but operated with the known categories of private property (F. Liska, 1990).

The concept was given the name “Liska Model” 4 years after my father’s death when the detailed description of the model was published (F. Liska, 1998). At the same time, an elective was started at the Corvinus University of Budapest, which has been offered ever since. Both this course and the experiments restarted in 2009 further refined the model, although its essence was not affected, only the details of the implementation were refined and papers were published continuously about the concept (F. Liska, 2000, 2001, 2004, 2005, 2006, 2009, and 2013).

The model

The concept is focused around self-regulation, which means that no one controls society. The State only provides operational conditions, but has no voice in the functioning of the economy. The most important consideration is the efficient functioning of society (efficiency in terms of globality, and thus harming others cannot be regarded as effective). The units are run by the person who can guarantee the most efficient use of property, and only as long as they are the most successful in that. All activities must be based on mutual agreement (market solution), no one may be forced to cooperate.

Everyone is spending their own money and is directly bearing the consequences of their own decisions.

In the case of traditional society management, some of these considerations coincide with the functions of the State. To achieve this model, it is necessary to find solutions to the indispensable functions traditionally provided by the State. The two most important of these are the *redistribution* of income and the *selection* of leaders.

For the redistribution of income, the Liska Model proposes “*social inheritance*” (F. Liska, 2001, 2013). This is a blocked bank deposit given to everyone at their birth, which, through its interest, will provide a continuous income and, at the end of their lives, will be a subject of social inheritance (redistributed among newborns). As a result of the solution, it is very similar to the – ever-increasing – unconditional basic income (History of Basic Income, 2008) (Bánfalvi, 2014), only here the source does not come from taxes (at least not from traditional taxes), but from the social inheritance deposits accumulated by the previous generation. It can be understood that entrepreneurs are paying taxes for the next generations, but they make payments to their own accounts and use them until the end of their lives. So income redistribution is not within a generation, but *between successive generations*. Traditional (within generation) redistribution works by shifting revenue from a productive sector to a less productive sector. The disadvantage of this is that it is at the expense of efficiency, since those who can work efficiently get fewer opportunities. If less income is generated, less can be reallocated.

The proposal for self-regulation of the selection is a new form of property, “*personal social property*” (Petschnig, 1981), (F. Liska, 2004). This property is a mixture of private property and rented property, but is very close to private ownership. Its purpose is to select the best owner, the one who can guarantee the most efficient operation of the property, and only as long as they know how to operate it most efficiently. The owner is obligated to pay some tax (1% or 2%) on the value of the unit, which they pay to their own (blocked) account. The value of the property (the tax base) is determined by the owners themselves, but it must be sold at this price if someone wants to buy it (the purchase price is, of course, due to the owner). So the rights and obligations of the owner are the same as those of a private owner, only the monopoly right is missing due to the obligation to sell.

The above formulation of the ownership structure is based on the model developed in 1990 (F. Liska, 1990), which differs from the original version only in that the buyer has to provide a 100% guarantee (they have to pay the purchase price). The original model also needs guarantees, but at a much lower level, which reduces the entry threshold and leads to wider competition.

Obviously, this concept is not based on the usual scientific attitude. Typical scientific approaches are positivist. They seek answers to yes/no questions, and want to describe and define natural laws. This is primarily true for natural sciences, but in social sciences there is also an aspiration to do so. Descriptive economics, for example, seriously strives for objectivity, even though subjective elements are inevitable. But the Liska Model is not like that, it belongs to the category of normative economics, which can no longer be called objective. One can argue in favor or against its claims; it is not about logically demonstrable or contradictory hypotheses, but about the belief that society can function

well if the proposed methods are applied. The best way to try to reinforce or reject this belief is to experiment with these methods. As this experiment is not risk-free, it is advisable to test it on a small scale under any circumstances and to draw conclusions from the results of many tests.

The operation of experiments

The exact rules are contained in the appendix; only the description needed to understand the specifics is provided here.

The LisKaLand camps lasted 7 or 8 days. The number of participants was between 90 and 130. Campers were expecting high-quality programs: professional lectures, case study competitions, and skill development training took place during the day, with bands, magic shows, quizzes, rock-bands, and parties at night until dawn as usual in student camps. However, the most permanent experience was provided by the practical application of the Liska Model. The participants took part as entrepreneurs and operated all the functions of the camp: kitchens, buffets, sports grounds, lodgings, and everything else. They paid in LisKaLand's own currency named ÖKI for the services used.

Every camp resident received a uniform “*social inheritance*”, which provided a steady and growing income and covered living expenses, even if no other income was earned. The inheritance practically comprised two deposits: the bigger one was blocked, while the other was free to use. The interest on the blocked deposit was added to the free deposit each day (more precisely only the bigger part of the interest was added to the free deposit, the remainder increased the blocked one to provide a growing income).

At the beginning of the camp, an auction was held, where the businesses were acquired by their first owners. At the auction, 30 to 60 companies found an owner, about one-third of them had a big turnover, where significant profits could be expected and the biggest competition was for these. Buyer had to provide a guarantee that they could pay from the freely available part of the social inheritance or from a loan. The owners had to pay tax in proportion to the value of the company, but could at any time re-evaluate their own company and could decrease or increase their payment obligations. If they increased the company's value (bidding), then surplus payments were made to their own (blocked) accounts. They received it even if someone bought it out, but in that case they no longer had to pay for it. The company had to be handed over to the person who wanted to take it over and provided the necessary guarantee.

LisKaLand operated two “state-owned” companies: the “*Bank*” and the “*Foreign Trading Company*”. Both state-owned companies operated essentially without any decision-making power, and only provided services corresponding to their core activities. The *Bank* managed the current accounts on a local computer network, but everyone carried out the transactions themselves. LisKaLand was a full information society: current accounts were public, anyone could query any details of the database and even the transactions conducted at the Bank from the bank terminals.

The *Foreign Trading Company* acquired the ordered products from “abroad” (from the nearby shopping center) based on orders placed by the wholesale companies. Only “public supply companies” (kitchens, buffets, pubs, confectioneries and general stores)

could order their goods from their wholesalers, but anyone could make orders through the general stores.

Although the ordering list was quite bulky, it limited the types of items available, due to the camp's budget, primarily by listing lower priced products. Order lists were quoted in ÖKI in proportion to the shopping center's prices in such a way that the expected stock of orders did not exceed the available budget. Every morning, the actual price list was completed, orders could be delivered by noon and were fulfilled early in the afternoon, and wholesalers distributed the items requested.

Apart from that minimum market regulation, all companies were subject to uniform rules. At the auctions, everyone started with the same amount of money and during the camp, as a result of their own decisions, their financial situation evolved. At the end of the camp, everyone received some reward. The rewards included some of more valuable ones (laptops, smartphones, etc.) and the participants could choose from the rewards in the order of their wealth.

Statistics

The camps were organized by the Tibor Liska College of the Budapest University of Technology and Economics. The organization started well before the camp (at least by half a year) and about 30 to 40 people attended the event.

Location and duration

2009	Lake Balaton, between Tapolca and Sümeg	8 days
2010	Kétegyháza	8 days
2011	Kétegyháza	8 days
2013	Felsőtárkány	7 days
2015	Szigetmonostor	7 days
2017	Szigetmonostor	8 days

Each location was at a separate, remote campsite.

Number of participants

	2009	2010	2011	2013	2015	2017
Player	75	83	89	71	69	64
Organizer	15	15	15	15	15	15
Guest	0	4	23	23	22	34
Total	90	102	127	109	106	113

Guests (with a daily ticket) stayed for a few days in the camp, could not acquire property, only took part in the game as consumers. Nevertheless, more people have been associated with one of the companies as silent partners or rented out a single asset for additional income. No guests were admitted to the first camp.

Companies

2009	2010	2011	2013	2015	2017
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Public supply companies	8	16	22	15	18	16
Accommodation Services	4	17	17	6	8	7
Registered subsequently	18	27	30	18	12	13
Total	5	4	14	2	7	8
	35	64	83	41	45	44

The companies registered subsequently were not included in the initial auction.

Wealth situation

	2009	2010	2011	2013	2015	2017
Daily interest rate	20%	10%	10%	10%	10%	20%
Social inheritance	20 000	28 000	10 000	10 000	10 000	5 000
Initial wealth	10 000	7 000	3 000	3 000	13 000	7 500
Top flight*	300 000	40 000	60 000	30 000	55 000	60 000
Middle rank*	10 000	4 000	8 000	4 000	13 000	15 000

* Wealth at the end of the camp

The LisKaLand camps were initially tested according to the version of 1990 (F. Liska, 1990), but later the original model proved to be more useful, even though it is more difficult to understand and requires more administration. As a result, the wealth of the top flight was only 3 to 4 times that that of the middle rank instead of the previous 8 to 10-fold difference, which does not contradict the fact that greater competition may reduce differences in wealth. The rules in the appendix only describe a possible implementation of the original model.

In the camp of 2010, social inheritance was increased subsequently, because the companies outbid themselves at the auction. This will be explained later in the *Inflation* section.

Why is it an experiment and why is it unusual?

There was a planned and repeated experiment at the LisKaLand camps. The following table summarizes the methodological and content similarities and differences of mainstream experimental economics and the LisKaLand experiment.

Similarities and differences

The experiment	Mainstream	LisKaLand
subject	experimental observation and measurement of theories of human behavior and its modifications	observing and registering human behavior under hardly changing (not real life, but utopian) rules
form of participation	voluntary	voluntary
exit	possible	possible
duration	specified	specified

risk	participation does not change the state of the real world	participation does not change the state of the real world
observation	participants know about it	participants know about it
bearer of the experimental costs	sponsor of the pilot project (the research institution)	participants + supporters
measurement	psychological experiments	registering and monitoring transactions in artificial cash
incentive	rewards	rewards + glory
sample selection	random	not random
pre-experiment	none	mostly groups come forward
relations of participants		
typical operation of participants	consumer decisions (profit maximization)	enterprise decisions (profit maximization)
cooperation between participants	not typical	frequent, voluntary

The LisKaLand experiment follows the usual mainstream conditions and methods in many respects (shown in red in the table). Participation here is voluntary, exit is possible at any time, and observation is not hidden but open. The duration of the experiment is determined, and participation does not modify the participant's financial status.

The differences are also significant. The experimental economist (Kahneman, Knetsch, and Thaler, 1991) undertakes experimental observation and the measurement of theories of human behavior and its modifications. The experiment helps filter out and modify the unrealistic claims of economic theory and improves the chances for a more accurate, more realistic theory. The LisKaLand experiments test not the theory, but the chances of realizing a social and economic organization concept. Turbulence, malfunction and extreme reactions during the experiment help develop a more realistic, more feasible utopia.

Another major difference is that mainstream experimenters (Charness, Rigotti, Rustichini, 2007) primarily model consumer behavior, while LisKaLand's organizers model entrepreneurial behavior. Good entrepreneurs will be good because they have some kind of visionary abilities that mainstream experiments do not investigate, and LisKaLand has just proven that these abilities exist. If we could know consumer preferences, available resources, and all the information needed for production and sales precisely, effective management would be a simple mathematical task. But the information from which the economic calculation might start cannot be known to any single player. The data that must be used cannot exist as a concentrated and integrated aggregate unit, but only in the scattered form of imperfect and often controversial knowledge, which many people have. In economic competition, the person who can make better use of these scattered knowledge among economic operators will be successful.

Experiences

Experiences of the experiments are by no means considered to have probative force. The number of cases is low and not only the sample is not representative, but also the vast majority of participants were students specifically interested in the subject.

Selection

The greatest lesson of the camps was perhaps that the selection system could work even if no one controls it and it is really self-regulated. The new ownership of the Liska Model chooses the best owners. This ownership (personal social property) is a transition between private property and rented property, but it is very close to private ownership. The main point is to select the best owner, the one who can guarantee the most efficient use of the individual units. Only those could remain owners here who could get more out of the company and were willing to pay more from their income than others. Only that extra profit could be pocketed “tax free”, which others could not produce.

A well-functioning selection is proven by the fact that those who participated in several camps generally performed in the same position in the ranking. Of course, the winner was not always the same, but those who did well were in the top flight next time, too.

Changing the owners was also smooth. There was always the keenest competition in the first days. If the owner did not increase the company’s value to a level corresponding to its profitability, it was quickly noticed and the bid was quickly raised. The original owner often bought back the company at some loss (the extra charge due to bidding was always put on the account of the bidder). After the first few days, there was hardly any forced buyout. Ownership changes took place, but these were traditional sales when the seller wanted to sell and the buyer wanted to buy. So forced buyout took place only until market equilibrium was reached. It happened in a day or two.

Scaled-back State

In the first camps, the organizers worked a lot. Later, they realized that many “state” functions could be outsourced and transformed into businesses. In the very first camp, the “*Foreign Trading Company*” even carried out wholesale tasks, too, which involved a lot of administration and was burdensome for the organizers (they did not even sleep in the first few days). Later on, wholesalers were also added to the companies offered at the initial auction. This was not only a lucky solution because it relieved the burden from the organizers, but also because other large companies could compete. (Big profits were only available to large-scale businesses, so at the auction the biggest competition was always for pubs, kitchens, and buffets, and wholesalers joined this group.)

Later on, the "State" was downsized. The judiciary (this will be discussed later) and public area supervision were transformed into businesses, and even commercial banks were established, which engaged in lending and loan follow-up.

There was also an attempt to outsource foreign trade, but there would be too much risk if anyone could take it over. Thus, it remains a “state task”.

There were also contradictory tendencies. Common bathrooms and showers were initially operated by companies, but different expectations of cleanliness stirred many controversies, so they were returned to the organizers' competence.

Although every effort was made to "ignore" the State, there were situations where "State" intervention was inevitable. For example, in a number of cases, it was necessary to expand the list of products available on the fly, and there were products in demand that, after some discussion, were not included in the list. Price ratios also changed. For example, the prices of disposable (plastic) plates and cups rose until it was cheaper to pay for dishwashing.

The original idea that the State should only be involved in the operation of the economy as the referee in soccer was actually realized. Interventions gave some people some advantages, but nobody thought that this was the goal and competition was not changed.

Inflation

At the auction of the first camp, everyone was bidding very moderately. Only three players took out loans for buying a company (they finished in the first places). Consumer prices also started very low (of course, there was no price regulation). Since a lot of money was handed out, inflation was spectacular in the first few days. The value of companies increased threefold and consumer prices rose fivefold. Meanwhile, many had the opportunity to bid, but few assets changed hands, because the original owner immediately repurchased them and continued bidding for their own company. On the third day, price levels and viable demand dropped and prices increased no further, inflation stalled and prices remained stable for several days. Then, at the end of the camp, inflation started again. Because of ill-considered organization, only the top 30 players could get rewards (laptop, camera, phone, etc.) based on their wealth. Those who saw that they did not have a chance to win (and they were the majority) went on a spending spree on the last days of the camp, which generated inflation again.

This "end of the world" phenomenon was remedied in subsequent camps with the simple solution that everyone was given a reward and although there were only a few valuable items among them, it was worth saving until the end of the camp, since higher ranking meant a better position in receiving a prize.

These problems did not arise from the model itself, but from launching and stopping a long-term model in a limited time period. Stopping it was finally resolved in the above way, but these problems often remained at the start. In the second camp, as everybody remembered that the winners bought companies at the beginning, prices skyrocketed at the auction. As a result, the consumer price level rose well above the solvent demand. Perhaps a balance would have been reached in a couple of days, with austerity measures and spectacular failures, but since no one wanted the students to live in misery for days in a holiday camp, the organizers decided to raise the social inheritance uniformly and bank deposits were increased for everyone, so the balance was restored.

The third camp saw the best launch. As a result of careful preparation, calculation exercises and business calculators, prices were realistic at the auction and inflation remained low throughout the camp. Subsequent camps sometimes had low or too high

prices at the first auction, but since they occurred seldom, it did not cause balance problems.

Starting a business or not

Many came to the camps to try out what it was like to operate a business, but most of them only wanted to have vacation. Businesses, as in real life, needed to calculate prices, inventories, employees, and so on. Even those who were not successful in their business ventures well thought they had learned a lot from the experience.

Despite abundant supply, everyone worked for at least a few days, even those who specifically came with the intent just to enjoy their vacation. There were some who occasionally helped out in a kitchen or buffet, and others were renting appliances for a short time. For example, several people baked cakes for which they rented the kitchen oven. The renter had to negotiate in advance with the owner (only the owner of the kitchen had the right to order the ingredients), then baked and sold the cake. The broiler was rented several times. Anyone could have bought it too, but for those who wanted to grill in an evening, it was not worth buying, because they would have had to provide for its further operation. The wafer pan was almost always rented.

Casual work or rental did not bring much revenue, but the majority did not work for the money (though without money, they would have hardly done it), but because they wanted to work. They would have been comfortable even if they had no extra income, but trying something they like and earning some money in addition are really attractive. It would be nice if it were possible not only in LisKaLand!

Full information society

Money movements were completely transparent. At the bank terminals, anything could be seen: bank accounts, transfers, money payments to and from the bank, and changes to company ownership. All this could be filtered by date, person and company.

Transparency greatly strengthened trust between market players; anyone who was interested in knowing everything about persons or companies or even about the purchasing prices could get any details. Though not many people processed this information, the possibility to do so was already effective. Nevertheless, decisions, especially at the auctions, were much more determined by the feelings, fashions, and the behavior of others than the available information. Perhaps it takes longer to learn this, there was hardly any progress in this area even in subsequent camps. For example, not initially, but later, there were commercial banks that received loans from the central bank at the base interest rate and passed them on to entrepreneurs at market rates and the interest margin was their income. All they should have done was to estimate how much the total loan demand and the market lending rate would be, and it was easy to calculate the maximum price it would be worth bidding for at the auction. Based on the previous camps, this could be easily done, but they kept bidding far over of the most optimistic estimates and each bank ended up making a loss (even if there were not failed loans).

Usually, the hypothesis that successful entrepreneurs are guided by their good intuitions and vision skills was confirmed, but those who make calculations will be less

disappointed in the end.

Motivation

Organizers had to resort to external help (furnishing a lecture hall, setting up a stage, etc.). It was always easy to find candidates just by declaring how much will be paid and there were enough volunteers. If too many people came forward, they would be bidding to decide who would undertake it for less.

A “scholarship” was offered for attending lectures or presentations – since the students were just waking up in early afternoon and it would have been embarrassing if an invited lecturer had no audience. The amount of the scholarship depended on the anticipated interest and was not offered in every case, but it achieved the goal to have enough audience.

The majority came only to have vacation, but there were people who wanted to show what they were capable of. Most of them succeeded at this, they has worked hard, sometimes to the limit of self-exploitation.

According to the model, as it is easy to lose responsibility in group decisions, companies were always linked to one person and there might have been silent partners in the background, but there was always a single person who assumed responsibility. There were also joint ventures, most of the kitchens worked this way. Sharing the income was also variable. Generally, income was distributed according to performance, but in some cases all proceeds were transferred to the account of one of them and so that person got much ahead in the ranking.

There was also an example where the entrepreneur was only managing the company and the actual job was done by well-paid staff who earned more than the boss on the whole, but the boss had a more comfortable life.

Judicature on a market basis

“Arbiter” companies were businesses that were not too lucrative, but operated according to the general rules (anyone could bid on them). In fact, they filled the role of elected judges. If one arbiter determined the case in cases of dispute (of course, for a fee), and his decision could only be contradicted by another arbiter. So, if an arbiter was retained, the dispute was determined, and if two were retained (usually the other party retained another), then the two arbiters had to agree. If the arbiters failed to establish a common position, it was, according to the rules, brought before the Supreme Court, which could impose a severe fine on the arbiter who was judged against (or both).

Despite the expectations, there was hardly any matters in dispute, as they were not willing to pay for the justice, they rather agreed. In some cases, both parties called for an arbiter who reached a compromise quickly. No case reached the Supreme Court.

The Supreme Court was only theoretically present, it practically did not work, but it played an important role in reaching agreements. Only the arbiters could have asked for a top-level decision, but the threat posed by the possibility of a severe punishment led them to reach an agreement. At each level, it was easier and cheaper for everyone to agree than to let others decide.

Creative ideas

The average age of participants barely exceeded 20 years, but their ingenuity made up for their inexperience. Even though no big profits could be reaped with the best ideas, since they did not really reach a high turnover, new ideas were constantly being created. Protection could also be requested for intellectual rights, but they did not usually have the opportunity to do so. The agents of the “breakfast to bed” service, buffets, pubs, and kitchens, employment agencies, and the betting offices were not registered. Only the “voucher meals” required an exclusive right and participants could have made bids for the license in their case, but the idea holder remained the owner throughout. (Voucher meals worked in such a way that lunch and dinner were sold at a fixed price in advance in consultation with the kitchens, so the kitchens could better estimate the expected demand and the market price.)

The relatively most profitable idea came from one of the buffet girls. Every morning she cooked a huge pot of tea (the pot and oven were rented from one of the kitchens) with some sugar and lemon juice, and sold it for breakfast under the name of “canteen tea” and then sold the remainder after cooling it as “ice tea” during the day. This did not bring high proceeds on the whole, but the profit per cost was really high, and even more sandwiches were sold.

The company called “LisKaLand Media” (the public address system) initially supported itself from marketing advertisements. Later, those who wanted to advertise a lot simply bought the whole media and as long as that person was the owner, he constantly advertised his own merchandise. Then he was also bought out and the next did the same. The media changed hands the most often, although they had only four owners in just 8 days, who kept buying out each other.

The “Market Research” company was originally established to conduct public opinion research on entrepreneurs. This did not prove to be very lucrative, but the organizers were delighted with the opportunity and carried out surveys in succession.

The most funny idea was the birthday party. In the camp, like in a fairy tale, one day corresponded to one year, so 2 hours was a month and so on. They collected all birthday data and calculated the minute of all birthdays. The bartender watched the clock and announced a birthday party at the right time. “Now is Juci’s birthday! Toast!” And this went on for a whole day.

Summary

Traditional (mainstream) experimental economics studies consumer behavior primarily, but the LisKaLand experiments were designed to test entrepreneurial behavior and a regulatory system.

It would be an exaggeration to talk about evidence, but we might say that these experiments do not contradict the following:

- there may be a self-regulating selection system without anyone appointing leaders;
- wide competition can select the most effective entrepreneurs;
- reducing the entry threshold also reduces wealth differences;
- full information enhances trust between market players;

- even justice can be market-based;
- State intervention is needed even if we want to minimize the role of the State as the referee needed at a soccer match and if the interventions are done with full consensus, they will not cause any problems.

These experiments – even if they do not have probative force – inevitably achieved that the participants enjoyed the game and gained entrepreneurial experience that they could use in the traditional economy, too.

Appendix

ÖkLand Camp Rules

While the rules of LisKaLand and ÖkiLand kept changing, the rules applied were practically the same as described here.

Time

One day in the ÖkLand camp corresponds to one year as unit of time. All interest rates refer to this time unit. Financial settlement takes place in seconds with a fraction of the daily (annual) interest rates.

The clock keeps ticking throughout the camp. The clock starts on the first day – usually before the arrival of campers – and ends at the announcement of results.

State

ÖkLand has a minimum State. A few percent of ÖkLand's residents are employed by the State, and they operate the State. The State consists of only the *Supreme Court* and two state-owned companies, the *Bank* and the *Foreign Trading Company*. The task of the "State" is to operate the "society" and to provide the right environment, which is primarily provided by the services of the two public companies. The *Supreme Court* decides on possible controversial issues (if any). The ÖkLand camp is a closed economy. The camp uses its own currency, the ÖKI, issued by the *Bank*, no fractional currency. The ÖKI is not convertible, it cannot be converted into any other currency.

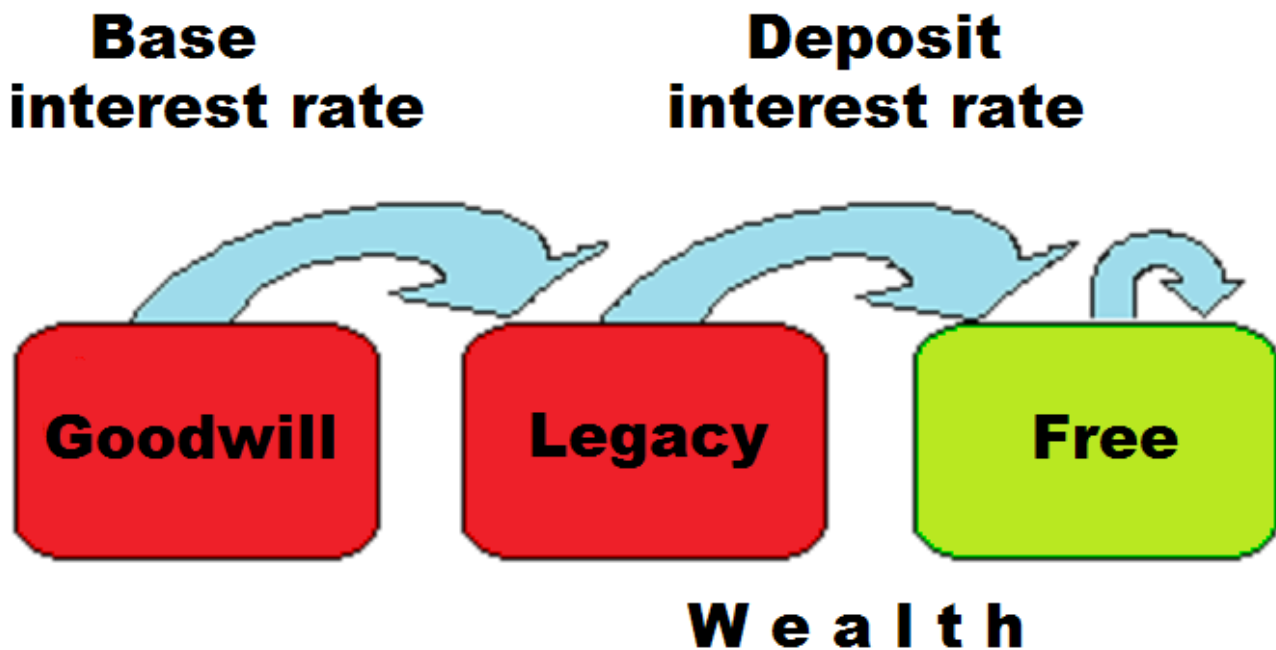
Anyone can buy or sell anything (company, product, or service) for ÖKI only. Employees receive their salaries from employers in ÖKI and social inheritance is also disbursed in that currency. There is no price regulation in ÖkLand! Everyone buys and sells for as much as they want.

Rules

The accounts of the residents are managed by the *Bank*. Everyone can give instructions in respect of their own accounts according to the following rules.

Social inheritance

At the start, each participant receives their social inheritance, which consists of three deposits, of which only one can be used freely. The other two are the legacy and the goodwill capital, both placed on a blocked account. Deposit interest is due on the free deposit and legacy deposit at the deposit rate, while base interest is due on the goodwill capital. The interest on the free and legacy deposit can also be freely used (added to the free deposit). The interest on the goodwill capital is added to the legacy. Wealth is the sum of the free deposit and the legacy.



Interest provide an ever-increasing, unconditional income for everyone. The blocked accounts of entrepreneurs vary depending on their activities, but all employees will see the amounts on their blocked accounts change only by interest (all employees will have the same amount).

Auction

Businesses (companies) will be auctioned to their first owners. Companies are put up for auction by the State on the first day of the camp. The auctioned companies remain in public ownership and the owners get only the right to operate them.

At the auction, the minimum bidding step is ÖKI 100, and everyone has an (unlimited!) credit line, but they can buy only one company (and any number later).

In the first round, all auctioned companies can only be bought at the starting price (or more). In the second round, the remaining companies can be bought for less.

Companies

Each business (company) has an inventory and (if required) a description of operation. The company's first owner is the winner at the auction. The company can be taken over at any time by the person who can meet the guarantee conditions from their free deposit or, if that is not enough, from a loan. The current owner must always pay the base interest rate on the value of the company. The owners may at any time increase (bid up) or decrease (bid down) the value of their own company, so they can decide how much they want to pay. During bidding (only when the value of a company is increased) a bidding fee is also payable, also from the free deposit or a loan (there is no bidding fee at the initial auction).

The owner has to hand over the company if someone wants to take it over. The person who pays for the largest capital (to achieve the most efficient use of property) can be the owner of each company.

Establishment of a new business

Anyone may create a new company. The new company is registered by the *Bank* (which is also the "Patent Office") upon payment of a registration fee (ÖKI 100) and from afterwards it is subject to the same rules (buyout, interest payment, bidding, etc.).

The companies established will become public property for the duration of the camp. (Practically the same happens as if the applicant had bought it for ÖKI 100 at the initial auction, but the inventory and the description of operation are determined by the founder.)

Initial values

System parameters		Accounts	
Base interest rate	20%	Free deposit	3 000
Deposit interest rate	16%	Legacy	5 000
Lending rate	24%	Goodwill capital	1 000
Guarantee rate	30%	Companies	0
Bidding fee	10%	Credit	0
Credit line *	?		

* The bankers set the credit line individually and continuously review it.

Change of period

The change of period takes place continuously (every few minutes), with the interest rates corresponding to the daily (annual) interest rates. When the period is changed, current accounts are changed as follows. (Companies: the value of companies owned at the end of the previous period.)

$$\begin{aligned}
\text{New free deposit} &= \text{Free deposit} \times (1 + \text{Deposit interest rate}) \\
&+ \text{Legacy} \times \text{Deposit interest rate} \\
&- \text{Companies} \times \text{Base interest rate} \\
&- \text{Loan} \times \text{Lending rate}
\end{aligned}$$

$$\text{New legacy} = \text{Legacy} + \text{Goodwill capital} \times \text{Base interest rate}$$

If someone's payment obligations exceed the amount on their free deposit, automatic borrowing occurs. If, as a result, the borrowed loan is larger than the credit line, bankruptcy proceedings will be instituted.

Transactions

The bank is self-service, the players handle their bank accounts. Everyone can enter their own nicknames and passwords in the banking computer system and have transactions on their own accounts. (Consider the following options with meaningful restrictions, e.g. no one may withdraw more cash than the value of the free deposit, etc.)

Cash

Payment and withdrawal. The amount increases or decreases the free deposit. (payment $X > 0$; withdrawal $X < 0$)

$$\text{New free deposit} = \text{Free deposit} + X$$

Transfer

The specified amount is transferred from the sender's deposit to the receiver's deposit.

$$\text{New free deposit} = \text{Free deposit} - X \quad (\text{transferor})$$

$$\text{New free deposit} = \text{Free deposit} + X \quad (\text{transferee})$$

Credit

Loans can only be taken out automatically up to the credit line. In the case of a payment obligation (when a company is acquired, a transfer is made, etc.), when the amount to be paid exceeds the value of the free deposit, automatic borrowing will debit the credit account with the missing amount after approval. Loan repayment is possible to the extent of the deposit and the credit account is reduced.

(Credit $X > 0$; Repayment $X < 0$)

$$\text{New Credit} = \text{Credit} + X$$

$$\text{New free deposit} = \text{Free deposit} + X$$

Anyone can get a loan for buying supplies or a company, but not for consumption. If necessary, the credit line could be increased by the competent banker on an individual basis.

Bidding

Only the owner may bid (but ultimately anyone who can take over the company). The specified amount increases or decreases the value of the company. If an increase is made, bidding will reduce the free deposit by the bidding fee and the amount of the guarantee must also be transferred to the legacy (to be blocked). If the bidding fee and the amount of the guarantee exceed the value of the free deposit, automatic borrowing will follow.

(Increasing bid $X > 0$; Decreasing bid $X < 0$)

$$\text{New company value} = \text{Company value} + X$$

$$\text{New goodwill capital} = \text{Goodwill capital} + X$$

The company's value and the goodwill capital change in the event of bidding either up or down, but in the event of an increasing bid the bidding fee and the guarantee needs additional settlement:

$$\text{New free deposit} = \text{Free deposit} - X \times (\text{Bidding fee rate} + \text{Warranty rate})$$

$$\text{New legacy} = \text{Legacy} + X \times \text{Guarantee rate}$$

It appears from the above that those bidding up will increase their payment obligations on the company, but they will pay the surplus on their own blocked (legacy) account, and if the company were handed over, she will still receive this surplus, since their goodwill capital will remain the same. This is “*the bid is due to the bidder*” principle.

Acquisition of a company

Anyone can take over any company at any time (if they have enough money or a sufficient credit line). The guarantee rate of the company's value reduces the buyer's free deposit and increases their legacy (i.e. the amount of the guarantee must be blocked). As soon as the buyer becomes the owner, they have to pay for the company and may increase the company's value. The previous owner may decide whether or not to repurchase the company. If they hand it over, the new owner must also take over the stock-in-trade and transfer its (purchase) price to the previous owner. When taking over a company, it is advisable to request the assistance of an arbiter to supervise the transfer of the company in order to avoid possible disputes.

$$\text{New free deposit} = \text{Free deposit} - \text{Company value} \times \text{Guarantee rate}$$

$$\text{New legacy} = \text{Legacy} + \text{Company value} \times \text{Guarantee rate}$$

Amortization

The owner can reduce the company's value (and liabilities) not only by bidding down, but also by amortization.

$$\text{New company value} = \text{Company value} - X$$

$$\text{New free deposit} = \text{Free deposit} - X$$

Bankruptcy proceedings

Bankruptcy proceedings fall within the competence of the *Bank* and occur when a payment obligation cannot be met. If the *Bank* considers that insolvency is only temporary, it will simply raise the entrepreneur's credit line. If the situation is worse, the company is declared bankrupt and the new owner will be the person who promises the most at the bankruptcy auction. The failed entrepreneur is obliged to bid back to the level reached at the bankruptcy auction and the new owner will take over the company at that price. There is no other sanction for the failed entrepreneur, they will remain a citizen with full rights (although it may be more difficult to get a credit line).

Bailout

The *Bank* may, in exceptional cases, bail a business in a hopeless situation out if it is requested. Bailout means resetting all of the entrepreneur's accounts (only the legacy account will remain at the minimum for the subsistence level). So, all debts will be cancelled and the entrepreneur can continue to make a living from the interest of the remaining legacy (besides working).

Ranking

The order of players is determined by their wealth:

$$\text{Free deposit} + \text{Legacy} - \text{Credit}$$

The winner is the person whose above target function value is the highest at the end of the camp.

State services

Public services are provided by state employees. They are not involved in entrepreneurial competition, but they can help players with advice and rule explanation.

Bank

The *Bank* manages the current accounts and records the reported transactions. The Bank operates in a self-service manner. All users can log on with their own nicknames and passwords. Everyone handles their own accounts. Data is open to the public at any time at the Bank's terminals. The Bank's computer system is always available, and any transaction can be executed at any time except cash withdrawal and payment. Cash transactions are only available in cashier's hours. The only real decision-making power of the *Bank** is setting credit lines on an individual basis, and the bank has the right to change interest rates if necessary, but other parameters will only change exceptionally.

** There were also commercial banks in the last camps. The commercial bank is a company subject to the same rules as other companies. It is able to get a loan from the central bank at the base interest rate and to pass it on to borrowers at a market rate. The interest margin is the revenue of the commercial bank.*

Foreign Trading Company

Only the Foreign Trading Company is allowed to import from "abroad" (= shopping center). The Foreign Trading Company prepares the day's order list every morning, and the orders submitted (in the morning) by wholesalers will be fulfilled in early afternoon.

The order list is essentially a list of products sold at the shopping center but priced in ÖKI. The prices are proportional to the shopping center's prices so that the total sum of the expected order does not exceed the available budget. The lists, the prices and the orders are also public, and the Foreign Trading Company publishes the current order list every day.

Supreme Court

The Supreme Court of ÖkLand only meets in exceptional cases when an urgent need arises. The issue to be determined must always be phrased in such a way that it can be answered yes or no. After a brief discussion of the issue, the judges vote. If the issues can be determined by a qualified majority of the Court, the decision is final. If there is no qualified majority, a referendum will be called, which will decide by a simple majority. In the referendum, the votes of all campers are equally important. The cost of a referendum is ÖKI 1,000, which the initiator(s) has (have) to pay in advance.

Market Regulation

Every company is subject to the same rules. In addition to the standard rules, additional rules apply to some types of companies (wholesalers, public suppliers, and accommodations).

Wholesalers

There are at least three wholesale companies and only they are allowed to order goods from the Foreign Trading Company, by filling out the order list. The products delivered are temporarily stored, then distributed to the public supply companies (kitchens, buffets, pubs, confectioneries, and general stores). The wholesalers may accept and fill orders only and exclusively to public supply companies.

Public supply companies

Public supply companies are kitchens, buffets, pubs, confectioneries, and general stores. Only these companies may order goods from wholesalers, other residents may order through general stores. The products available for ordering correspond to the type of supplier:

Supplier	Available products
Kitchen	Hot meal ingredients
Buffet	Cold meal ingredients and soft drinks
Pub	Alcoholic beverages and refreshments
Confectionery	Fruits, ice cream and candy
General store	Anything that is not included above and is available at the shopping center

Others can also order through the general stores (not just public supply companies).

Accommodations

Accommodations consist of rooms, chalets, etc. The owner sets a fee per bed and the person who sleeps there must pay this on a daily basis. (Bed linen is not necessarily a standard accessory in the room.)

When an accommodation has more than one owner on the same day, the day's fees will be paid to the owner who is the owner at 5:00 p.m. Accommodation rates can only be collected after 5:00 p.m.

Environmental assets

The camp area is divided into parcels and each parcel is a company. The parcel owner is responsible for keeping the area in order and has the right to charge a fee for any activities in the area.

The owner is free to set a fee for activities that can be pursued elsewhere (in other parcels). The fee for an activity that can not be pursued elsewhere should be mutually agreed on. If this fails, an arbiter needs to be involved.

Justice

Arbiters are elected judges. It is advisable to involve an arbiter for concluding a contract and for taking over a company. In cases of dispute, this arbiter determines the dispute. Anyone who

concludes a contract with an arbiter or takes over a firm is protected from problems resulting from non-compliance (breach of contract, inventory shortages, receipt of stocks, etc.)

There are several (minimum three) arbiters available. It is advisable (not mandatory!) to retain an arbiter prior to signing a contract or accepting a transaction to monitor the events and to ensure the legal protection of the client. No one may contradict the judgment of an arbiter except another arbiter (who is retained by the other party). If the two arbiters cannot agree, the *Supreme Court* will decide. *The Supreme Court* has the right to punish the arbiter if they did not abide by the rules.

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