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FROM THE VELODROM TO THE STREETS – THE RECREATION SCENES OF FIXED GEAR BIKES. A COMPARATIVE STUDY ON HUNGARIAN AND FOREIGNER FIXED GEAR BIKERS

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ABSTRACT. In the present study our aim was to find answers in connection with the increasingly popular fixed gear bicycle (fixie) cultures. We wanted to find out, how popular fixies are among recreational activities in Hungarian and foreigner biking populations. We designed a questionnaire to find out who the bikers are, who they ride with, what their motivations are, how regularly they ride their bikes whose characteristic features are significantly different from other types of bikes and vehicles.

Keywords: *fixed gear, recreation, bicycle, riding habits, subculture*

Introduction

If we rely on data recently recorded, the ancestor of the bike was designed in France in 1791, by a zany noble called Mede de Sivrac. The vehicle, which was named a célérifére referred to its desired rapidity. The device was wooden and two-wheeled, with the fork and a holding beam. It was very easy to use. People sat on it and rode it with their feet. It was pretty much like engine-shaped die-cast toys that are available nowadays for young children. After a while, the first bikes have become luxury items for the rich, decorated with arts and crafts carvings with almost all kinds of animal imitations, from slugs, to lions. Although they were beautiful and technically advanced, it was difficult to move with them because of their weight. Hence the lack of steering, the "rider" always had to stop before changing direction. Since Mede de Sivrac

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did not patent his idea, it was quickly copied by craftsmen who began to sell it. They not only earned well, but they set the fashion, according to the contemporary press of that time (Baroni, 2010).

The fixie bicycle

The closest relative of the fixie bike is the track bike. Track races were held much earlier than road races, but later the stage races became more and more popular among the lovers of cycling sports. At first glance, a track bike looks very similar to a road bicycle, but there is no brake, no derailleur gear on it. There is only one gear, which is fixed, so the racer's feet can never relax. If the bike is moving, they are moving too. Pedaling is much more efficient then. Track bikes have to meet quite different requirements to road bikes, therefore the angle of the frame is different, and the crank-arm is shorter so that it does not touch the ground when the cyclist is leaning into the bend (Baroni, 2010).

Szathmári (Szatmári, 1994) describes the frame of track bikes in the following way: "… the geometry of it is significantly different from the road bike's frame. The axle-base is shorter, head- and seat-tube angles are more pitched (they are more approached towards the perpendicular) therefore the wheels are closer to each other. Why does it matter? The shorter a bicycle, the rider is more humped, in a more aerodynamic position, whit the tensed back muscles the sprinter can pass to the crank-arm more force. The shorter wheelbase and steep head-tube allow direct steering, which is good at the positioning in the field and at the shoving comes in handy. The bike responds instantly, exactly follows the biker's the movements.

The frame is built higher, the chain stay is almost horizontal, and the crank bearing is also in a high position. It is important at the curves, because the down position pedal has to get in a higher position to the area of the surface of the bend. It is not allowed for the pedal to touch the ground. The center of gravity of the biker also gets higher, he/she can roll in a more agile way, and the sprinter can "drag the bike to itself". The most original part of the track bike is the fork. Compared to road bikes' fork, the forward inclination is smaller; the rubber almost touches the fork shoulder. This is also because of the direct steering and the axle distance reduction (therefore it is not advisable to build road fork to a track frame).

The specialty of frames built by former Hungarian masters is the fall of the 55mm crank bearing (chain-stay), which is specifically designed for the Millennial slope. "It is also a sport-technical heritage that we should remember…"

Role of subcultures in recreation in general

Time (if it is spent together with others) and common interests make social atmosphere no matter what kind of recreation activity is performed. Recreation subcultures do not go against society and its rules; they are the tools of self-realization and the feeling of integrity (Piczil, 2002).

A process began in Hungary a couple of years ago leading to the existence of biking subculture. Biking has become a sport and means of transport, also a form of self-expression. Protecting the environment and leading a healthy life have become fashionable. More and more money is being invested in developing bike routes in the center and in the suburbs, so people have begun to ride bikes instead of riding motorcycles or using their cars (Criticalmass, 2007).

Cycling subcultures are not formed by anarchists at all. The members are willing to express themselves with the help of their bikes. They are desperately in love with riding. It means freedom, a way out of society for them. In this running world of ours, everybody wants to belong to someone or something. People feel the need of being a group member. Biking subcultures thus provide an excellent possibility for young people to practice self-expression and cooperation at the same time. The rides, various games, competitions help them to relax. The bike is not only a machine, but a part of their lives, a piece of their souls (Papp, 2011).

The fixed gear bike

Definition of a fixed-gear bike (fixie) (Edwards & Leonard, 2009): „A fixed gear bike is a thoroughbred racing machine, the cycle messenger's workhorse and, for many street riders, an aesthetic choice. Each bike is a statement of individuality that stands out from the hundreds of grey hybrids, lined up at the traffic lights. A global fixed gear culture has come into being."

Graeme Obree defines fixie bikes when presenting *Fixed* (2009), a book written by Edwards: "You can always add something to the bike, bout you come to the point where where you can't take any more away, and that's a fixe-wheel bike" – then Ewards compose his own notion about the theme: „The bike is a blank canvas upon which riders express an individuality, or community. Sripped down and spartan, its simplicity and purity are expressed both in the clean lines of its design and in its ride."

According to Ryan (Ryan, 2005), fixie means that the pedals and the back wheel are only connected to a gear fixed to the back wheel. Opposed to standard road bikes, there is no possibility to change the gears, there is only one gear and

the brake is also optional. The mechanism is easy like the concept of trikes: if you want to stop, you have to use your muscles. Many bikers (not all of them) install a front brake, but the brave ones (or crazy ones) don't. They pay no heed to this concept. Strangely, when this configuration was first presented in the late 19th century, it was called the „safe bike" as a solution after introducing the unstable „big wheel" bikes. Although manual brakes and the free back wheels were developed a lot later, fixies remained popular for decades, including the early years of Tour de France. Using a fixed gear bike in town started with messenger services. The bikes were taken to the roads from the track as they were fast, simple and undemanding. Fixies became fashionable. Many realized that it is not only a means of transport any longer, but it is perfect for tricks and games, too. The group of fixie lovers slowly started to grow and the basics of fixie subculture emerged. A couple of years ago, when mass media started to pay more attention on fixies, the sub culture began to flourish. Bike manufacturing companies realized all over the world that there is a growing need in the market for a street bike to be developed. They went back to the basics and the reproduction of beautifully shaped, steel framed bikes began that were designed to invoke the atmosphere of old track bikes.

During a ride on a fixed gear bike, a so-called *mental-riding* emerges in the self, which results in a merely different way of riding (Béres, 2014). Since riding a fixie is not safe at all, a 100%-focus is expected from the cyclists. They have to pay attention to the road, to themselves and to all the other drivers. A fixie rider has to think in advance, at least to a 50-meter distance in order to decide if it is necessary to use the brake, whether passing by is possible or not. In the case of other kinds of bikes, the mental focus is eased, knowing that the brakes are there to be used at any time if emergency. Therefore fixie cyclists are more responsible than other bikers.

Hypothesis

According to our hypothesis, the same population use fixed gear bicycles, mostly because of their special characteristics. We believe that Hungarian and foreign fixed gear cyclists will not differ in the age and socio-metric details.

Since fixie riding is essentially influenced by the USA, fixie riding can be called a fashion trend. Therefore we assume there will not be significant differences between Hungarian and foreigner habits and motivations in the answers regarding sub cultural activities.

It can also be assumed that the knowledge and understanding of traffic regulations will result in a difference among cyclists who ride a fixed gear

bike. Details will show that foreign riders are more self-conscious than riders in Hungary.

We assume that foreigners cycle more than Hungarians due to the fact that they have to bridge longer distances in big towns and in the suburbs.

As fixie cycling subculture is young in Hungary, its competition habits are also in its infancy, therefore I assume that questions related to this matter will show significant differences between foreigners and Hungarians. However, there will also be similarities. Answers basically related to fixie riding as a recreation activity will not show a significant difference between the two groups. In our opinion, the use of fixed geared bicycles can be implied in recreation, as a beneficial free time activity.

To prove our hypothesis, we raised the following questions: is there reason for the existence for fixies in transportation and recreation? Is there any difference between the age, and domicile of fixed geared bike riders? Is there a significant difference in the cycling habits of the two groups examined? (How long have they ridden a fixie, what is the daily distance they take? Who do they ride with? Do they cycle with or without using the brake? etc.) Will the knowledge of regulations referring to cycling show a difference between the two populations?

Methods

The place and time of the test - The questionnaire was loaded to the site: http://www.kerdoivem.hu. The Hungarian questionnaire was published on 31st January, 2013 (in Hungarian) and on 2nd February (in English). We uploaded the link mainly to sites that specialize in fixie bikes. The sites were the followings:

The last filling in was registered on 12th and 19th February (Hun) then we shut the questionnaire down. Filling the Hungarian questionnaire lasted for 13 days, the English one for 17 days.

Subjects

The average age of the 62 subjects was 24-27 years (Dispersion: ±6.01 years). The youngest subject was 13, while the oldest was 42 years old.

The average age of the 267 foreign subjects was 26-49 years (Dispersion: ±9.22 years). The youngest subject was 14, the oldest one was 68 years old.

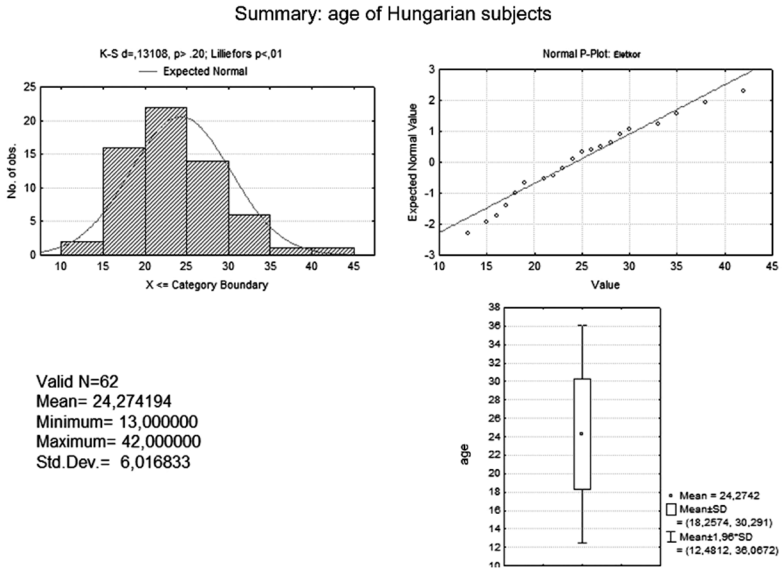


Figure 1. Age of Hungarian subjects (n= 62)

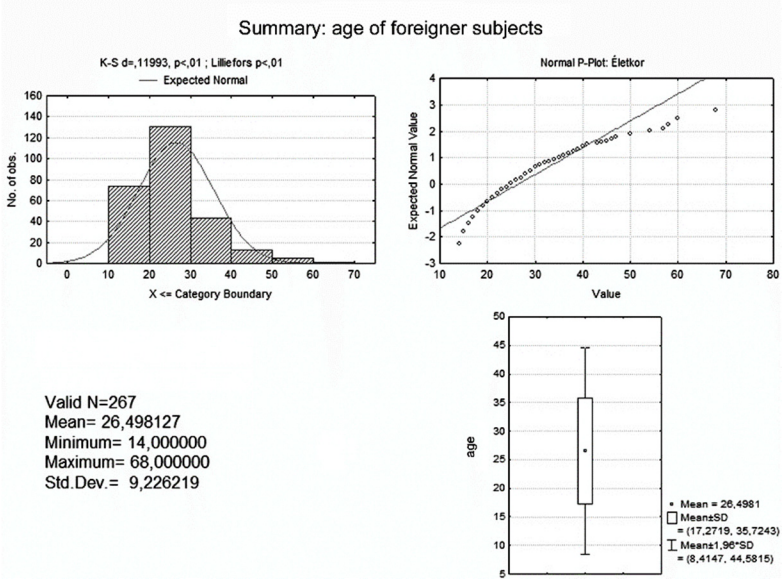


Figure 2. Age of foreigner subjects (n=267)

We examined the age of the subjects with a two-sample T-test. The results did not bring significant differences between the ages of the two groups.

The geographical distribution of the foreigner subjects is extremely colorful. We received questionnaires from almost everywhere in the world.

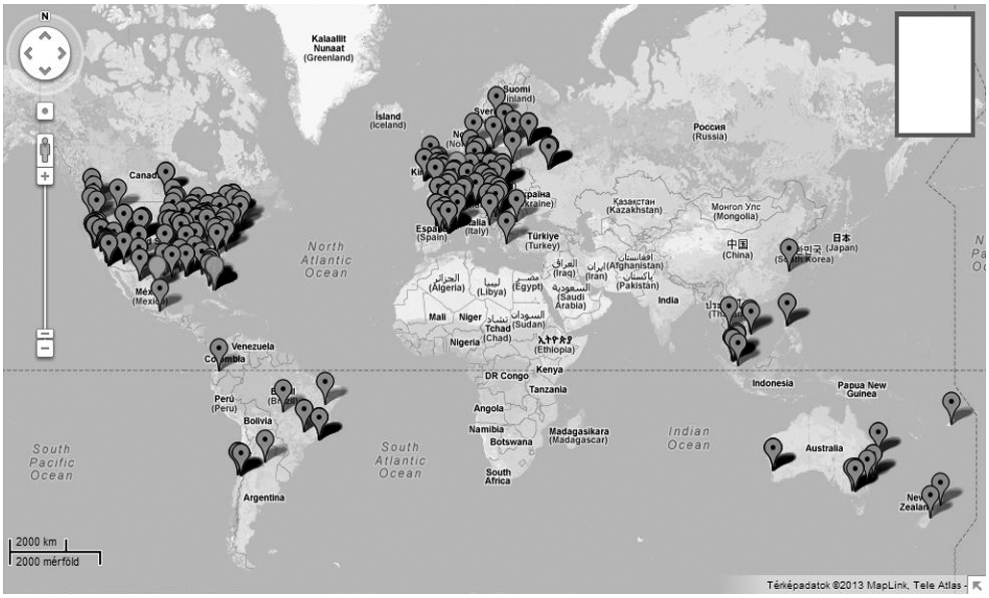


Figure 3. Geographical distribution of foreigner fixie riders
(source: www.googlemaps.com)

The questionnaire

We designed a questionnaire for the research. The questionnaire went through a validity procedure. The validity procedure was checked on the population of Szeged.

The database optimized for the SPSS statistical softer by www.kerdiovem.hu, went through a special conversion procedure to get its final file format. The statistical calculations were analyzed by an open-source coded Rstudio statistical software which is free for download. We have run the tests on a scripter written in statistical programming language.

Statistical methods

During the research we implied basic statistical – average, standard deviation calculations. Data referring to age were compared with a two-sample t-test.

Most questions made only one answer possible, the examined subject could only choose one answer from five. The discrete variables could take five values in each question. We visualized the observed incidence rates on a contingency chart where it was necessary. We calculated the expected incidence rates with a Chi-square test. These could be calculated with the assumption of a complete autonomy, which shows no difference between the examined groups concerning frequency.

The Chi-square test can only be interpreted, if the expected frequency is lower than 5 in the maximum 20% of the cells in the contingency chart (in the present study, the size of most charts are 5x2, containing 5 rows, 2 columns, 10 cells). If the expected frequency value appears in less than 20% of the cells, the 2-sided asymptomatic p value can be taken into account.

It is generally accepted that the result are only acceptable under a 0.05 p value (alpha significant level). If p is lower than alpha (0.05), it can be stated that the sample contains differences in the two examined groups of varied values (between the answers given by Hungarian and foreigner subjects). If p is not lower than 0.05, it cannot be rejected that they are independent according to the sample.

Results

The reason why people change to fixie

Both the Hungarian and foreigner fixie user groups chose this type of bicycle mainly because of its *practicality* and *rapidity*. C*ompany* and *training* as sources of motivation were equally unimportant point of views with a closely 10% ratio. The two groups answered in a very similar rate.

Why did you start riding a fixie?	Hungarian		foreigner	
I fell for it	17	27.4%	93	34.8%
It's fashionable	0	0%	6	2.2%
It's fast and practical	33	53.2%	115	43.1%
It's my daily training	6	9.7%	21	7.9%
On the influence of my companions	6	9.7%	32	12%
Total	62		267	

Figure 4. The answers of the Hungarian and foreigner fixie riders for question – Why did you start riding a fixie?

The result of the Chi-square test showed that there are no significant differences between the answers of the two groups (Chi-square test ($\chi 2$) = 3.8068, df [degree of freedom, n-1] = 4), where the p = 0.4328. The p value of the 2000 simulated Pearson Chi-square sample test is 0.4068, so there is no significant difference between the answers of the two groups. The distribution of the answers was similar between Hungarian and foreigner subjects: members of both groups started riding a fixie from the same purpose. It was also proved by the Fischer Exact test, where p = 0.5079.

What sports had you done before you started riding a fixie?

Most subjects chose "other" option (37.1% of Hungarians, 46.8% of foreigners). From the remaining four answers, most foreigners marked rolling sports (18.4%), while 27.4% of Hungarian subjects marked ballgames. Athletics was chosen in the same rate from the two groups examined (6.5% of Hungarians, 7.9% of foreigners).

What sports had you done before you started riding a fixie

	Hungarian		foreigner	
track & field	4	6.5%	21	7.9%
I was a ball game player	17	27.4%	45	16.9%
some rolling sport	14	22.6%	49	18.4%
some water sport	4	6.5%	27	10.1%
other sport	23	37.1%	125	46.8%
Total	62		267	

Figure 5. What sports had you done before you started riding a fixie? Hungarian and foreigner subject answers

We got a similar result as in the previous question. The answers of the two groups examined did not show a significant difference. In the Chi-square test ($\chi 2$) = 5.3549, df = 4, p = 0.2528. The value of p in the Pearson Chi-square test is 0.2714, so the distribution of the answers is similar statistically. The members of both groups had done the same types of sports before they started riding a fixie. That was also proved by the Fischer Exact test where p = 0.2728.

What distance do the riders take?

Most of the Hungarian and foreigner bikers (46.8% of Hungarians, 39.7% of foreigners) ride between 10 and 30 km per occasion. In both groups the 1-5 km distance was marked as an answer the fewest times. As a conclusion,

we can state that most of the Hungarian and foreigner subjects who ride a fixed gear bike ride 5-30 km/riding occasion. The distribution of the questions showed no significant differences between the two groups examined. (χ^2 = 1.5752, df [degree of freedom, n-1] = 4), p = 0.8132. Pearson χ^2 - p = 0.8046, Fischer Exact p = 0.8324).

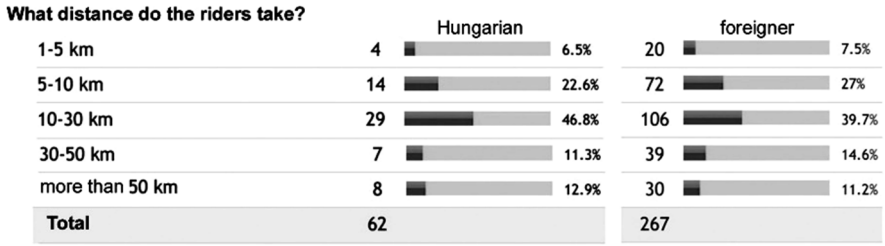


Figure 6. What distance do the riders take per occasion?

In what form do fixie riders cycle in most cases?

With the question above, our aim was to find out who the riders ride with, whether they ride alone or not. Members in both groups mostly ride on their own. (67.8% of Hungarians, 64.1% of foreigners). Nameably, Hungarians do not cycle in bigger groups at all, meanwhile 2.3% of foreigners do so. Cycling in a group of two or three was marked more among foreigners, too. According to the results, it can be stated that riding a fixie in a group is more fashionable in a foreign country than in Hungary. It is probable that traditional cycling would show the same tendency among the same subjects.

The distribution of answers of the two groups did not show a significant difference. (χ^2 = 3.4511, df = 4), p = 0.4854. Pearson χ^2 = 0.4511 - p = 0.5057, Fischer Exact p = 0.6343).

Figure 7. In what form do you ride a fixie in most cases?

What is the opinion of fixie riders about using a brake?

The answer to the question above shows a difference. Foreigners seem to be more careful in connection with this topic. The rate of foreigner riders who use a brake (but understand the ones who do not) was higher than the rate of Hungarians.

The distribution of the answers of the two groups do not show a significant difference based on statistical tests. (χ^2 = 4.7902, df = 4), p = 0.3095. Pearson χ^2 = 4.7902 - p = 0.2869, Fischer Exact p = 0.2961).

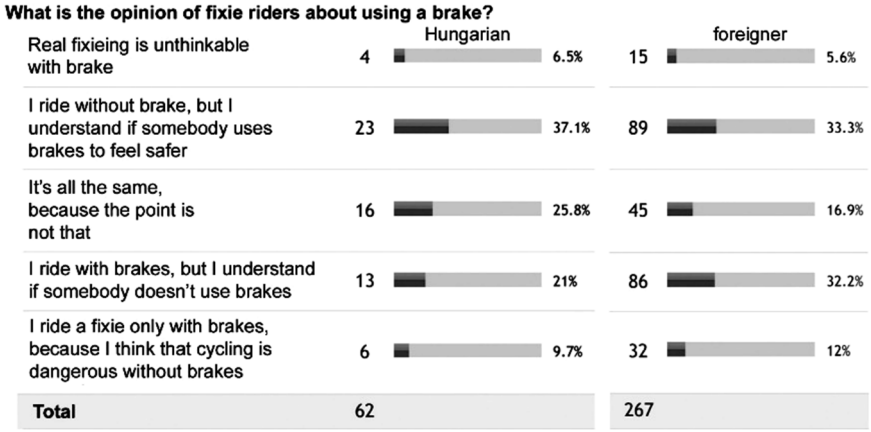


Figure 8. What is your opinion of fixie riders about using a brake?

How dangerous is fixie-riding?

The two groups gave almost the same answers to the question above. The most significant difference appears in the answers given to "not dangerous at all" question. A smaller rate of foreigners consider fixie riding to be entirely safe, a bigger rate of them think that it is entirely dangerous. However, subjects who consider fixie riding to be entirely dangerous are in a neglectable rate compared to others.

The statistical tests did not show a significant difference between the answers of the two groups. (χ2 = 3.7766, df = 4), p = 0.4371. Pearson χ2 = 3.7766 - p = 0.4288, Fischer Exact p = 0.5025).

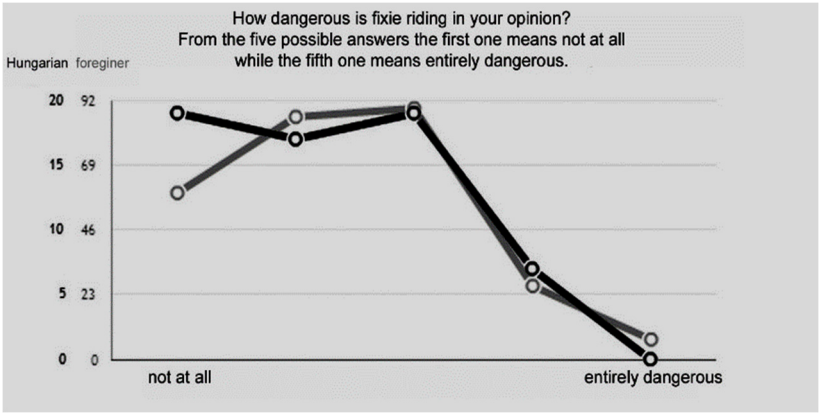


Figure 9. How dangerous is fixie riding in your opinion? From the five possible answers the first one means *not at all* while the fifth one means *entirely dangerous*. Levels between these two answers could be shaded in three additional answers.

In what extent are fixie riders aware of the traffic rule regulations concerning fixie riding?

Our aim was to measure how much bikers are aware of traffic regulations in Hungary (Horváth, 2010) and abroad. Based on the data, both groups claimed in a higher rate (35.5% of Hungarians, 43.5% of foreigners) that they are completely aware of the regulations referring to fixies. The results were very similar, except for "I think there is no regulation for that" answer, where we differences could be detected (clearly visible on the diagram).

According to the Chi-square test, p shows a probability level less than 0.05. We can confirm that there are statistically significant differences between the answers of the two groups. However, this statement still has to be treated with reservations, as the results of the two Chi-square tests (standard and Pearson) are beyond the level of 0.05, but the Fischer-Exact test did not show the significant result. (χ^2 = 9.5353, df = 4), p = *0.04903*. Pearson χ^2 = 9.5353 - p = *0.04548*, Fischer Exact p = 0.06524).

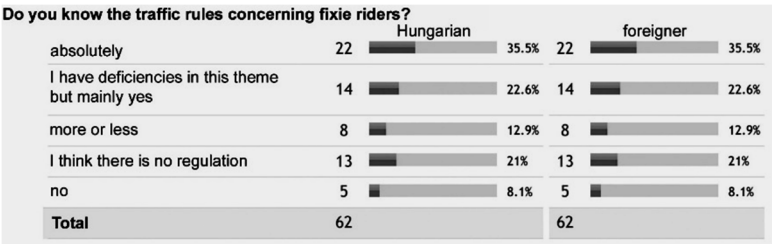


Figure 10. Are fixie riders aware of traffic rule regulations related to fixies?

How long have you been riding a fixie?

Since the fixie bicycle riding is a fresh phenomenon nowadays, it is important to know how long the owners have been using fixies. We also wanted to find out if there is any connection between the cycling trend and the number of fixie riders.

Data shows that fixie riders from foreign countries have known and used fixies for a lot longer than Hungarians. Most riders started 1-3 years ago. Therefore we can assume that the phenomenon began to flourish in that period.

In all the three estimation coherence examination statistical tests p value was lower than 0.05, which means that there were differences between the answers of the two groups. Years spent with riding on a fixie statistically reparse in a different way. (χ^2 = 12.0292, df = 4), p = *0.01714*. Pearson χ^2 = 12.0292 - p = *0.01899*, Fischer Exact p = *0.02103*)

How long have you been riding a fixie?

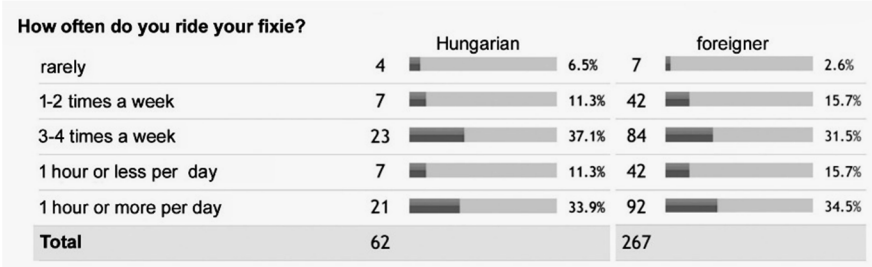
	Hungarian		foreigner	
less than 1 year	7	11.3%	58	21.7%
1-3 years	37	59.7%	101	37.8%
2-5 years	14	22.6%	70	26.2%
5-10 years	4	6.5%	27	10.1%
more than 10 years	0	0%	11	4.1%
Total	62		267	

Figure 11. How long have you been riding a fixie?

How often do you ride a fixie?

We were curious to know how much time fixie riders spend on riding. Observing the results it can be stated, that fixie riders do exercises on a regular basis. Hungarians marked the “two or three times a week” answer, while most foreigner subjects ride more than an hour every day. Further answers brought almost the same results in both groups.

In spite of the differences, no significant diversion can be shown between the answers of the two groups. (χ^2 = 4.0359, df = 4), p = 0.4012. Pearson χ^2 = 4.0359 - p = 0.4283, Fischer Exact p = 0.4063).



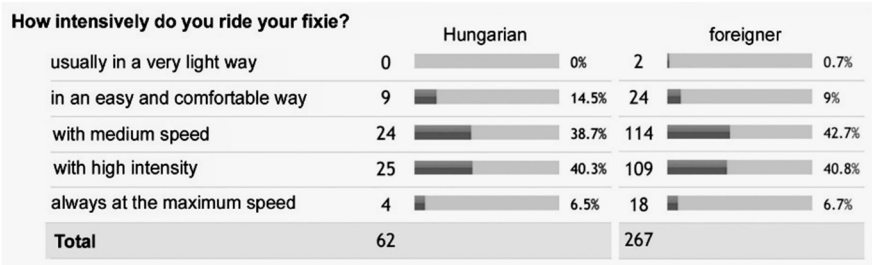
How often do you ride your fixie?	Hungarian		foreigner	
rarely	4	6.5%	7	2.6%
1-2 times a week	7	11.3%	42	15.7%
3-4 times a week	23	37.1%	84	31.5%
1 hour or less per day	7	11.3%	42	15.7%
1 hour or more per day	21	33.9%	92	34.5%
Total	62		267	

Figure 12. How often do you ride a fixie?

How intensively do you ride?

Since fixed gear bikes are chosen mostly because of their speed and practicality, it is clearly visible that who the fixie riders are. A great number of the subjects marked the medium speed and high intensity answer. Therefore we assume that the experience factor of a fixie is in direct ratio with its speed. Answers suggesting low and comfortable intensity were chosen in a lower rate. The number of "always with high intensity" riders is not significant among the subjects examined.

There are no significant differences between the answer of the two groups. (χ^2 = 2.1971, df = 4), p = 0.6996. Pearson χ^2 = 2.1971 - p = 0.7186, Fischer Exact p = 0.733)



How intensively do you ride your fixie?	Hungarian		foreigner	
usually in a very light way	0	0%	2	0.7%
in an easy and comfortable way	9	14.5%	24	9%
with medium speed	24	38.7%	114	42.7%
with high intensity	25	40.3%	109	40.8%
always at the maximum speed	4	6.5%	18	6.7%
Total	62		267	

Figure 13. How intensively do you ride your fixie?

Why is fixie a good alternative in urban transport?

There was more than one possible answer to this question (Hungarian n =156, foreigner n = 612). The opinion of the two groups was similar. Both groups marked the practicality and speed of a fixie as its most attractive characteristic features when considering fixie as an alternative form of urban transport. Its size and its reliable demand for service came in the second place. Foreigners emphasized its eco-friendliness, while Hungarians took financial matters into account.

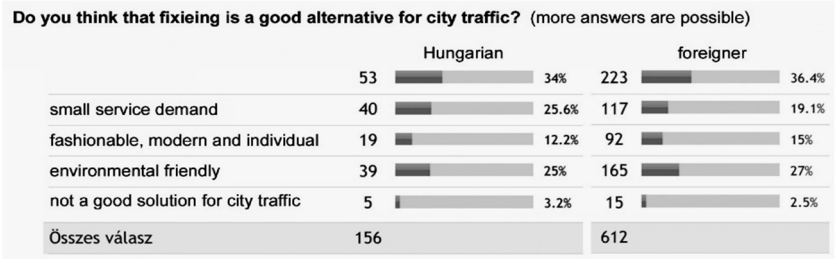


Figure 14. How good alternative is riding a fixie in urban transport? (Hungarian n =156, foreigner n = 612)

According to the opinions, fashionability, modernity and originality did not play a crucial role in this matter. The number of subjects who do not consider fixie as a good alternative in urban transport is relatively low.

Use of protective equipment and clothing

To the question related to protective equipment and clothing, most answers were "I never do" or "occasionally if I feel it is necessary" in both groups examined. The fewest of Hungarian subjects marked "only protective equipment", while the fewest foreigners marked "only protective clothing" options.

Answers of the groups show a significant difference according to statistical analysis. Hungarian and foreigner subjects share a different opinion about the habit of wearing *protective clothing*. In all the three statistical tests the value of p was lower than alpha. (0.05). (χ^2 = 19.2739, df = 4), *p = 0.0006943*. Pearson χ^2 = 19.2739 - *p = 0.001499*, Fischer Exact *p = 0.0002733*).

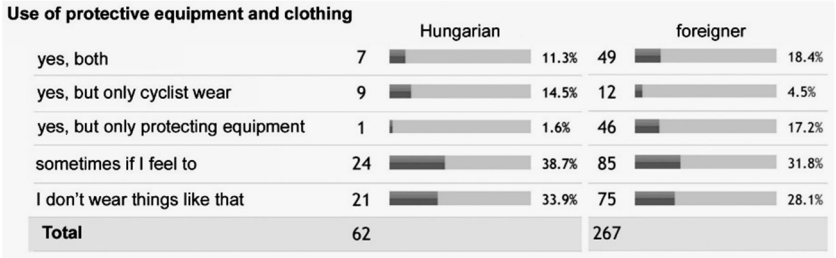


Figure 15. Answers related to protective equipment and clothing (Hungarian n = 62, foreigner n = 267)

What does fixie riding have beneficial effect on?

It is clearly seen from the montage of diagrams that foreigners and Hungarians shared the opinion about which fields of their lives are influenced positively by riding a fixie. Results are significant from recreation, also from physical and psychological point of view.

Table 1. Effects of fixie riding

Fixieing has positive effect to (1-5, 5=true, 1=don't true)		Hungarian		foreigner	
		n	**%**	n	%
my personal relationships	1	10	**16,1**	56	**21,0**
	2	6	**9,7**	38	**14,2**
	3	19	**30,6**	66	**24,7**
	4	13	**21,0**	50	**18,7**
	5	14	**22,6**	57	**21,3**
my personal schoolastic record	1	28	**45,2**	87	**32,6**
	2	8	**12,9**	32	**12,0**
	3	20	**32,3**	88	**33,0**
	4	4	**6,5**	33	**12,4**
	5	2	**3,2**	25	**9,4**
my social life	1	9	**14,5**	32	**12,0**
	2	3	**4,8**	28	**10,5**
	3	18	**29,0**	64	**24,0**
	4	25	**40,3**	72	**27,0**
	5	7	**11,3**	71	**26,6**
my work place mood	1	12	**19,4**	38	**14,2**
	2	6	**9,7**	16	**6,0**
	3	12	**19,4**	49	**18,4**
	4	13	**21,0**	67	**25,1**
	5	19	**30,6**	97	**36,3**
my integration to other communities	1	14	**22,6**	39	**14,6**
	2	12	**19,4**	26	**9,7**
	3	18	**29,0**	79	**29,6**
	4	15	**24,2**	65	**24,3**
	5	3	**4,8**	58	**21,7**
spend my spare time more useful	1	2	**3,2**	20	**7,5**
	2	1	**1,6**	22	**8,2**
	3	9	**14,5**	50	**18,7**
	4	18	**29,0**	64	**24,0**
	5	32	**51,6**	111	**41,6**
my interest of the cyclist culture	1	5	**8,1**	17	**6,4**
	2	0	**0,0**	12	**4,5**
	3	3	**4,8**	37	**13,9**
	4	11	**17,7**	58	**21,7**
	5	43	**69,4**	143	**53,6**
my physics and state of health	1	1	**1,6**	9	**3,4**
	2	5	**8,1**	11	**4,1**
	3	8	**12,9**	29	**10,9**
	4	22	**35,5**	61	**22,8**
	5	26	**41,9**	157	**58,8**

Fixieing has positive effect to (1-5, 5=true, 1=don't true)		Hungarian		foreigner	
		n	**%**	n	%
my mood	1	2	**3,2**	10	**3,7**
	2	4	**6,5**	6	**2,2**
	3	3	**4,8**	28	**10,5**
	4	18	**29,0**	64	**24,0**
	5	35	**56,5**	159	**59,6**
the "atmosphere of home", the family harmony	1	24	**38,7**	46	**17,2**
	2	6	**9,7**	27	**10,1**
	3	15	**24,2**	89	**33,3**
	4	12	**19,4**	54	**20,2**
	5	5	**8,1**	51	**19,1**

(More than one possible answers - Hungarian n = 100, foreigner n = 513)

What do you use your fixie for?

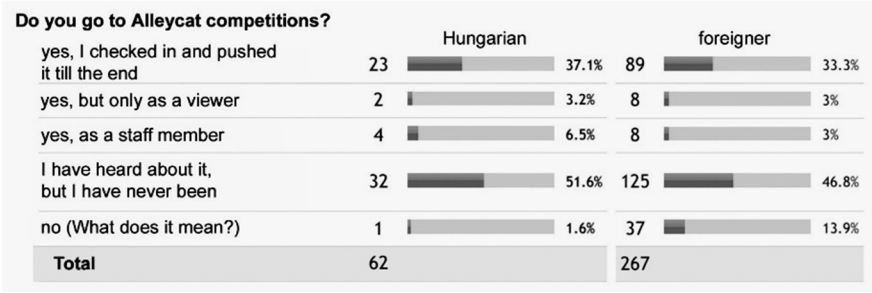
We tried to find out if there is a significant difference between the two groups considering the way they use a fixe. There is a similarity in the answers referring to *the use of fixies in transport*, *fixie as a tool of work*, *fixie as a way of physical activity*, *the use of fixie for tricks*.

Figure 16. Answers to What do you use your fixie for?
(Hungarian n = 100, foreigner n = 513)

Do you go to Alleycat competitions?

Alleycat competitions play a significant role in sub cultural aspect, as these events tend the culture formed around fixed gear bikes where people with similar interests can compete with each other.

We were curious whether fixie phenomenon has a bigger effect on competition habits abroad than in Hungary. Do foreigners attend more events due to an older history of fixies? The two samples showed similar results, there is no significant difference. Many have heard about the competitions but there is need for more regional events in Hungary and abroad as well.



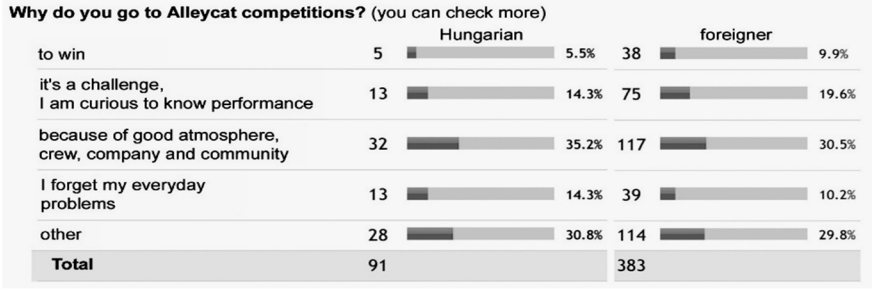
Do you go to Alleycat competitions?	Hungarian		foreigner	
yes, I checked in and pushed it till the end	23	37.1%	89	33.3%
yes, but only as a viewer	2	3.2%	8	3%
yes, as a staff member	4	6.5%	8	3%
I have heard about it, but I have never been	32	51.6%	125	46.8%
no (What does it mean?)	1	1.6%	37	13.9%
Total	62		267	

Figure 17. Answers to Do you go to Alleycat competitions?

According to the Chi-square test, the value of p shows a higher than 0.05 probability level, the result is not significant. Therefore we cannot find a significant difference between the answers of the groups. However, this statement has to be treated with reservations. Even if the results of two Chi-square tests (standard and Pearson) go over a 0.05 level, according to the Fischer-Exact test, the difference is significant. (χ^2 = 8.6393, df = 4), p = 0.07078. Pearson χ^2 = 8.6393 - p = 0.06847, Fischer Exact *p = 0.02516*).

Why do you go to Alleycat competitions?

The mostly preferred answers were in connection with the special and unique atmosphere, good company and community of the competitions. Naturally, the four options given by us did not satisfy 1/3 of the subjects. They chose the "other" option at the same rate and gave their reasons in writing. Unfortunately, as more than one answer was possible and acceptable in this matter, we could not perform a statistical comparison.



Why do you go to Alleycat competitions? (you can check more)	Hungarian		foreigner	
to win	5	5.5%	38	9.9%
it's a challenge, I am curious to know performance	13	14.3%	75	19.6%
because of good atmosphere, crew, company and community	32	35.2%	117	30.5%
I forget my everyday problems	13	14.3%	39	10.2%
other	28	30.8%	114	29.8%
Total	91		383	

Figure 18. Why do you go to Alleycat competitions?

Discussion

My first hypothesis was proved, as the subjects who filled the questionnaire did not differ significantly. However, the standard deviation value was higher in the foreigner group than in the Hungarian one.

My second assumption referring to sub cultural activities was also right. General use of fixies, the rate of participants in sub cultural competitions and activities did not show significant differences between the two groups. They exercise their fixie activities at the same rate.

My next hypothesis, namely that competitive habits built upon fixies would differ as fixie lifestyle is not as popular in Hungary as in a foreign country turned out to be false. Based on the answers received, although this kind of biking seemed to have an older history abroad, the flourishing of the fixed gear culture has the same starting period globally. Foreigners attend almost the same number of competitions as Hungarians. In the sub cultural sphere we are as up-to-date as others. However, there are many aspects we are behind the western line.

My hypothesis referring to traffic regulations, namely that there would be significant differences between the two groups in the aspect of the knowledge of the regulations, turned out to be partly true. More foreigners claimed that they were completely aware of the regulations than Hungarians did. In addition, they also marked the "for more or less I'm aware" answer at a higher rate. Among Hungarians, the higher rate of answers such as "I have an inadequate knowledge, but mostly I am aware of them" or "I think there is no regulation for that" show that fixed gear bikes are not obviously included in the Hungarian traffic regulations. They might be one step ahead of us abroad.

My fifth hypothesis was that foreigner riders take longer distances since they have to spend more time on the road to reach their destinations. The distance in towns might be longer than in Hungary, also the distance between towns. This was not proved by analysis, as the results were very similar to each other between the two samples. The average distance is from 5 to 30 kms per riding occasion in Hungary and abroad too.

My assumption that the answers related to the recreation activities of fixies would not differ significantly was proved to be right. Based on the answers rates are very similar in the two groups examined. Fixie is on the same level of importance in the lifestyle of both groups. There are many reasons why fixie subculture is so unified all over the world. Although it is a relatively new branch, our globalized world based on Internet follows this trend, in this cultural phase with special shades, leaking of unique characteristics into the above mentioned closed world can be seen.

I got a positive answer to one of my previous theories, whether using a fixed gear bicycle can be adopted into recreation as a beneficial free time activity. During the process of data analysis it came to the surface that both groups use their fixies on a regular basis, on long distances and on medium or high intensity. Therefore it has a beneficial physical effect. Both Hungarian and foreigner riders use their fixies for other sports and free time activities apart from using it as a means transport. According to the subjects, riding a fixie influences their everyday lives and their mood in a good way. It plays a significant role in handling every-day-life stress. Therefore it has a beneficial effect on their time spent at work. It has not only raised our interest in cycling culture and physical activities in general, but riding a fixed gear bike means an excellent way of mental relaxation too. On the whole, taking the results into account I can state that riding fixed gear bicycles can be entirely adopted into recreation as a beneficial free time activity.

Conclusion

Present bicycles are on a high level of technical improvement. My aim was to present a bike that reflects the Spartan characteristics of the first and simplest bicycles. A couple of years ago fixed gear bikes (popular with only track bikers for a long time) burst into the public eye. They set the fashion and became means of transport, also free time activity equipments. Although fixies are becoming more and more popular nowadays, most people are not aware of the values and the essence of a fixie (Edwards & Leonard, 2009). Fixies cannot be compared to other bikes. As it is direct-powered, the biker is in an ongoing contact with the bicycle, they move together. The biker gets an immediate reaction from the bike while using the brakes. There are no mechanisms that would help the rider directly. The person is in symbiotic relationship with the machine (Ryan, 2005).

To prove my hypothesis, I chose the questionnaire method. The questionnaire contained 17 questions. It was translated into English then was uploaded to a website on the internet. After that, the questionnaire was personally linked to Hungarian and foreigner groups and websites that specialize in fixed gear bicycles.

The questionnaire was filled by 62 Hungarian and 267 foreigner fixie rider subjects from Chile to South Korea. The age of the subjects varied in a wide spectrum, from a 13-year old teenager to a 69-year-old one. The Hungarian questionnaire was available to be filled in for 13 days, the English version for 17 days.

My study has brought interesting results. I thought there would be significant differences between the two samples examined, but the results of the questionnaires show that fixie riders are similar to each other in the aspect of their age, cycling habits, cycling mentality. It has been proved that both groups cycle on a regular basis, the subjects ride on mostly medium or high intensity on longer routes. Riding a fixed gear bike has a good physical effect on the body, too. Both Hungarian and foreigner riders use their fixies for transport, games or simply for doing exercise. According to the subjects, riding a fixie influences their everyday lives and their mood in a good way. It plays a significant role in handling stress; therefore fixie riders are more relaxed and balanced at work. Their interest in cycling culture has also risen. Fixie is an excellent tool for physical and mental relaxation. There is no other bike type that provides so many ways of use. There is no other bike that manages to attract so many kinds of people.

All in all, proved with results and facts I can bravely state that riding fixed gear bicycles can be entirely adopted into recreation as a beneficial free time activity.

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