

# Who do you think is in control in addiction? -

## A pilot study on drug-related Locus of Control beliefs

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### Supplementary Material

#### Validation Results

Both confirmatory factor analysis and the item response model revealed that item 20 (“*People who are addicted will do anything for drugs because the drugs have taken control over their lives*”. / “*People who claim that they are incapable of getting off drugs have actually never really tried.*”) had the lowest factor loading/discrimination parameter within the *Addiction Recovery* subscale. After the exclusion of this item, the fit of the model significantly improved (see **Table S1**). We therefore excluded this item from final *Addiction Recovery* subscale.

**Table S1:** Summary of results of obtained by Confirmatory Factor CFI and the IRT model.

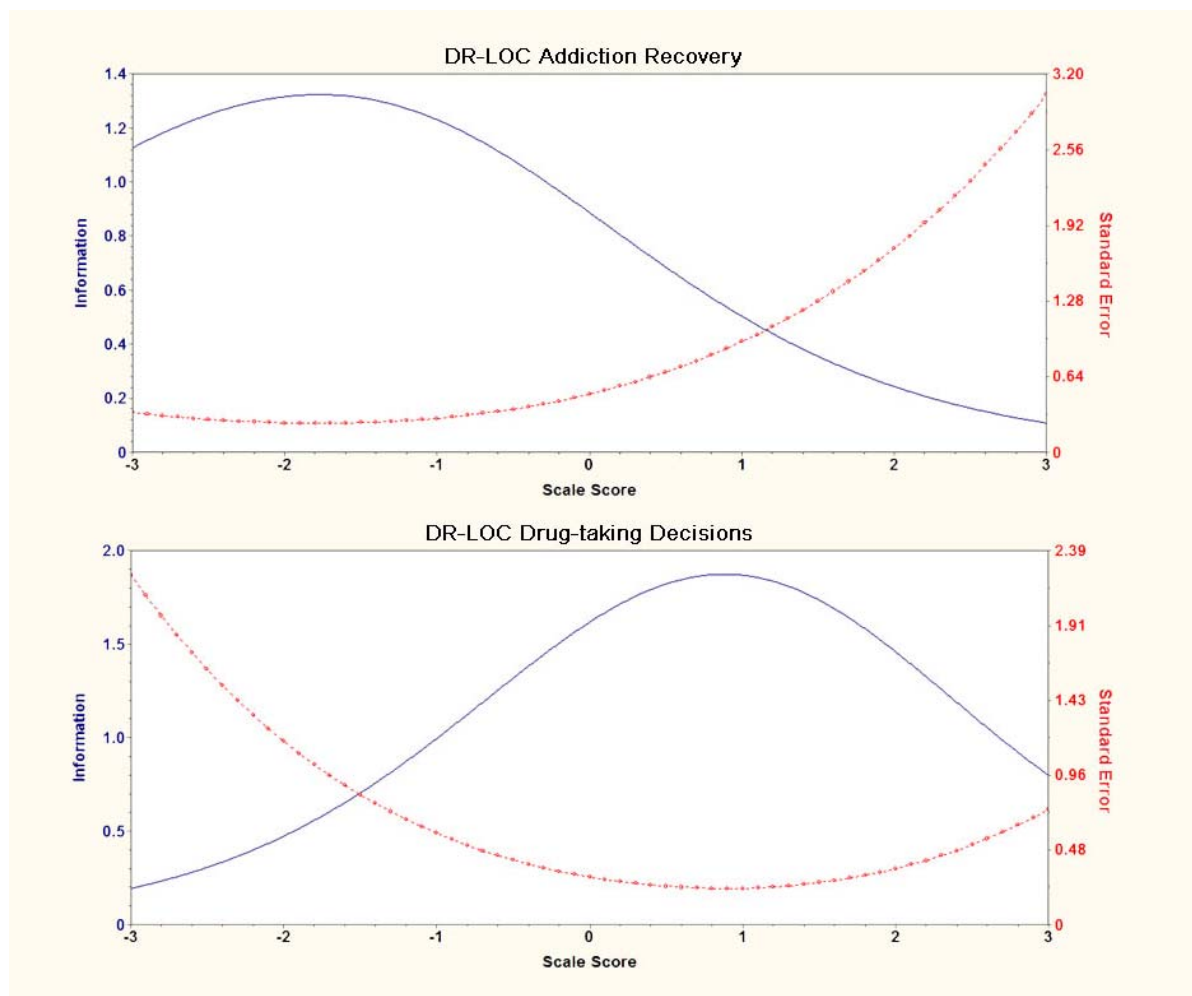
	<b>Addiction Recovery</b>		<b>Drug-taking Decisions</b>	
	Before exclusion (9 items)	After exclusion (8 items)	Before exclusion (9 items)	After exclusion (8 items)
CFI*	0.81	0.89	0.94	0.93
RMSEA <sup>#</sup>	0.053	0.042	0.041	0.051
-2logs (df)	5328 (8)	4554 (7)	6839 (8)	6053 (7)
Chi-square	72.7	41.1	55.1	51.2
df	27	20	27	20
p-value	<0.001	0.003	0.001	<0.001

\*Comparative Fit Index (CFI); <sup>#</sup> Root Mean Square Error of Approximation (RMSEA)

The second factor consisted of items related to the self-control over drug use. Similarly to the previous factor, item 19 (“*The idea that drugs can help a person with solving their problems is nonsense.*” / “*Drugs can boost a person’s self-esteem and help them face the problems they have to solve.*”) showed poor factor validity (0.29)/discrimination parameter (0.34) with latent factor. Fit indices for item response model improved after exclusion of this item (chi-square difference = 786, df=1, p<0.001) but did not improve for CFA model since they were already acceptable. Item 19 was excluded due to low validity (correlation) with the factor.

We reported Cronbach's alphas and the standard error of measurement (SEM) for comparative purposes with previous studies as these statistics impose strong and often unrealistic assumptions. More valuable insight into reliability of the scale is provided by IRT. In this approach SEM is viewed as a function (contrary to constant in classical test theory) with values changing along latent continuum and that is reciprocal to the test information function. Test information functions and standard errors of measurement for both factors are presented in **Figure S1**, which shows a remarkable difference between two subscales of DR-LOC. The smallest measurement error within *Addiction Recovery* subscale is observed for respondents with low to moderate scores whereas for *Drug-taking Decisions* it is for moderate to high scores. Values of information function are, however, very low for both factors. This suggests low reliability of the sum scores. Future revisions of the scale should therefore add more items or use more discriminative items.

**Figure S1:** The test information function (solid line) and standard error of measurement (dashed line) separately for each of the two DR-LOC scales. The metric of the x-axis has been transformed into z-scores.



**Table S2:** The 25-items of the initial DR-LOC scale

1. ☐ a. Everybody has a choice as to whether they take drugs or not; what other people say or do has nothing to do with it.  
☐ b. There is often a lot of pressure from peers to join in and use drugs.
2. ☐ a. It is difficult to resist drinking at a party where everybody is enjoying the booze.  
☐ b. There should be no problems resisting temptations to drink on a night out if somebody has made up their mind beforehand that they don't want to drink.
3. ☐ a. Those who are successful in getting off drugs are often the lucky ones.  
☐ b. Getting off drugs depends upon lots of effort and hard work; luck has nothing to do with it.
4. ☐ a. Everyone can have a good time without taking drugs; it's just a matter of attitude.  
☐ b. It is not possible to have fun without being stoned or drunk.
5. ☐ a. For people who are addicted to drugs, it is impossible to stop taking drugs for good.  
☐ b. By taking an active part in a treatment program, it is possible to learn to control the use of drugs.
6. ☐ a. I often choose to have an alcoholic drink because alcohol makes life more interesting and exciting.  
☐ b. Most of the time I don't really know why I choose to have an alcoholic drink.
7. ☐ a. Drugs bring out the bad side of people, making them do things that they later regret.  
☐ b. People who have become addicted to drugs have to take responsibility for their drug problems.
8. ☐ a. There is no such thing as an irresistible temptation to take drugs.  
☐ b. There are some people who experience strong irresistible urges to take drugs that they cannot control.
9. ☐ a. Only when people come to terms with the long-term effects the drugs have on their lives, are they able to change their behaviour and give up drugs for good.  
☐ b. Drugs are so powerful; just knowing that they are around undermines all good intentions of giving up.
10. ☐ a. Addiction is a problem of willpower and determination.  
☐ b. Willpower on its own is not enough to beat addiction, nor is it enough to remain drug free – therapy and support from friends and family is vital for a successful recovery.
11. ☐ a. One of the major reasons why people take drugs is because they cannot handle their problems.  
☐ b. Most people do not realize that drug-related problems are often influenced by chance events.
12. ☐ a. The idea that people are driven to take drugs because of peer pressure is nonsense.  
☐ b. People are unaware of their friends' influence when taking drugs.
13. ☐ a. Feelings of helplessness and anxiety drive people to drink or to take drugs.  
☐ b. The idea that people use drugs or drink alcohol to cope with feelings of anxiety is just an excuse for their behaviour.
14. ☐ a. Most of the time, I don't realise how much alcohol I am actually drinking.  
☐ b. I always know how much alcohol I drink when I go out.
15. ☐ a. Without the support from friends and family drug addicts cannot stay abstinent.  
☐ b. People who are not successful in getting off drugs often have not taken advantage of the help that is available.

16. ☐ a. There isn't such a thing as an addictive personality.  
☐ b. Not getting involved in drugs mainly depends on things going right for you.
17. ☐ a. For people who have known drugs for all their lives, it is almost impossible to break away because they cannot compare drugs to anything else.  
☐ b. There is a direct connection between how hard people try and how successful they are in getting off drugs.
18. ☐ a. Everybody can pull themselves together and fight the urge to drink or to take drugs.  
☐ b. There are people who feel completely helpless when it comes to resisting taking drugs.
19. ☐ a. The idea that drugs can help a person with solving their problems is nonsense.  
☐ b. Drugs can boost a person's self-esteem and help them face the problems they have to solve.
20. ☐ a. People who are addicted will do anything for drugs because the drugs have taken control over their lives.  
☐ b. People who claim that they are incapable of getting off drugs have actually never really tried.
21. ☐ a. Anybody can become addicted to drugs when they get off the straight and narrow.  
☐ b. Drug use is an excuse for not doing the things that you are supposed to do.
22. ☐ a. Addiction is for life: once contracted, it will never go away, no matter what you do.  
☐ b. Successful recovery from addiction is possible but it is hard work.
23. ☐ a. If people want something badly enough, they can make it happen; they can even beat addiction.  
☐ b. People with addictive personalities will always be addicted to something; if they stop using drugs they start using something else.
24. ☐ a. It is possible to stay away from drugs if things are going well for you.  
☐ b. Life is what you make it – nobody has to take drugs for the rest of their life.
25. ☐ a. No one is in control of what they do when drunk or drugged up.  
☐ b. With enough effort, everybody is able to control what they do.