This is the document I (Angel Abril-ruiz) used to my speech in CNICPhDay19. It's, more or less, a transcription of I said. The file of the presentation is at: http://bitly.com/CNIC22NOV19

1.Thank you to the organization of this wonderful and interesting congress for his invitation. Thank you everyone for your interest in this lecture where we are going to talk about research integrity and research misconduct.
You can download this presentation from the web address http://bitly.com/CNIC22NOV19

2.First of all excuse me for my English, but I don't use it in my day to day.

3.I usually speak murciano or panocho (is the special Spanish in the Region of Murcia) with my plants of tomatoes and other vegetables that I grow in my farm with a lot of love. So, excuse me but don't worry because I'll try to use my best English for you.

Told this, let's go with this interesting matter: misconduct in science!

4.In two thousand and thirteen I started my PhD studies. All my life I had been a real passion for the knowledge and I wanted to know the methods that scientists use for research, so I decided to do a PhD on Consumer Behavior (yes, social sciences I'm sorry, I'm not perfect). The first years were a very nice experience. I learnt a lot of things about statistics, methodology, design of experiments and in particular about my gap of research~~: a mix between Evolutionary Psychology and Sensory Marketing in order to achieve that people eat more fruit and vegetable to reduce the problem of obesity.~~

5.As I have said, the first years were fantastic doing experiments with people and trying to understand his behavior, but, when we started to handle data (or to operate with data)

6.I saw some methods I thought maybe were not very correct.

7.Time went by, we enrolled over four thousand people between pretests, pilots and experiments. We sent working papers to two congresses, but little by little the relation between my PI (supervisor) and me, was each time worse because of my critics to our methodology.

8.Anyway, with serious doubts, I started to write my thesis but when I certified that the raw data has been manipulated by my supervisor...

9.I thought, that was too much for my ethic and moral beliefs. In that moments, hundreds of doubts came to my mind and I felt down in a bottomless pit.

10.Psychologically I was broken. I had to take a decision. I needed to disconnect from reality! I remembered those moments as the worst of my life. So I decided to do a kind of spiritual trip.

11.I took my backpack, my tent and I went to walk along Pyrenees. I walked and run, eight hundred fifty kilometers from the East to the West, all the Pyrenees, for twenty one days.

12.One marathon per day. Alone, with seventeen kilos in my backpack, sleeping in whatever place, without using shelters, in the middle of the high mountains, suffering rain, hail, cold and heat.

13.The first ten days I cried every morning during one or two hour, thinking about my experience doing the PhD. I felt my time were been lost.

14.I wonder every day who really I'm and what is my mission in this world.

15.But maybe drinking the pure water of the mountain had a magic effect in my feelings

16.because finally I could find again the positive way of living the live.

17.When I came back to the real world I decided to do a series of things:
1) I decided to renounce, to give up, to the defense of my thesis.
2) I sent a letter to the dean of Escuela Internacional de Doctorado de la Universidad de Murcia and other organisms of my university doing official my decision.
3) I needed to know the deep reason why people do these kind of things (dishonest behaviours) and other ones, so I decided to start the degree of psychology (surprising, really?).
4) To not forget I decided to write a book talking about the story. Also I wanted to help other people who was living a similar situation.
5) After six months for closing other projects, I started to research deeply about this matter, the misconduct in science.
6) And finally, as result of my research, I published the conclusions in the book «Manzanas Podridas» (the preprint is available in PsyArXiv).

I want to make it clear that the books are not a business: I don't earn any money with these books! You can get it in this moment free from the web!

18.Well, this has been the motivation of my research. Now, let's go to enter in the core of this lecture: the misconduct in science.

19.I suppose that many of you have studied philosophy in your secondary school or bachelor, don't you? Maybe do you remember what is a syllogism...

Let me use it like an easy starting point.

20.The logical question is that:

1. A lot of people lie: we have a lot of literature and a lot of evidence that point this.
2. Scientists are people ---although we know, sometimes scientists are close to God.

And therefore, using the logic of the syllogism we can affirm that: A lot of scientists lie.
and this fact is a sock for the society...

21.because scientists are the most appreciate professionals (even in Spain). And LIE and the bad things are in one place of our mind and SCIENCE and good things in other, and putting together both concepts, cause what psychologists name COGNITIVE DISONANCE. We say: oh, is impossible that a scientist lie. But, the literature and evidence seems to support this simple hypothesis.

22.Let’s have a look. Thirty three percent of the participants in this study admitted to do in the last three years some questionable research practice.

23.24.Other more recent study suggests that the big majority of the participants admitted to feel pressure in order to achieve a specific result in their investigations (maybe this is familiar for some of you).

25.I like this figure that the profesor Joaquín Sevilla shared in his blog 3 years ago (excuse me but is in Spanish but I think is easy to understand).
The idea is that we have a continuous between the most honest behavior and the worst.

25.But this is “normal”, like the most of effects in the nature. So, for one hand, the most probably is to have very few people that lie a lot (the right tail of the bell); this is the people whose names we read in the headlines of the newspapers. But, for the other hand, we have a lot of people that lie a few (in the middle of the curve).
These last scientists don’t appear in the newspapers, almost anybody know them, but they lie everyday--- and these ones, dear friends, are the real problem of the science by the effect of the aggregate behavior.

26.There is a theory of Donald Cressey that speaks about why people do fraud. Daniel Wessel adapted to the scientific misconduct saying that a scientist lie because: One) Has a motive or feel pressure; two) has the opportunity; and three) he has the capacity to ra’tionalize this bad behaviour.

26.Yes: scientists are human beings (is the news of today).

27.Now, I think that is the moment to put names to this general idea of fraud.

28.29.If you have to remember only one concept of this lecture, this must be this: research integrity. Research integrity is the positive way to look this matter. We are talking about research integrity in this lecture. Research integrity is about the professional behavior that people can expect of the scientists. And the negative way is research misconduct.

30.Following giving names to these concepts, I like to considerate the framework that I designed during my research, and I published in the book. Look that the idea is similar to the picture of Joaquin Sevilla. I try to order different concepts or ideas we can find in the literature. At the left we have the perfect behavior. The literature talk about Responsible Conduct of Research —below this umbrella we have the theories of research integrity and research ethics that are different concepts, remember!. At the right, we find the famous FFP, that is the worst behaviour. Some researchers (me between them) use the word FRAUD to this level of misconduct. And in the middle we have the QRPs

that again, is the most common behaviour (everything is normal in this life) (12 minutos hasta aquí)

31.What is Fabrication, Falsification and Plagiarism is perfectly clear. Almost everybody use the definition declared for the government of US around the two thousand year (you can read later in your home with more time).

32.And in the sack of QRP we can find dozens of behaviors. Let's look some examples in the screen. (COMENTAR ALGUNOS) Maybe, many of these habits are typical in our day to day but, despite of this, these practices go against the research integrity.

33.But there are a lot of habits or behaviors more. We have here more examples. And PAY ATTENTION TO THIS REFLEXION: many of these habits, come, from the tradition, of publishing only positive results. And this is a problem for the river of the science. And the responsible are not only the journals. Each of us, as well, is responsible of this situation, because we are playing this game, looking for other place, in the most of cases.

34.In particular, in the language of the street, we are talking about these practices. For example: HARKing: Hypotesizing After Results are Known. Cooking data: is run, and run, and re-run our data in our statistic software R-Study or in our SPSS until we obtain a significant p-value; or what is the worst, to delete [di'lit] some data that improve our results, but curiously, finding always a rational explanation to delete that data. Maybe some of you, know somebody who do this (not you, of course, a friend of you, obviously!)

35.I think that the area of most of you is related with Biology. In these areas, where is tipical to work with Western blots, pictures of cells, pictures of animals...is relevant the use of fixing (trucar) or manipulating without integrity the images (the pictures), popularly known as photoshoping.

36.In twenty sixteen, Elisabeth Bik, the famous Arturo Casadevall and Ferric Fang, achieved to publish this study, after a lot of problems because any journal wanted to published it, where they found that around the 4 percent of the more than twenty thousand papers they had analysed, contained problematic figures that suggested a deliberate manipulation.

37.In the papers of biology is terrible the amount of figures that are manipulated. As a curiosity, Elisabeth Bik (with a career in Stanford and other relevant positions, is a reference in this matter), decided this April to take, at least, a year off to dedicate her full time to investigate and to fight this issue ---Elie is a influencer in this subject, so I recommend follow her in Twitter..

38.Well, until now we have seen firstly my personal motivation, next we have had a look of the names of the concepts, and then, we are going to look some papers that speak about the prevalence of the research misconduct in the academy.

39.40.41.We have quite literature about research misconduct. I have share with you here some papers I have analyzed in my book.

42.We can find several studies talking about research misconduct but using differents ways to estimate the problem. It's difficult to obtain a specific number and to design the tool for measuring.
Mainly, we can find studies based in 3 methods: studies that ask people about his behavior or the behavior of his colleagues; studies that analyse the results of the papers looking for conscious or unconscious mistakes; and finally, other point of view can be the number of retracted papers.

43.It's not easy to find a specific number but it seems that the 2% for FFP and around the 30% for QRP are the level of reference in different studies..
For example, this is part of the paper we saw at the beginning. Very few researchers admit to have done FFP in the last 3 years (0.3%) but around 30% admitted to have done some kind of QRP. A curious finding in this study is that senior researchers lie more than juniors (this effect has a curious explanation).

44.Maybe the most cited article in this arena [aruina] is the meta-analysis of Daniel Fanelli. Fanelli found that in the self-reports studies (self-reports is when we ask to one participant about his own behavior versus non-self-reports that is when we ask about the behaviour of others colleagues). Anyway, 2% of the participant admitted to have done FFP sometime; and in the non self-reports he found around a 14%.

45.But, in the less serious bad practices (QRPs), the number was around 33% for one and 70% for the other: that is: 70% of the participants admitted that they knew colleagues that did QRP, and 33% admitted that themself do it (it's a bit heavy, don't it?)

46.Regarding the number of retractions the level is very low. We have only around four retracted papers per TEN THOUSAND published, but the meaning of this, is not that few papers are incorrect, is that, there are a lot of forces in the 'industry in order to avoid that papers are retracted.

47.If we have a look to the number of papers retracted in PLos ONE, we can see that the number has increased 'exponentially recently. This is not because people lie more but, in this particular case, is because of the work of Elisabeth Bik.
ATTENTION: Think this: What would happen if we have more Elisabeth Bik in each of our areas of research? Maybe, we realized, that some papers we have read, are not so many correct as we think. And maybe, we would realize that some of our dear colleagues, lie a bit.

49.And speaking about retractions is compulsory to talk about RETRACTION WATCH. They keep, support and feed a database with the papers that are retracted. And as curiosity also make a List, the retraction watch Leadeboard, with the scientists with more retracted articles.

50.In short, the evidence seems to say us, AGAIN, that: Few people lie a lot but a lot of people lie a few.

51.And finally let's wonder that: Is there someone worried about this matter?
52.Fortunately yes there is, not too much in Spain, here is a taboo and almost nobody want to talk about it —so, congratulations for the people of this congress for breaking this taboo, here, in Spain! But in more [di'velopt] developed countries, we find several institutions we can use as reference.

53.The pionner and the leader is the Office of Research Integrity in USA. They are part of the family that built, 3 ['dequeis] decades ago, the FFP definitions (we saw twenty minutes ago). Thanks to them, and thanks to Nicholas Steneck,

we have the World Conferences of Research Integrity..

In the second edition was born the Singapore Statement on Research Integrity. This statement is a short document that include a consensus of fourteen points with beginnings and key aspects that every organization must consider in his policy to promote and to safeguard the research integrity.

54.In addition, in other countries (not in Spain), we find Research Integrity Offices, as public or non profit organizations. This offices usually promote the research integrity practices, and in some cases, have competences to punish the bad behavior.

55.For example: UKRIO in UK, TENK in Finland, NERIN in Netherland, OAWI in Oustria, LARI y Luxembourg, and more...

56.And in the level of Europe we have ENRIO that join national organizations of each country.

57.In Spain we don't have a National Office of Research integrity, but luckily, in ENRIO, at least, we are represented by CSIC. CSIC has the Comité de Ética divided in two: subcomité de ética and subcomité de conflictos that do the rolle of a kind of Research Integrity Office but only for internal cases of CSIC.

58.And apart from this national offices, in other countries we find as well structures worries for the research integrity in every organization. In the book I talk about the University of Cambridge and the Erasmus University Rotterdam. These organizations promote actively the research integrity and put clear how to do in case of misconduct is detected. They have clear protocols for managing the research misconduct.

59. In short:
Scientists are people (with the good and the bad things of the humans beings)
and like the rest of the people, scientists lie.
But the change is possible, with education and a new culture, that we have to build, with and together, the new generation of scientists.

60.I [en'carrich yu] ~~encourage you~~ to read this book and to watch this film, because,
It would be fantastic for the world,
that you spread the good science,
wherever you are,
now and in the future.

VIDEO

And anymore for today. Thank you so much.