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# PEDRO CARRASCO

Pro-Vice-Chancellor for Scientific Policy and Research of the University of Valencia

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## «IT ALL BOILS DOWN TO CHEMISTRY!»

Martí Domínguez

Pedro Carrasco Sorlí is the Pro-Vice-Chancellor for Research at the University of Valencia, a position handed down to him from the current Vice-Chancellor, Professor Esteban Morcillo. Holding a Bachelor in Chemistry, his research has focused largely on the field of biotechnology. Until his appointment to the Chancellery, Pedro Carrasco was the Director of the Central Support Services for Experimental Research at the University of Valencia. With respect to research, he is the head of the Biotechnology Research team working on plant-based polyamides within the Department of Biochemistry and Molecular Biology, where he is tenured Professor. His studies focus on the signalling and response mechanisms of higher plants to environmental stressors.

We interviewed him at the vice-chancellor's office, in the beautiful building rising up over the leafy Blasco Ibáñez avenue crowned by the tower of the ancient astronomical observatory. However, the pro-vice-chancellor's office itself seems fairly neutral and conventional, the somewhat spartan setting broken only by a couple of striking silkscreen prints by Adrià Pina and Ràfols-Casamada. We comment on these artworks and he tells us they are there thanks to Maria Josep Cuenca, Pro-Vice-Chancellor for research a few years ago (who we interviewed in a previous issue). Professor Carrasco is a man of science, immersed in the everyday life of scientific management. The responses he gave in this interview fully convey his enthusiasm for research, and the need to popularize it.

You have taken over the post vacated by the current Pro-Vice-Chancellor of the University of Valencia, Professor Esteban Morcillo...

When Professor Esteban Morcillo was Pro-Vice-Chancellor for Research I held the post of Research

Support Service Director, so for me it seemed quite a natural step, this way I can continue my work in the vice-chancellery, but now as Pro-Vice-Chancellor for research. I was familiar with his way of working and his views on many issues, so I was sure I would fit in well with his team. Currently, the status of our University's research is outstanding, and I shall continue along the path taken by him and also by the previous Pro-Vice-Chancellor, Professor Maria Josep Cuenca.

Do you think we're on the right path towards this «university of excellence» that everyone's talking about?

Well, we are trying! But the very concept of excellence is debatable. Why? Because actually there is no such absolute concept: the university comprises research and teaching, and it is not the same for humanities and social sciences as for basic science. Excellence is a very «slippery» concept. What we have to do is improve all round, we need to encourage strong groups, working from the

bottom up to create a robust research environment so that someday they will take off on their own. To achieve this we must attain a very good average level. In this sense the Campus of Excellence can help and we have increasingly better quality indicators.

In an article published in an earlier issue (MÉTODE 66) you indicated that people equate university with teaching alone. What are we doing wrong?

I think it's a historical issue. Years ago our institution operated as an isolated environment. People went to University College as just another step in their education: they started going to school at three years old and finished when they graduated at twenty three or twenty four... That's why university is commonly seen as a teaching institution, rather

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than as research related. Nowadays, we carry out other tasks such as knowledge-transfer, research... A huge effort must be made to convey that universities are more than just educational centres. In fact, when the students themselves start they aren't thinking of research: actually, they are like high-school students attending lectures just like they used to go to classes at school, and their career choice often relates to the fact they had a good teacher, or sometimes not even that! They blindly carry out the class activities that count towards their marks, and have no enthusiasm for research at all. And I believe our merit lies in turning these students into future researchers. Those who manage to do so, somehow undergo university metamorphosis.



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**«SOCIETY PREFERS TO LIVE IN IGNORANCE»**

Sometimes it can be too late for some students. Perhaps the University should raise greater awareness of this need.

It's like anything else... Now the new degree courses are encouraging this process. Students are used to attending classes/lectures and may not be mature enough to choose a research field early on –but if they do so in the last two years then that's good enough! Getting them keen on research isn't easy. And it isn't easy to investigate or to obtain a fellowship either. We must provide incentives, and we plan to run a programme awarding a grant to the top student in each degree to go on to investigate, the so-called «Attracting Talent Programme». If it works, it will motivate some, and it is a good way to grab the best minds.

In the aforementioned article you also said the University must act in response to the crisis... How? Society needs trained people –training is the answer to the crisis–. Another way is by transferring our research. We are innovative. Two things are central: the training of personnel and the transfer and provision of services to society. The first is traditional; the second is where we should, perhaps, improve. We must improve our relationship with the business sector.

You said that the response to the crisis should not be confined to budgetary issues... Has the crisis affected our research that much?

There has not been a sharp decline in public investment yet. Anyway, the Pro-Vice-Chancellery budget has increased in an endeavour to help maintain groups left without resources. Right now we are designing programmes to cope with a possible future decrease in public funds. We will implement two major programmes: *Gestiona* («manage»), which is recruiting research managers to help researchers carry out their programmes, and *Valoriza* («evaluate»), for concept testing. Sometimes there are research results that could be of interest to a company, and our aim is that a chancellery-run project will assess whether it is viable or not.

You stated that public universities must constantly demonstrate their profitability and strong capacity to generate wealth for society.

Part of society regards us as profitable. The business and healthcare sectors have this perception. However, ordinary people do not: there is a huge gap between a scientific publication and how society sees this publication. That's where the crucial role of the popularization of science fits in. Both the press and scientific communication have a great deal of work ahead. In any event, there is an Anglo-Saxon tradition that sadly is not followed in our country: that of seeing the university as an investment. Here the employer sees the university as a kind of charity, as a source of profits or of services (foundations, grants). It's a different culture, and we certainly lag behind when it comes to business participation in University. We are working towards a single framework within which to promote university-business relationships: we have the Technology Transfer Office, the University-Business Foundation (ADEIT) and the Science Park, but there is not a delegate. We are working to create a single way in. Maybe we are also responsible: I think companies are confused by



us, entrepreneurs often don't know what we offer. They don't know what our research groups do; there is no policy in this respect... And the manifold ways in which companies have access to the university are too dispersed –to the extent it is sometimes counterproductive–. Everyone should know where to go, who to contact, there should be just one single, but wide, way in.

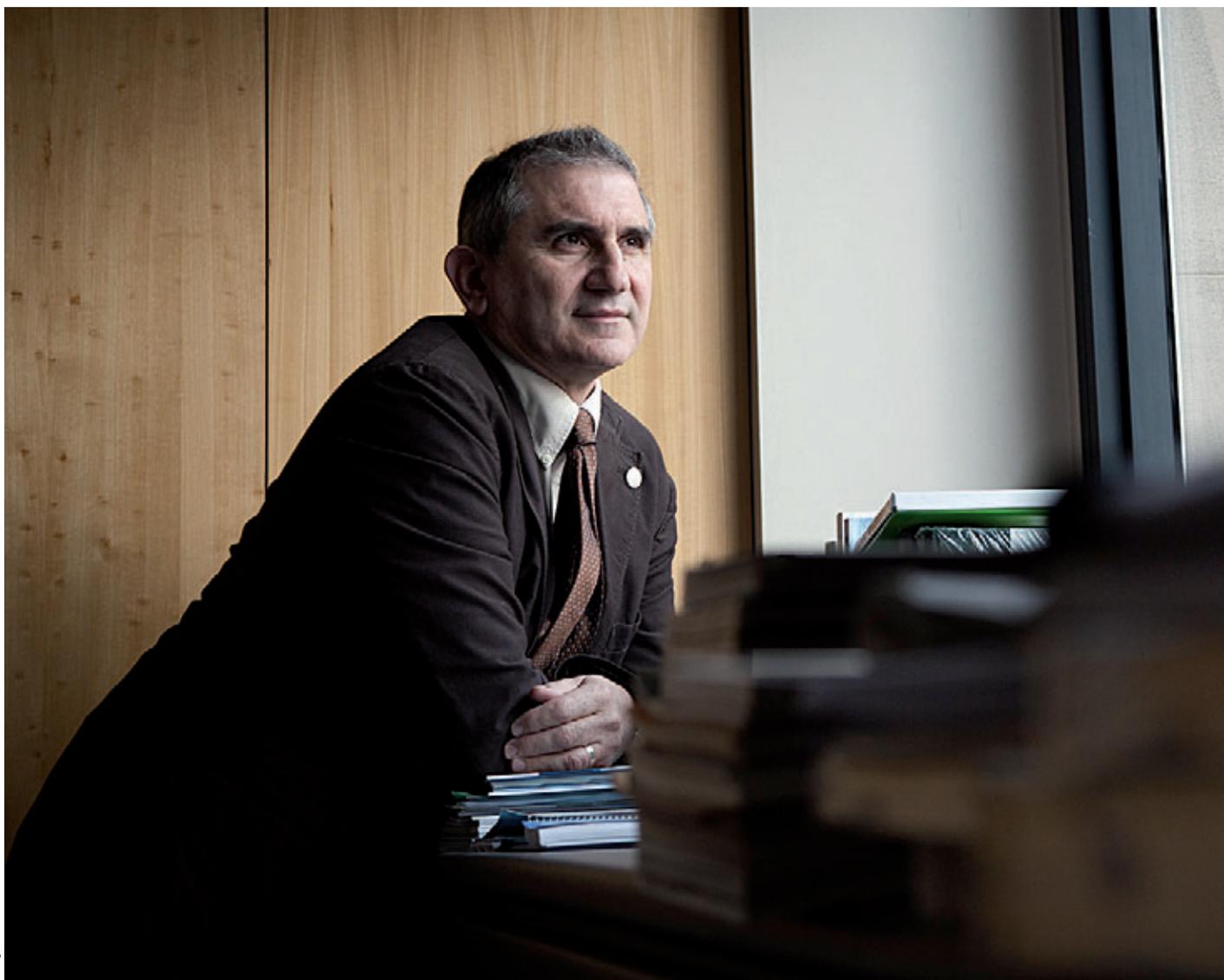
You have written that researchers' efforts must have an impact when they disseminate their results, with rigour and quality. However, don't you think outreach is still underrated?

I don't think it's quite like that. What is valued in a researcher? To publish in high impact journals or in good publications within their field. That's basic. Nobody ever explained to professionals working in science that it would be a good idea to disseminate their research to the general public. It's not underrated, it's just a lack of awareness! Indeed the contrary is true, what is required of them is to achieve

**«TO UNDERSTAND LIFE, CHEMISTRY IS  
FUNDAMENTAL. CHEMISTRY CAN EXPLAIN  
ANY PROCESS!»**

impact with their publications, and in actual fact popular dissemination is unnecessary. And so it's not even considered! So it's not a lack of appreciation, it is simple unawareness... they don't think of it because they don't need it. Furthermore, many researchers are not mentally prepared to popularize their research. I find it really hard to explain what my research is about simply, in a way that's accessible to a wider public. Perhaps, it would be interesting to have an outreach structure to help researchers. Each campus could have a press office, for instance, a group of specialists, paying special attention to the research carried out and working closely with scientists.

Perhaps it is not a question of underrating, but popularization carries very little weight in a *curriculum vitae*. Some people even hide it, because sometimes it is even counterproductive. On requesting a six-year productivity bonus evaluation, for example, popular dissemination may even be an obstacle. Isn't this all rather contradictory?



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The system is full of contradictions... Nowadays only *papers* are valued, *i.e.*, high impact SCI journal publications. And I don't think that's right: both transfer and, of course, outreach should be valued. Probably, we'll have to raise researchers' awareness of the importance of this kind of dissemination. We'll have to find some kind of compensation in return. We must find an incentive that is practical. I'm convinced about this: each campus should have at least one press office. And I think it will!

2011 is the Year of Chemistry. What activities are planned to celebrate the event?

The School of Chemistry is running a series of conferences, as well as a film festival. We are also holding an audiovisual competition open to university

and high school students, in collaboration with Valencia's City of Arts and Science. Prizes will be awarded during the biennial meeting of the *Real Sociedad Española de Química* (Spanish Royal Society of Chemistry) to be held in Valencia this year, sponsored by the University of Valencia and the UPV (*Universidad Politécnica de Valencia*). We're also running an interesting exhibition entitled «Revolution in Chemistry» at the López Piñero Institute for the History of Medicine and Science housed in the beautiful palace building *Palau Cerveró*. These exhibits will be complemented by another with a greater focus on the public perception of chemistry, held at *La Nau*, but which we would also like to be a travelling exhibition. I think ultimately that would be great.



«I'M NOT GOING TO TELL YOU WHAT  
I THINK OF MIRACLES BECAUSE  
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As a biochemist yourself, no doubt you take a special interest.

I am a chemist –I hold a Bachelor's Degree in Chemistry–. I would like the Year of Chemistry to provide the opportunity to show the history of this subject at our university, and the new research fields that range from nanotechnology to materials science and biochemistry... To me everything is chemistry! [He laughs.] Sure just think about it. Chemistry shows us the underpinnings of how reactions work in both materials and living beings, it provides insight at the structural and molecular level. To understand life, chemistry is fundamental. Chemistry can explain any process! Like thermodynamics, which can also explain any process, even in living beings.

What is the public's vision of chemistry?

Well, to make detergents, paints, cosmetics... [He laughs.] For everyday things. I think the Year of Chemistry provides the opportunity to show society how chemistry is important in the relationship between molecules and life. In fact, everything boils down to chemistry and physics!

Do you think society perceives science as something good? I mean, is there a negative perception of scientists as people who devote their time to research that may be dangerous?

[He is thoughtful.] They don't see it as bad... Society is overwhelmed by certain breakthroughs, but it isn't a regular concept. People don't realise that science affects their everyday lives, they don't fully appreciate the comforts it provides in the home, they don't recognize it's affecting them at all times... There is a lack of awareness, of proper understanding... Besides, biotechnology has aroused many suspicions, there have been very strong campaigns against genetic engineering or cloning, which have done a lot of damage. The same kind of thing happened with nuclear power, which then experienced a period of tolerance. I believe something similar will happen with biotechnology.

A couple of years ago, I wound up my interview with Professor Esteban Morcillo with a quote from Diderot. «One may demand of me that I should seek truth, but not that I should find it.» Do you think society wants to know the truth?

Society prefers to live in ignorance... People just want results, to maintain their standard of living, to enjoy life, even ignoring the collateral effects. If they knew these risks, if you explained everything to society, people certainly wouldn't accept it. Which, incidentally, is what politicians do! Don't write that down, ok!

Why not?

Ah, because maybe... Look, there's still strong public reticence to accept scientific knowledge. Galileo is still a milestone that has not been fully acknowledged. Not to mention Darwin! Society must free itself of superstition, and take a more positive view of reality!

What do you think about Pope Wojtyla's miracles?

Ah, don't get me started! I'm not going to tell you what I think of miracles because you'll write it down!

You bet I will! ☺

**Martí Domínguez.** Editor-in-chief of MÉTODE.