FWO Annual 2013
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Double interviews

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Dear reader,

With its annual 2013 the Research Foundation – Flanders would like to give you an overview of the past year. 2013 was a festive year – it marked the 85th anniversary of the launch of the Research Foundation – Flanders. The highlight was 17 December, when we celebrated this milestone with the event Kennismakers, Al 85 jaar Zuurstof voor Onderzoek & Ontwikkeling. It was a huge party by researchers for researchers, attended by His Majesty, the King of Belgium, and Professor François Englert, a Nobel Prize winner.

1,200 people attended the successful event, which welcomed over 100 national and international guest speakers. The day ended with the Belgian premiere of Icarus at the Edge of Time, performed by the Leuven University Symphony Orchestra with Michael Pas as Icarus.

This terrific party was a great way to end another busy year. As was the case in previous years, the number of applications for fellowships and research projects increased in 2013. The main consequence was that the Research Foundation – Flanders once again saw itself forced to offer fewer grants to researchers.

These lower chances of success are one of the elements that increase the pressure on researchers. Another problem that was the subject of a heated debate last year was the increasing publication pressure, which is not an independent phenomenon. It is a complex issue that should be considered as a whole and from different points of view.

In this annual the Research Foundation – Flanders interviewed two members of De Jonge Academie (The Young Academy), a think tank of some forty young, passionate researchers who take a critical look at the role of the university of the future. Tina Kyndt and Violet Soen share the view of De Jonge Academie.

Science philosopher Jean Paul Van Bendegem and biomedical expert Anne-Marie Van Der Linden also take a closer look at this far-reaching phenomenon.

Last but not least, Elisabeth Monard and I give you an insider’s look at the main financing channel in Flanders for fundamental research and what goes on behind the scenes.

Enjoy reading this interesting annual!

Professor Anne De Paepe
President of the Research Foundation – Flanders, Rector at Ghent University
Publication pressure, just the tip of the iceberg?

The European Commission’s two-yearly innovation report for 2011-2013 does not beat around the bush: this time, Flanders is sliding down the European innovation ladder. There’s one positive point though: Belgium – Flanders accounts for 70% – scores well in international scientific publications, both in terms of quantity and quality, with an increase of 5.8%. But in terms of the number of PhDs earned, Belgium scored well below the European average in 2011. To be precise, we achieved 88% of the average, despite a 4.5% increase in the number of PhDs earned. The countries we like to compare ourselves to all rank well above that average – Denmark: 135%, Finland: 159%, Germany: 165%, Sweden: 171% and Switzerland: 182%.

These past few months, the press widely reported the dissatisfaction of a group of activists who denounce the pressure on young researchers to constantly increase their publication output – the so-called “publication pressure”. But how should we interpret it? The figures in the European report suggest a balanced interpretation. To earn a reputation as a good scientist, you must of course have a high and qualitative publication output, preferably as the lead author. That gives you a very small chance of remaining at your alma mater. Because at the end of the day, only one in thirteen PhD holders in Flanders can look forward to an academic career. Where do those other 12 end up? Aren’t we confusing publication pressure with career pressure? Is the concept of “publication pressure” that the press likes to write about just the tip of the iceberg? An iceberg that, under the surface, hides a complex problem of a system that urgently needs to be reviewed to meet the needs and challenges of modern society?
Koenraad Debackere
KU Leuven
promotor-spokesman ECOOM
The Flemish government has outlined a development strategy, that’s true. By 2024 there will be an additional 600 or so professors for the integrated courses at university colleges. Universities will have an additional 400. That amounts to a 16% increase of the overall staff. Not really a dispensable luxury if we want to continue to provide adequate support to the growing number of motivated PhD students. Because after all, that’s what we want: more PhDs. Or do we? Wouldn’t it be great if we managed to at least surpass the European average? But is that enough? A capacity increase of 20% would be needed to truly make a difference, according to experts. And even so, more things need to change. New PhD holders must be given better access to the labour market. Are universities sufficiently equipped to prepare their highly educated students for what’s to come? And is the labour market, in this case businesses, ready to embrace their added value?

In its Memorandum 2014 the Research Foundation – Flanders calculated that an additional 95 million euro is required for the next legislature. That amounts to 19 million euro per year for PhD projects and mandates. If the government were to provide these funds without increasing the number of staff, PhD holders in Flanders would find themselves stuck in a rut. And we’d continue to look up to Denmark, Finland, Germany, Sweden and Switzerland from the lower end of the ranking.
Publication pressure refers to a complex combination of factors that young researchers find very tough. And the media are only too happy to fan the flames.
Anne De Paepe, President of the Research Foundation – Flanders, and Elisabeth Monard, Secretary-General, fully agree that publication pressure is only one aspect of a far more complex issue. Publication pressure is linked to the developments in science and society, the changing face of scientific research, the decision of young researchers to strike a better balance between their work and their private life, the realisation that research is essential to promote welfare and a good quality of life in any region, and the political commitment to provide the necessary resources to achieve all of this. According to De Paepe and Monard, publication pressure reflects an entire culture in which Flemish researchers need to compete with the international scientific community.
De Paepe Professors and researchers are under growing pressure to increase their scientific output. Why? Because that output is one of the parameters, upon which the current financing model for research is built. In Flanders (fundamental) research is financed through a set budget, which results in competition between universities. The latter are under great pressure – they must excel in terms of research, have a high publication output and provide education and services. Moreover, the number of students and PhD students has grown drastically in the past few years, but financing and staff have not increased proportionately. This heavier workload needs to be borne by a faculty of researchers and professors that has remained unchanged for years.

“Many researchers feel they’ve been sidelined. The only way to solve this, would be to make more resources available.”

Anne De Paepe

Monard Flanders started focusing strongly on research in the early nineties. Financing increased exponentially. In the framework of the European Research Area, the European Commission called for the influx of young researchers to be increased, and the Research Foundation – Flanders made this one of its priorities. On top of that, universities also launched incentives to increase the number of PhDs, which almost tripled every year in one decade – rising from 600 to 1,700. Is that figure too high? No, I don’t think so. Compared to countries like the Netherlands and Germany, I don’t believe we have too many PhDs. More opportunities were also created for postdocs. Through the Research Foundation – Flanders, they can obtain two three-year mandates. Universities launched the so-called “Special Research Fund” mandates (BOF in Dutch) and tenure tracks. The problem is a lack of resources to allow all of these researchers to carry out their work with the freedom they need. And that creates tension.

M The Research Foundation – Flanders has deliberately chosen to focus on quality in research. The assessments are not just based on the number of publications and citations. Impact factors are only an indication of the quality of the journal and the published reports. Each and every case is considered as a whole. All aspects are discussed and analysed. What does the research mean? Is it an innovative project? Does it really come up with new ideas? Was a well-developed methodology used? Is there a sound theoretical basis? Is it feasible? The Expertpanels are made up of other scientists – mainly European, but also American, Australian etc. They assess each case from an expert point of view. The panel members are screened for their scientific qualities. They are the very best. Being a member of an Expertpanel is hard work, but it is also a very useful experience. I remember once we invited a professor from the Sorbonne to be part of an Expertpanel in the field of Humanities. We had quite a few cases to assess. The panel meeting started at 9 a.m. and lasted about twelve hours. When we were done, he came to thank us because he had had such an incredibly interesting day.

DP I was a member of several Expertpanels and I completely agree. Being part of an Expertpanel is a truly enriching experience, but since there are so many cases to be assessed, the Expertpanels are under great pressure. You don’t have much scope to provide financial support to good projects. And that can negatively affect the assessment process. If you don’t have the time to thoroughly assess each case and you need to divide the work to meet deadlines, the discussions and dynamics of each panel are also influenced. In these cases an expert’s individual opinion and preference prevails. And researchers are more aware of this subjectiveness than was the case in the past. Does this mean that the experts are not doing a good job? Not at all. It just means they have a heavier workload, and their approach is a reflection of that.
When assessing three candidates of the same level only one of them will receive funding. The other two are left behind, frustrated.

**M** In that case, the candidates’ publication output may play a role. In business there is also competition between colleagues. If you want to be promoted, you need to prove that you’re better than your colleagues in many fields. However, if you’ve got a long list of publications to show, but your project does not meet the quality criteria, you won’t make it. That too is frustrating.

“In order to continue to compete at European and international level, the Research Foundation – Flanders would need an additional 19 million a year for the next five years.”

Elisabeth Monard

**DP** In such cases, the experts’ personal assessment can also have an influence of course. That doesn’t make the assessment less objective, but you can never have an Expertpanel without an ounce of subjectiveness.

Research is becoming increasingly interdisciplinary, isn’t that an added difficulty in the assessments?

**M** Dirk Inzé, a prominent molecular biologist and President of the Scientific Committee for Life Sciences of Science Europe, says that in the past few years, research in his field has become very interdisciplinary. He’s not the only one who thinks so. Researchers from various fields are joining forces to work on one and the same research project. If this collaboration results in a publication, all authors should be named. Usually there is no issue with the first and the last name. But where are you going to mention a person who has made a significant contribution to the research but is not the lead researcher or supervisor?

**DP** That’s an important evolution. So far, the focus was on the first and the last name in the list of authors. Now that research teams are becoming bigger, more co-authors are stepping onto the scene because of the increased complexity of the research fields. In that case, you can’t state that the article was written only by the first author and slightly adapted by the subsequent names in the list. So how do you assess something like that?

Wouldn’t it be an idea to add a separate textbox detailing the actual contribution of each participating researcher?

**DP** Some journals do this, but even so, how can you check? It will always be subjective. That’s why quantitative assessments are criticised. Of course quantity is not the quintessential criterion. But you can’t go the other extreme either and not consider the publication output at all. The type of journals you publish your work in, their reach, the number of publications… all these factors reflect your value as a researcher. That output needs to be taken into account. Yet it can’t be the overpowering criterion. You should also assess aspects that are linked to the non-quantitative side of quality.

De Jonge Academie argues in favour of a face-to-face meeting with the Expertpanel. Wouldn’t that be a solution?

**M** The number of applications increases every year. To date, we’ve got more than two thousand candidates. It is simply not feasible to have an assessment discussion or feedback session with each and every one of them. However, the Research Foundation – Flanders is considering adapting the process. We’re not yet sure how, though. We’ve already taken similar steps in the Interdisciplinary Expertpanel and the Odysseus Jury, with positive results. But a discussion or feedback session is not a guarantee for success. You also need to make sure that good speakers are not favoured. The case file remains the basis. I do want to stress that the Research Foundation – Flanders has always had a very open and accessible attitude towards researchers. They can always contact us, ask questions and feedback. Another asset of our organisation is the quick processing time. Requests made by 1 February are approved or rejected by June. Compared to other European organisations, that is very fast. Nevertheless, researchers often complain it takes too long. We need...
to find a good balance. But the system as it stands today still selects very good candidates. Of all our selected candidates, 85% obtain their PhD – the highest number in Flanders. That means our system does work.

**How does the assessment model of the Research Foundation – Flanders compare to that of other countries?**

**M** We take part in several European fora to find out how other countries deal with assessing publications and projects. Moreover, our staff prepares the content of each case. We have an informal working group of vice-rectors of Research Policy that meets once a month. And we also have the Board and the Board of Trustees. Whenever an Expertpanel has met, we make an assessment. What happened? How did people respond? We try to make all the necessary amendments. We have to try to do this as long as possible. Abroad a first selection is usually made based on bibliometric data. Experts of the Research Foundation – Flanders who take part in assessment rounds abroad often return with a negative view of the procedures they’ve witnessed. Personally, I am also against a mechanistical model. I simply don’t believe in it. But if the number of applications continues to increase, who knows, maybe we will need to shift to that type of assessment too.

**DP** That would be ideal. There are so many great applications that we cannot support because of a lack of funds. Consequently, many researchers feel they’ve been sidelined. The only way to solve this would be to make more resources available, not only for the Research Foundation – Flanders, but also for the Special Research Funds (BOF) of the universities. We must continue to support the fundamental research financed by the Research Foundation – Flanders. It is the basis of all other research. If you no longer have fundamental research, then applied research will also be negatively affected.

**DP** At the end of the day, what really counts? That Flanders can compete with the international scientific community. The government needs to understand this. More research is being conducted in Flanders than ever before. To further encourage this, we need more money. This is both the responsibility and the task of the government.

“**At the end of the day, what really counts? That Flanders can compete with the international scientific community.**”

Anne De Paepe

**M** In this view, I would like to highlight a wrong perception. The focus is too easily placed on the link with the economy. Of course universities and research are important for economic growth, but there’s so much more to it. Think of the development of Flanders as a region, in terms of culture, education, training of youth, social development, health care, liveability, sustainability etc. It’s all connected. This year, the renowned British epidemiologist Sir Michael Marmot received an honorary degree from the University of Leuven. During his acceptance speech, he said that in Glasgow there is a gap in life expectancy of 28 years between the poorest and the richest neighbourhoods of the Scottish city. The poorest inhabitants have a life expectancy of 45 years! In Belgium, this gap amounts to 18 years. That’s enormous. Good scientific research in many different fields is required to close that gap. It’s really necessary.
In its memorandum for 2014 the Research Foundation – Flanders argues in favour of increasing the number of doctoral and postdoctoral fellowships with 33% by 2018. That is a yearly increase of 150 mandates. Where do all these people go? Only one in thirteen PhD holders can build a career at a university.

**DP** That’s another aspect of the publication pressure issue. A PhD no longer necessarily is the key to an academic career because there are too many PhD holders. On the other hand, we need to change the mentality about the value of a PhD. Researchers as well as the labour market should recognise the added value of a PhD. Naturally, a PhD student achieves a thorough knowledge of a specific topic, but obtaining a PhD involves so much more than that. It also guarantees a more intense training and skills that extend well beyond one’s field of expertise, such as summarising, intense brainstorming, discussion, collaboration, evaluation, communication etc. These additional competences are an asset for one’s future career. It’s becoming a more important target for PhD students, whose value on the labour market is definitely greater. And the industry, large institutions and other major players on the labour market are now also attaching greater importance to this aspect.

This gave rise to the establishment of doctoral schools. How do you, as a rector, feel about these?

**DP** These doctoral schools focus on this broader training. Many interesting incentives have been incorporated into the programmes, such as teaching transferable skills. The promotion of contacts with the labour market is also an asset. In this framework, students can ask for an external mentor to support them during their training, for example someone who works in business or in a management position for a large institution. Both parties stand to benefit from this. Business has easier access to potential employees and vice versa. Such initiatives are now gaining ground.

**M** I would like to add that companies are interested in the research that is conducted in their field. The scientific awards sponsored by companies are proof of this. The Technical Sciences course at the Royal Flemish Academy of Belgium for Science and the Arts is attended by many managers. They want to find out more about academia and ongoing scientific research. Unfortunately not all departments or managers within a company are aware of the added value of a PhD. This especially applies to HR departments in charge of recruitment. We should tackle this issue.

**DP** It is our responsibility to set up programmes to improve interaction with the labour market. Business also needs people with the right vision. According to the field in question, this can take on a different form. We need to raise awareness. Currently a programme called Jonge Ondernemers (Young Entrepreneurs) is underway at Ghent University. PhD students with innovative ideas receive two years of financial support from the university to put their ideas into practice. This resource pool can serve as a basis for the foundation of new companies or the training of good managers. We have also noticed that more and more companies are settling near research centres, which has had a very positive effect.

“The assessments are not just based on the number of publications and citations. Each and every case is considered as a whole.”

**Elisabeth Monard**

**M** Postdoctoral fellows of the Research Foundation – Flanders can devote 20% of their time to setting up a company. We launched this measure specifically for this purpose. Several postdocs have already jumped on the bandwagon.

**DP** Mobility grants for PhD students and postdocs are also an interesting support measure. These grants allow them to acquire expertise elsewhere, for example in another lab, research group or company. That is considered an asset in their training and increases their market value.
DP This disappointment prevails in the alpha sciences. And it makes sense. Publication pressure is not the same in all disciplines. In the beta sciences it’s less pronounced. This is also due to different publication procedures in the various research fields. In medicine or biotechnology many publications have several authors because in those fields, research is teamwork and every researcher has a specific position in the list of authors. In many alpha sciences there are fewer opportunities for teamwork due to the nature of the subject matter. An example: a philosopher or an ethicist needs to acquire a certain level of maturity before he or she can formulate a well-though-out opinion. Time, research and serendipity are important in this process. This dynamic differs completely from that in the exact sciences. We do take this into account, for example by using different bibliometric measurements.

M Indeed, the media are only too happy to fan the flames. But let me clarify this. Not all researchers feel that publication pressure impinges upon their autonomy. Recent figures show that the publication output per researcher has decreased compared to the past. The media often link publication pressure to fraud. They make it sound as if fraudsters are the victims rather than the culprits. How do you feel about that?

DP That’s wrong. Nothing justifies a dishonest way of working. As a researcher and an academic you have your own deontological code, which must be respected at all times. Researchers know only too well what they are allowed to do and what the limits are. As a scientist, your integrity must prevail. Fraud is not linked to publication pressure, it’s a personal choice.

M It’s true that the media try to link the two. But there is no link. What’s more, fraud is quite rare. It seldom happens. Having to work hard does not justify fraud. However, the larger the group, the greater the chance of deceit happening. Both universities and the Research Foundation – Flanders are very well aware of that. We’re very alert to it. Raising awareness is important here too.

What about the current trend to strike a better balance between work and private life? Doesn’t that play its part too?

DP Definitely. Compared to their older counterparts, young researchers have a different view on quality of life; their quality time takes on a different meaning. We see this trend in all fields and in all areas of expertise. Young doctors at university hospitals, for example, don’t work the same number of hours as their older colleagues. Moreover, among the younger generation, we see many more double-income households. So when can you work on your PhD? In the evening or at the weekend? Society has changed. Many of my male colleagues were lucky in the sense that their wives didn’t work. Today, this is no longer the case.

M Publication pressure is a complex combination of factors. The result is that young researchers experience this pressure and their workload as tough. They do indeed work harder than many of their peers in other sectors. But let’s not forget that research is their passion. That’s what keeps many young researchers going.
Jean Paul Van Bendegem
VUB
Science philosopher
Anne-Marie
Van Der Linden
UAntwerpen
Biomedical expert
Publication pressure is linked to the entire research framework: university policies, financing, future expectations and assessment criteria.
The world of academics is undergoing radical changes. New types of management and financing, as well as different goals are affecting current research approaches. Scientific and technological innovation has become the driving force behind the knowledge economy. Today, research is increasingly streamlined by external R&D programmes, non-academic sponsors and the value capture of patents and spin-offs. And let's not forget the increasing importance of quantitative criteria for scientific excellence. All of this has a downside. Research and researchers are faced with greater demands than ever before. And that brings along enormous pressure. How can we strike a feasible balance between these factors? Science philosopher Jean Paul Van Bendegem (VUB) and biomedical expert Anne-Marie Van Der Linden (UAntwerpen) share their take on the issue.
“Science needs time”, says the Slow Science Movement, “Time to think. Time to read. Time to fail. Science doesn’t always know whether something is true or not. Science evolves through trial and error. With capricious movements and unpredictable leaps forward. But at the same time, science is steadily working its way up a very slow time scale”. Do you agree, Jean Paul Van Bendegem?

Van Bendegem The Slow Science Movement touches a sore spot. Everything is done so incredibly fast. It’s all a rat race. In today’s knowledge economy, the bottom line is the need for results. And preferably as quickly as possible, to outdo the competition. Scientists should be given the time they need to deliver high-quality work. Take Higgs, for example, who discovered the Higgs particle. For years, he received funding to play with the idea of that one little, ultimate particle. What about his list of publications? It was very, very limited! Today, that would hardly be possible. The research topic I focused on thirty years ago wouldn’t have a chance of making it through the selection process. A person brainstorming about fundamental issues on his own is no longer an option. Collaboration and interdisciplinarity score well when it comes to research financing. Moreover, the Slow Science Movement also encourages more time to focus on the long-lost dialogue between the humanities and natural sciences.

Van Der Linden The criteria are indeed sometimes different from those used in the humanities and social sciences. In medical imaging, my field of expertise, and in many other research fields in the exact sciences, collaboration – often on an international level – is the rule rather than the exception. Your peers are also international scientists and you’re faced with international competitors. That’s why I consider scientific research one of the most globalising activities ever.
lawyers, linguists and others – screen lists of journals to find out which articles were reviewed by international peers. This is all “volunteer work”. The launch and recognition of the database were an important step forward. Meanwhile, VABB-SHW has become a database that all alpha scientists can identify with. Consequently, the humanities and social sciences have more weight in the distribution of funds as part of the new Special Research Fund agreement (“BOF” in Dutch).

On the other hand, researchers specialised in the humanities and social sciences tend to publish more books for a wider audience in a more accessible language.

VB Even I sometimes publish books for a wider audience. I don’t mind that those publications don’t count from an academic point of view. However, I do argue in favour of such publications being considered a contribution or service to society. The assessment of the Research Foundation – Flanders takes them into account. That’s a positive step. So not only economic value, but social value too is increasingly being considered. We should, nevertheless, take a careful look at what this concept truly entails. For example, are lectures for a wider audience or citations in the press considered? In an ideal world, the VABB-SHW database wouldn’t even be necessary.

How do you feel about the current commotion about publication pressure?

VDL I think what mainly caused a stir is the framework in which research results are published nowadays and the pressure associated with it. I’m quite sure that everyone agrees about the essence and importance of publications. Society invests in research and at some point, something tangible should be presented to the community. It is logical that research results are made public after having been assessed by peers, meaning that they are published. That’s why it makes sense that organisations financing research, like the Research Foundation – Flanders, expect that their beneficiaries publish their research results. Because if something is not published, it doesn’t exist for the outside world. It is also logical that competitors target precisely that factor. Not only in terms of quantity, but also of quality. Publishing one’s work in a peer-reviewed scientific article is also a necessary step in the research process. It is essential that you take a critical look at the various phases of your research. In other words, it’s very important for PhD students and postdocs to hold dear the principles of quality and critical thinking. That requires attention and time from their supervisors. After all, scientific progress is the result of the small steps taken by thousands of scientists all over the world, day in, day out, and the publications that result from their efforts.

“That tension between financing and publishing policies is the key problem.”
Anne-Marie Van Der Linden

Universities receive funds based on the number of publications in top journals. Which standard does the new Special Research Fund (“BOF”) agreement apply?

VDL In order to eliminate the distinction between the various publication approaches and categories of the different scientific disciplines, the new Special Research Fund (“BOF”) agreement has agreed to give high-quality publications in all fields the same weight and the same weight decrease. The latter is quite pronounced and based on the impact factor of the journals in that specific field. Consequently, the focus is now more on quality than on quantity.

VB That standardisation was an important step. Every discipline is now given the right weight. It is mainly publications in the top 20% journals of each field that contribute to obtaining public funds. Publications in these journals are awarded ten points each. If you publish your work in a journal that is not in that top 20%, then the points awarded drop significantly. In a nutshell, publications in journals with lower visibility are awarded fewer points. That does, of course, increase the pressure on researchers, because universities like their researchers to publish their work in journals with a high impact factor, and they encourage them to do so.

VDL That tension between financing and publishing policies is the key problem, and
it goes far beyond the Special Research Fund (“BOF”) financing. Why? Because the guidelines for this financing are also used for the allocation of other public research funds - directly (Odysseus, Methusalem, IUAP) and indirectly (Hercules). They are even largely used for the allocation of research grants within the universities’ operating grants. Consequently, publication output is directly linked to financing via Special Research Fund (“BOF”) resources and university funds. Those resources go mainly to research projects in which PhD students take care of the publications, and they are also used to pay the salaries of professors conducting research.

What about lecturers with tenure track status?

VDL It is precisely that status that is being reviewed now. Only the best researchers qualify for tenure track status. They must generate publications, attract PhD students and deliver PhDs. The quantity and quality of their output is agreed upon in advance. If they reach their quota, they can look forward to obtaining tenure status after five years and being promoted to the level of Senior Academic Staff for Special Research Funds (“BOF”). In order to stay, you have to write! This approach has a downside. You run the risk of building a university community of very competitive researchers, their sole goal being to reach the quota agreed upon in their contracts. The focus on new appointments – not only in the framework of Special Research Funds (“BOF”) – is therefore more and more on increasing one’s publication output. As a result, less attention is paid to supporting research, researchers and education in general, because it does not directly ‘yield’. Scientific research is therefore undermined, and we’re losing track of its essential goal. Meanwhile, the number of students at our universities has doubled. That, in turn, makes them less attractive for new researchers from other European countries.

Where would you have liked to see changes?

VB The new Special Research Fund (“BOF”) agreement for the distribution of research grants among universities came into force last year. From a technical point of view, it’s a very complex and accurate document. But in terms of innovation on a structural level when it comes to financing and resource allocation, I think we’ve once again missed the boat. The new Special Research Fund (“BOF”) agreement simply set the existing system in stone. And fundamentally it’s still a system based on the philosophy that the winner takes it all. I keep objecting to this. I believe that a few amendments here and there can’t be considered real change.

“By focusing on generating publications, less attention is paid to supporting research, researchers and education in general, because it does not directly yield”.

Anne-Marie Van Der Linden

VDL The problem extends far beyond Special Research Fund (“BOF”) financing. At the end of the day, they only represent one eighth of the universities’ operating budget. The real problem is the climate this financing model has created. We’ve now reached a point where we’re all increasing our academic output, but we’re only partly rewarded (compensated) for it if our growth exceeds the Flemish average. That doesn’t only apply to Special Research Fund (“BOF”) resources, but also to operating resources. Things would be different if the universities effectively allocated their resources to a sustainable research policy. That would, in the end, have a positive effect on the publication output. The other model is slowly burning out. A well-balanced academic team is the sustainable key to good PhDs, postdocs and publications. In such a team, research and education are optimally linked; it sets an example and it is a source of motivation for young tenure tracks.

Which profiles are required to create optimally functioning teams?

VDL I think that financing top researchers and their projects should continue to be the main task of both the Research Foundation – Flanders and the Special Research Funds (“BOF”). Universities’ main task, on the other
hand, should be to develop an operational framework for qualitative research in which researchers can thrive and carry out fruitful work. I am a proponent of introducing a level between the Senior Academic Staff and PhD students to provide support and monitor quality. This level would offer technical support and expertise, and have the necessary knowledge to train PhD students on a day-to-day basis and support the training process. When I was working on my PhD there were still different statutes, namely that of “research leader”, “first assistant” and “senior research assistant”, all boasting years of experience and great expertise. Experts. That mid-level of tenured staff was abolished because it “weighed” on the system and “didn’t yield anything”. At least, that’s what they probably thought at the time. The current financing model does not allow for a similar staff set-up. Yet more staff is needed to guarantee the efficiency and quality control of research. At times I think that universities’ research funds should be used exclusively to co-finance external research resources obtained in a competitive manner (Research Foundation – Flanders, Agency for Innovation by Science and Technology, EU, funds from industry etc.). That way, salaries would be performance-related, and you would both stimulate and support research activities. Not the mid-level positions I mentioned earlier, which weigh on the system, but a financing model that immediately gives researchers the opportunity to ensure continuity in their research and to rely on experts. This would allow researchers to think and plan for the long term too. But that would probably also have a downside.

VB I agree. Since we don’t have that mid-level anymore, we’re working with a lower tier of researchers on temporary contracts who need to deliver. When they suffer a burn-out, they’re replaced with new researchers. It’s as simple as that. Sooner or later, this will hit us like a boomerang.”

VDL Burn-outs are common among both young and senior researchers. That says it all. I have the impression that young researchers, especially those in Europe, prefer to work as postdocs in several locations for a few years, rather than “fit into the box” of tenure track statutes. The framework created by the new Special Research Fund (“BOF”) policy and the closed financing system basically forces senior professors to take on all the additional tasks too. And if you add the obligatory 2/3 gender balance to the equation, there isn’t much left to rejoice about, especially for female Senior Academic Staff, which are few and far between.

According to De Jonge Academie (The Young Academy) today’s researchers must be not only top researchers, but also good lecturers, communicators, service providers and fundraisers.

VB There is something fundamentally wrong with the assessment of Senior Academic Staff. Researchers are now expected to perform at three levels: research, education and service provision. I fully agree with the idea that research should become more focused on collaboration and interdisciplinarity, also in the humanities and social sciences. But instead of saddling every individual researcher with these three tasks, they should be distributed over entire research teams. I know many researchers who are brilliant at one particular level, but not at all three.

VDL I completely agree. That’s why these three levels should be embedded in larger teams or clusters of research groups that collaborate. You need to ensure that your research team can bring together the necessary expertise. It’s a bit like a football team. As an individual, you cannot be great at “everything”. I try to adopt this approach in my team, which must be made up of highly critical individuals. So ideally, you’d work with larger teams for optimal research, education and service. It is the universities’ task to support these productive teams in

“The new Special Research Fund (“BOF”) agreement simply set the existing system in stone. And fundamentally it’s still a system based on the philosophy that the winner takes it all.”
Jean Paul Van Bendegem

According to De Jonge Academie (The Young Academy) today’s researchers must be not only top researchers, but also good lecturers, communicators, service providers and fundraisers.
which all members efficiently join forces. This immediately creates the necessary “added value” to attract international top researchers. In a nutshell, that’s internationalisation.

**VB** However, you need to respect and support the specific nature of every discipline. That means you need to take into account the type of network in which your research is carried out. In the exact sciences these networks are generally a number of large clusters surrounded by smaller units. But in the humanities and social sciences, networks are usually very fragmented, with smaller research teams that are often active worldwide. My research team is made up of about seven researchers specialised in philosophy of science and philosophy of mathematics. Depending on the research topic, we work with similar teams in England, the United States and Australia. And it works: It’s pretty typical for research in the humanities and social sciences.

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**“Instead of saddling every individual researcher with research, education and service provision, the three tasks should be distributed over entire research teams.”**

Jean Paul Van Bendegem

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**VDL** Of course, because you’re working at full speed and everyone joins forces, so things get done quicker than in teams where every researcher aims to reach his quota. A well-oiled team is an efficient one. The researchers have a balanced workload. If a team works well, you can divide tasks. One plus one equals three and all the pieces fall into place. But you need to have the necessary resources. Unlike the humanities and social sciences, the exact sciences can count on a fourth funding channel, namely companies. In our field, Biomedical Sciences, we test the compatibility of both the educational and the research programmes with the business field. Because after all, that’s where our researchers end up once they’ve graduated. At some point, businesses start funding your research. It happens automatically. The boundaries between fundamental and applied research are often very blurred.

**We’re currently faced with an economic crisis, so every euro counts. The result is fine-tuning, with ROI taking centre stage. Your research must yield results at all costs. Is fundamental research paying the price?**

**VDL** Science, whether applied or fundamental, targeted or non-targeted, starts with thorough brainstorming on your research question and the methods needed to answer it correctly. More and more financing channels – apart from the Research Foundation – Flanders and the Special Research Funds (“BOF”) – now stipulate which type of partner is required for each research field. This patronising stance creates the risk of premature screenings and skipping fundamental research because that step is not financed. It can take years to get to the bottom of how an illness works and to find an efficient treatment for it. Skipping that step makes all those expensive, early screenings completely useless. Here too we need researchers to play a critical role. It is becoming increasingly difficult to increase the resources for free research, which has resulted in a sharp drop in the success rate of highly competitive channels, both at the Research Foundation – Flanders and the Special Research Funds (“BOF”). Sometimes below 20% even. And that, in turn, increases the pressure to generate more publications in order to stay ahead of the competition.

**VB** Fundamental research remains essential. The Research Foundation – Flanders continues to highlight this, and rightly so. The research landscape has indeed undergone drastic changes in recent years, the social challenges are enormous and researchers are under great pressure to perform. I am a proponent of maintaining fundamental research, but my reasons are different from those of, say, twenty years ago. At the time, my arguments were not the same as today’s. Now, I feel fundamental research needs to be saved. That’s why the Research Foundation – Flanders is so important. That’s why it should remain independent. It should not
be taken over by industry, the government or universities. That is crucial, not only for fundamental research in the exact sciences, but also and mainly for research in the humanities and social sciences. If the knowledge economy becomes too eager to take over, those are the first fields to go under. Just look at what happened in Great Britain under Margaret Thatcher. She closed eight of the most prestigious Philosophy and Arts departments just like that. All the professors and researchers immediately found themselves without a job. A real disaster.

**So you believe that the pressure on young researchers is directly linked to the entire research framework: university policies, financing, future expectations and assessment criteria? What are your recommendations for the government?**

**VB** The first step seems pretty simple to me: review the new Special Research Fund (“BOF”) agreement!

**Is that feasible?**

**VB** I doubt it. As things stand today, I don’t think anything will change. But launching the debate would be a great relief.

**The debate with whom?**

**VB** With all the stakeholders and interest groups, preferably.

**VDL** In the current climate no one has the time to participate in such a debate.

**VB** It’s not only a matter of time. There’s no willingness to do so. With the current system of limited budgets all we can do is sit and stare. The two largest universities in Flanders compete with each other for the number one spot. And the other universities just need to make sure they survive. What’s this one doing? And that one? If one university launches an idea or line of thought, the other three oppose it, keep their eyes wide open and often end up going in the opposite direction because by doing so, financially, they appear to be suffering. Of course you can’t change a thing like that. You can’t change the framework nor can you change the pressure associated with it. The question is, what will the various coalition partners agree upon after the next elections? Who will become responsible for education policy, and who will take charge of science and innovation policy?

**Any other suggestions?**

**VDL** Take into account the changing approach to work and private life. Many researchers say “Let me get my PhD and then we’ll see”. Currently, many young postdocs have a nine-to-five job. That’s a trend you can’t put a stop to. It’s their right, of course. In reality, science is now a business of goodwill. Young professors are not keen on accepting on a policymaking position on top of their work in education and research. And if we’re not careful, the same might eventually apply to lab work outside the pre-set research quotas. At some point that goodwill system will crumble, because nowadays youngsters are fighting for a better quality of life. Young tenure tracks and postdocs are often faced with the highest pressure to generate scientific output, and it often goes hand in hand with changes in their private life. In brief, (too) many parallel projects. I tell my students what is expected of them. As a researcher at university you are expected to give it your all, because the money you earn is paid by society; it’s my money – and yours. Policymakers need to join forces with universities to ensure that this approach, which applies specifically to top researchers, remains viable, for both men and women.

**VB** We need to take action to counter the Matthew effect – the rich get richer. So the goal is not to strengthen it. And that’s what often happens today. That would be a great step forward. The battle to give Hasselt, Antwerp and Brussels their very own spot on the scene was a tough one. We also remain a country of ideologies. It is often said that in practice there are no ideologies. But believe me, they really do exist. And as long as they continue to exist, change will be difficult to achieve. But I refuse to give up hope.
Publication pressure and fraud are regrettable examples of what can go wrong in the world of research.
They are both members of De Jonge Academie (The Young Academy), an independent association of forty young top researchers who work for a Flemish university or research institution. They are just starting their academic career and they have one thing in common: a passion for research. De Jonge Academie is a think tank that studies science policy and the role of researchers in society. Science policy, interdisciplinary research and scientific communication are its main areas of interest. Dr. Tina Kyndt, a bio-engineer, and Prof. Dr. Violet Soen, a historian, are both particularly interested in publication pressure.
Publication pressure is high according to both researchers and the media. Scientists are increasingly judged on their number of publications. This is said to put pressure on the quality of their research. Do you agree?

**Kynadt** Yes, at least that’s how we feel about it. Of course it is logical for research results to be published, but for a few years now we’ve witnessed a trend in which publications are generated just for the sake of it. That gives rise to the impression that quantity prevails over quality. Consequently, the focus is shifting to research or research topics that are easy to publish. And as a result, researchers are increasingly concentrating on short-term activities that will lead to a publication as soon as possible. In a nutshell, they tend to take fewer risks. They don’t invest in the long term. That, in turn, jeopardises other activities too. A few examples? Collaboration with peers, educational tasks, science communication and the launch of interdisciplinary research. Because scientists feel those things are insignificant to further their research career.

**Soen** Academics already have a high working pace, and that won’t change much, regardless of whether output indicators are introduced (laughs, ed.). I have a tenure track mandate. If, after five years, I have met a set of clear, previously determined criteria – that includes several publications – I will be appointed head lecturer. The contract’s main focus is on international peer-reviewed publications. The question is: should you join the race to have more – and preferably even the most – publications? That’s a difficult strategic decision for many young researchers.

**But how do you know how your research will evolve? How can you guarantee you’ll achieve the number of publications agreed upon in your contract?**

**S** That is a challenge indeed. The first tenure track round is not over yet. What will happen after this initiative has been assessed? No one knows. What if, after five years, a researcher has not met the standards? Will he lose his job? The assessment is done internally by the university’s assessment committees.

For some tenure tracks the publication conditions are like a sword of Damocles hanging over researchers’ heads. What if I don’t make it? What will happen then? It breeds insecurity. Young researchers are increasingly encouraged to produce more and more publications. Previous generations were never confronted with these specific conditions and can therefore give little concrete advice. We’re not even sure how exactly the initiative will be assessed. That’s why we are – maybe unwittingly – gearing our publication strategies to measurable, ready-made and fast results.

**What if an experiment goes wrong in the lab?**

**K** That would be a serious setback, and would imply waving goodbye to my publication. In the exact sciences that happens very often. But does that make you a bad researcher? Not at all. There are just no results to show. And that means no publications. Something goes wrong and you’re up a blind alley. Of course, as a scientist, this makes you grow. Practice makes perfect. Making mistakes is an important part of the process. It’s a pity you’ve put so much time and effort into it, though. I have a postdoctoral research fellowship from the Research Foundation – Flanders, and I’ve got two more years to go. And then what? Chances are slim that I’ll get tenure. So I need to produce as many publications as possible to remain in the picture. Because at every opportunity, I need to be able to beat my competitors. That’s the war for talent.

“**Publications are not all that counts anymore.**” Violet Soen

**S** Probably this publication pressure also existed in the past, but the circumstances were different. Today the assessment tools are more accurate. The digitisation of the past decades has made everything more transparent. Today, publications are followed up far better than, say, thirty years ago. And that’s not necessarily a bad thing. The Global Young Academy, the umbrella organisation of all Young Academies worldwide, recently published a study that...
assessed young researchers’ state of mind. The result? Western European researchers are the unhappiest. They complain of a lack of balance between their work and their private lives, and of publication pressure. All of this hampers their creativity and innovation potential. If you spend your free time generating publications, you’re one step ahead of your colleague who wants to invest more in his family. But why make young researchers overtired at the start of their career and risk hindering their ability to come up with creative ideas in the longer run?

**Burnout among researchers?**

**S** The research by the Global Young Academy shows that pressure is mounting in Western Europe. Unfortunately, in the world of academics, there’s no oversupply of vacancies. During the selection process a foreign researcher with more publications than you can always crop up unexpectedly. So what should you do? Increase your publication output even further? Where’s the limit? That’s an issue many young researchers face, and some end up exhausting themselves. A colleague once told me “The university stores facts and figures about everything except the number of burnouts among researchers”. And yet you often hear about problems between the ages of thirty and forty. That’s precisely the target group of De Jonge Academie – young researchers at the start of their career, three to ten years after having earned their PhDs. Something to think about…

**How tough is the competition?**

**K** I’ve had researchers not wanting to work with me because they saw me as a direct competitor. Including postdoctoral researchers. That hurts, because I believe teamwork is more fruitful. Most researchers think collaborations are a win-win situation. But not everyone agrees. There will always be scientists who prefer to work more autonomously. In the exact sciences, the authors of publications are listed in a specific order: the researcher who wrote the paper first and the senior author last. In between those two, you need to jostle for your position. And that’s where the competition gets tough.

**Do any researchers drop out because of publication pressure?**

**S** After you’ve earned your PhD, you need to decide whether to keep going or walk an entirely different path. If you want to be successful as a researcher, you need to work very hard, and maybe even put your career first and your family second for a while. Apart from that, you also need to publish good research results, and quickly. I think that if we focus only on publications, we risk losing a lot of talent in education, policymaking and science communication. After all, it has been proven that research groups work better if people with the most diverse profiles join forces. Our current assessment method results in a loss of diversity. In fact, research careers in Flanders evolve in a very linear pattern. Publish or perish. Not everyone chooses to adhere to this. There are researchers who would be at the top aged thirty-five, but refuse to join the rat race aged twenty-five, and therefore drop out. They’re a lost asset for the university.

**Is this pressure many researchers are confronted with also linked to job insecurity?**

**K** Yes it is. Job insecurity is a direct consequence of the financing system. You only receive financing if you are part of a high-performance research team with a high publication output. It’s a vicious circle. Without a good publication track record you can’t even dream of applying for financing.

“I need to produce as many publications as possible to remain in the picture. Because at every opportunity, I need to be able to beat my competitors.” Tina Kyndt

**S** It’s exponential. The more funds you receive, the more people you can employ. They, in turn, can generate publications. And that once again provides easier access to funding. And so on. The Matthew effect. Large groups consequently become larger and richer. Smaller groups, on the other hand, have problems gaining access to funding. They disappear off the radar. The other side of the coin is that the larger groups tend to carry out more traditional research.
They may also work in a less innovative manner, while scientists should think outside the box.

K That job insecurity is a structural issue. As a PhD student or postdoctoral researcher you are employed on contracts of two, three or four years. You float somewhere in between tenured research professors (“ZAP”) and the technical support staff of your research group. That gap could be partly closed by creating a middle management level. That used to exist, and it included various positions, such as “research leader” and “senior researcher”. The FNRS still has these positions, which bear the French titles of “chercheur qualifié” and “directeur de recherche”. They provide support to the research team in terms of logistics, content and financing. This type of system would be a great way to guarantee diversity. Researchers who are not keen on a career as professor would then be able to deploy their talents in a different manner. I think it would be a good solution for people who’d rather spend more time with their family, and this usually applies to women. They wouldn’t become professors, but they’d remain researchers for the rest of their career. France also has this system. In Belgium it was abolished. But this middle management system remains a hot topic in debates and discussions. Some are in favour, some are against it.

How do you feel about the measure launched by the Research Foundation – Flanders whereby the assessment form doesn’t list all the publications, but only the top five?

S It’s a great measure! It gives a much better idea of the quality of your research. You choose the publications you’re most proud of. External peers who assess your work might then be more tempted to actually read those publications. The Research Foundation – Flanders now also asks you to include activities linked to science communication, such as lectures, articles in magazines for the general public and books. I think it’s great that more attention is being paid to these tools, because if you publish your work in English A1 journals, you only reach a very small, select group of specialists. In my field I can reach a greater audience by writing in Spanish and Dutch, rather than in English. This problem is typical for many alpha sciences. By focusing exclusively on English publications, you create a sort of monoculture. Sometimes you need to ask yourself what the social relevance of your research is. Can you reach a broader audience, and if so, which one? Can you cross the borders of your teaching assignment?

“Researchers who refuse to join the rat race aged twenty-five are a lost asset for the university.”

Violet Soen

K In the exact sciences, English is the gold standard. That’s where our market is. That’s how we reach all of our colleagues who conduct research in similar fields and who can take our research results one step further. To us, it’s standard practice. But I think there’s another possibility. I regret that publications and research are only assessed based on a printed file. A face-to-face discussion with the person assessing your work would be incredibly useful and enriching. I understand it’s time-consuming, but it would give researchers the opportunity to show what they’re doing, what their research means to them, and where their perspectives and ambitions lie.

So you’d suggest a written and an oral assessment?

S It would indeed be very helpful to discuss your work with someone who has read your publications and is assessing your entire case. Last year, the Special Research Fund of the KU Leuven gave me the opportunity to work on a research project. Before I started my work, I had a face-to-face meeting. During and after the project, I also received feedback. That was very useful to me. For A1 publications, you’re only given feedback with regard to content for one article. Your research is not assessed as a whole. You’re not asked what your methodology is, where your focus lies and what you want to achieve with your research.

K It’s actually been proven that people who receive feedback often perform better. Even if it’s negative feedback. At least you know...
what needs to be improved. The Agency for Innovation by Science and Technology (IWT) has been doing this for a long time in its interviews. I once received a PhD grant from this agency. The interview taught me a lot. I had actually spent two months thoroughly preparing for it, because you need to be able to explain your research in detail. You have to explain the topic you intend to work on for the next four years inside out. It’s like an exam. But these constructive discussions with the people assessing your work are so incredibly valuable.

Publication pressure is a hot topic at De Jonge Academie. So is fraud. But the media are too short-sighted. They see fraud as a consequence of high publication pressure. Let’s be clear here: fraud is not the result of publication pressure. High publication pressure and fraud both are regretful examples of what can go wrong in the world of research, but there’s no causal link between them. It’s a pity that the pressure young academics are confronted with is narrowed down to these two topics by the media. The primary goal of De Jonge Academie is to show that we’re passionate about research and that we want to make a constructive contribution to bringing that passion to life. We’re not a group of activists. We’re a mini lab, a think tank. To us, members, it’s extremely useful to be able to listen to each other’s stories and to learn about each other’s publication cultures. Subcultures differ, not only between universities, but also within one and the same university and research tradition. Put all of those elements together and you’ll end up with an interesting mix that gives rise to fascinating ideas and approaches.

“You only receive financing if you are part of a high-performance research team with a high publication output.” Tina Kyndt

That’s why De Jonge Academie is a valuable experiment and a useful discussion partner for policymakers.

The Research Foundation – Flanders has modified its assessment forms. At European level, the ERC has included new criteria in its assessments and apparently ERC grant holders have also launched a youth parliament to discuss the issue of publication pressure. Things are stirring up?

S Definitely. Not so long ago, maybe the focus was too much on quantifying publications. Now we’re witnessing the opposite. Publications are not all that counts anymore. Not everyone agrees with this shift. As I said earlier, diversity is very important. Because of the social relevance of scientific research, there’s a need for different profiles. For top researchers who generate publications, but also for researchers who focus on science communication for a broader audience, enthusiastic lecturers who inform students on the latest developments in research, managers who can launch interdisciplinary research projects, policymakers who concentrate on priorities and decision-making etc. The university of the future needs each and every one of them.

De Jonge Academie does not spare its criticism of the whole framework in which researchers have to live and work. But... ‘la critique est facile’. What exactly would you like to change?

K Obviously it is not our intention to only criticize and certainly not to seem negative. On the contrary. De Jonge Academie is a group of highly motivated and passionate researchers. Exactly because the world of research lies so close to our heart and we only have the best intentions, we look at it with a magnifying glass. But we do so in a very nuanced and constructive manner. By the end of the year, De Jonge Academie wants to publish a vision statement about the university of the future. Where do we want to go with the university? What is a good university education? What is the importance of science communication? What is the value of interdisciplinary research? What is healthy financing? What is a good balance between fundamental and applied research? De Jonge Academie wants to cooperate constructively to all these aspects. And that is a lot more than just publication pressure and fraud.