



Private funding and its dangers to academia: an experience in Switzerland

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ABSTRACT

Academic freedom, a deep-rooted right in the Swiss Constitution, is endangered. Private sponsorship agreements, secretly negotiated between university leaders and big companies, become increasingly vital for universities in Switzerland. Swiss authorities are pushing this development: not only are they taking austerity measures, but also rewarding growth in private third-party funding with even more federal subsidies. This essay presents, after citing a few examples, a short overview of the state of academic freedom with regard to private monies in Switzerland. Introducing academic freedom as a constitutional obligation, it analyses the dangers of private sponsorship for independent universities and then tries to give some insight into the development of necessary framework conditions.

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Concerns regarding threats to the independence of Swiss universities

Higher education institutions in Switzerland, despite the relatively minor size of the country, are widely considered as ranking among the world's leading universities (cf. Thomas 2014). As a consequence, they attract students and scientific staff from all over the world. Over 40% of all researchers in Swiss higher education institutions received their degrees at universities outside Switzerland. The typical Swiss university obtains stable core funding from one or several cantons or the federation,¹ requires low tuition fees and values research and teaching equally. Generally, private non-profit and for-profit higher education institutions are not prevalent in Switzerland. Nevertheless, Swiss politics and administration promote the development of the entrepreneurial university and seeking private funds for higher education. This can be demonstrated by citing two guidelines from the four-year plan regarding the promotion of education, research and innovation in Switzerland 2013–2016. Under the header 'Guideline General aspects of the ERI [Education Research Innovation] system: Establish Switzerland as a location where research and economic activities are based on the principles of equal opportunity, sustainability and competitiveness', we find the following as objectives of the Swiss government:

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- ‘Strengthening social cohesion through the production, dissemination and use of knowledge.
- Allocating greater funding to train the next generation of researchers and qualified workers.’

We believe this shows a shift from an understanding of higher education as a public good to an understanding where higher education institutions are perceived as market players, as thoroughly analysed by Slaughter and Leslie (1997, 209; See also Kauppinen 2012, 546).

Indeed, closer ties between science and the economy have been developed recently. Journalists of the Swiss Broadcasting Corporation SRG SSR found a considerable number of contracts, which were previously withheld from the public.² Hereinafter, we’ll focus on two telling examples:

In 2012, an agreement between the University of Zurich UZH and the Union Bank of Switzerland UBS³ came to the public’s attention. On the occasion of the company’s 150-year anniversary, UBS decided to invest 150 million Swiss Francs (about 125 million Euro at the time) in education; 100 million were designated to fund a new institute at the University of Zurich, the UBS International Center of Economics in Society. However, both UBS and UZH refused to disclose the details of their agreement (Hänggi 2013, 10ff; see also Bradley 2013). Whereas there had been discussions about private sponsoring in Switzerland (e.g. see Hänggi 2013, 169ff), mainly among academics, before the news of this arrangement became known, the deal between university and bank created a modicum of public interest in the subject. Some sporadic newspaper articles were published and a few current affairs programmes reported it on television. But it was not until concerned academics composed a manifesto, the ‘Zürcher Appell’,⁴ that an actual public debate began to take place. The authors of the manifesto felt that academic independence was under threat. Other concerned groups followed, and a lively discussion about freedom of research and research funding on both the institutional and the personal level ensued, which is on-going. Even the business-friendly State Secretary for Education, Research and Innovation, Mauro Dell’Ambrogio, remarked in an interview with the UBS magazine that because of the numerous examples of collaboration between companies and universities, it is ‘all the more important to defend freedom of teaching and research, and insist on the best possible scientific truth’.⁵

Nevertheless, the Confederation and the cantons continue to promote private funding of research and the transfer of its results into concrete marketable products: more collaborative projects between industry and academia are created, more deals between them made. As this goes on, it is only now becoming apparent that all private contributions, trifling as they may seem, may pave the ground for extensive sponsoring agreements (cf. Slaughter and Rhoades 2004, 9).

There have been other, comparable cases of close cooperation between industry and commerce on the one hand and tertiary research institutions on the other. A few years before the UBS affair, Nestlé paid 10 million Swiss Francs (about 6.6 million Euros at the time) for two chairs at the Ecole Polytechnique Fédérale de Lausanne EPFL, one of the two Swiss Federal universities, for research on the impact of nutrition on cognitive and brain development in infants and children, and research on the impact of nutrition on the interaction between the enteric and central nervous system. Nestlé participated with a delegation in the nomination committees for these professorships, which included

the right of veto.⁶ Another recent case of private sponsoring took also place at the University of Zurich UZH. The Family Larsson-Rosenquist Foundation endows a Professorship for Human Lactation Research, paying 20 million Swiss Francs (about 18.5 million Euros) for research into breastfeeding. Both UZH and the Foundation insist that there isn't any danger to academic freedom or independence. Nevertheless, as stated in a UZH press release, the Foundation not only aims 'to promote the scientific and public recognition of human milk *as the best nutrition for newborns*' [emphasis added], but its founders also own a company specializing in breastfeeding products and medical vacuum technology.⁷ Neither the Board nor the Executive Board of the University seem to be concerned about the necessary impartiality of the scientists who will be doing their research with this funding (University of Zurich 2015).

The Nestlé connection seems to indicate an obvious influence by the company on university appointment policy and a potentially more covert one on the direction of the research conducted. The Larson-Rosenquist Foundation sponsorship with its aim of providing scientific proof of the benefits of breastfeeding raises questions concerning potential ulterior commercial motives, but more seriously, the outcome may well bundle research efforts in a specific direction while other, more pressing areas requiring study may be ignored.

We will now present a short overview of the state of academic freedom with regard to private sponsoring in Switzerland. Introducing academic freedom as a constitutional obligation, we will analyse the dangers of private sponsorship for an independent university and then try to give some insight into the development of necessary framework conditions. We will focus on the consequences of financial contributions from the industry and the emergence of the concept of the entrepreneurial university in Switzerland (cf. Etzkowitz 2004, 71ff).

A constitutional right and obligation to protect⁸

Fortunately, the Swiss constitution does not leave academics entirely to the tender mercies of the times; under the heading 'Academic Freedom', it unequivocally states: 'Freedom of research and teaching is guaranteed'.⁹ A priori, it protects the individual academic against interference and prevents governmental intrusion.

Its significance, however, is not limited to the protection of the individual (cf. Barendt 2010, 234). Thus, in order to create and maintain a society in which free academic research and teaching is to be a given, the Constitution requires the government to develop favourable framework conditions. Legislators, administration and judges are therefore called to protect and defend academic freedom against illegitimate interference (Schwander 2002, 134).

Freedom and independence are thus, without a doubt, a pivotal element in academic research and teaching. Yet, and this might be surprising, a *de facto* freedom neither satisfactorily meets the constitutional requirements, nor does it fulfil the expectations of society. It is of utmost importance for research and teaching not only actually to be independent, but also to ensure that this freedom of science, independent universities and autonomous academics is perceived as such in society. Along with sustained efforts to complete the challenging task of guaranteeing absolute personal and institutional independence at all times, the mere *appearance of bias* as a result of outside pressure must not be ignored. Like judges, scholars have to avoid the slightest suspicion of partiality.

Accordingly, the constitutional right also comprises the protection of the university's reputation, its integrity and its credibility as an independent research and teaching institution.

Government responsibility includes the obligation of its universities to avoid financial dependence. The state has to provide regulations and financial support which prevent universities from having to depend on unreliable, short-term funding. Furthermore, it should not be forgotten that in Switzerland a lot of research is already carried out by private companies in entrepreneurial settings and with business funds, motivated and shaped by and limited to market requirements. It then lies within the responsibility of the public universities to cover a large variety of research fields and to address, not least, research issues with limited commercial appeal (addressing, for instance, medical needs in developing countries), as opposed to those meeting mainly the research desiderata of the business world (Müller and Schefer 2008).

Private funding as a threat to independence

Although there is a potential for problems with governmental funding (cf. Etzkowitz 2004, 69f.), the fundamental right to academic freedom is an established instrument to deter the government from intervening (Barendt 2010, 132, 237). With regard to private funding, the dangers of intervening and the use of instruments to prevent it are not quite as elaborated. Whilst it is clear that the state has not only a duty to respect, but also to protect academic freedom against, for example, business interference, and is therefore obligated to provide the necessary legislation and other framework conditions, the extent of this obligation and its implications have yet to be clarified. It is even more important to analyse every single funding contract for its potential negative impact on academic independence. These examinations, and the examples discussed above, are likely to lead to an important insight: 'structural contributions' are, clearly, the most problematic type of private funding. By structural contributions, we mean private funding which constitutes a large part of the total resources of a university department and establishes research infrastructures on a long-term basis.¹⁰ There are variations in the forms of structural contributions, which also represent different levels of threats to academic freedom. A contribution is then potentially most problematic, when the incentive behind private funding of higher education and research is the overt or covert aim either to exploit research findings for commercial gain (cf. Barendt 2010, S. 228). In such contexts, it is justified to assume an alignment of interests between the private donor and the scientist sponsored. Without such a consensus, sponsorship is clearly less challenging (although there should still be considered the problematic notion of knowledge as a marketable material in general: Slaughter and Rhoades 2004, S. 17). Independence is, for example, a more likely outcome if a pharmaceutical firm funds art college studios rather than the research laboratories of an institute of pharmaceutical sciences. This can be convincingly demonstrated by the recent case of Coca Cola offering the University of Colorado, School of Medicine one million US dollars, intended as seed money for research into promoting exercise as a prime strategy to reduce obesity. The soft drinks company is engaged in a PR campaign promoting an active lifestyle and at the same time downplaying the need to reduce or eliminate the intake of highly sugared soft drinks. Clearly, research with the same focus would provide 'scientific grounds' for Cola's preferred strategy to address

obesity. The School gave back the one million US dollars seed money to the company and stated publicly why they insist on being independent (O'Connor 2015).

Hence, there are three main aspects of academic freedom at stake we'd like to focus on when private sponsoring increases to such a structure-building level:

- Independent research includes, *firstly*, the freedom of the academic to choose his or her research subject unaffected by external influences. In Switzerland, universities are, as distinguished from *Fachhochschulen* (universities of applied sciences), above all devoted to basic research and teaching. Basic research, in particular, is easily affected by a lack of freedom in the choice of a research subject independent of likely research outcomes. Not having to take into account commercial exploitation is essential for excellence in basic research. The aim and motivation of academics need to be the search for knowledge and a long-term contribution to the development of society. But this is not what private sponsors are looking for¹¹; generally they have specific research issues and tend to prefer foreseeable outcomes. This is more than likely to encourage a highly problematic trend towards conservative approaches to research in academia, and one that is unlikely to promote thinking outside the box. In summary, market players' risk aversion can lead to a dangerous degeneration of research (Schrecker 2010, 170f).
- *Secondly*, academic freedom obviously affects the act of research, gaining insights and knowledge and making new findings. Private sponsoring may well result in a fundamental, possibly subliminal, flawed perception of research outside its field. Even if there is no tangible evidence of direct influence on the part of the sponsor, privately funded projects will arouse suspicion: the subtle psychological effects on academics collaborating with industry are widely known and proven (Adam 2013, 407ff). The possibility of sponsors influencing research agendas can never be ruled out completely (cf. AAUP 2014, 99f). In other words, in such a situation the appearance of a conflict of interest remains, even if academics are not bound to and have no intention of acting in favour of their sponsors (Hänggi 2013, 70f).
- This leads us to the *third* issue, the personality of the researcher. The characteristics needed for research are at variance with the ones needed for a successful acquisition of third-party funds; essentially an exercise in marketing oneself, with all the need for hyperbole that is inherent in a stance aimed at advertising and selling goods, in this case a research project. The contrast between a personality who can do the 'sales talk' and the serious academic focused on basic but unglamorous research would appear to be rather stark.

It is perhaps appropriate at this point to ponder briefly how certain expressions over the last about four decades have made a 'baffling career' (Hänggi 2016), expressions that represent precisely the PR hyperbole mentioned (cf. Berg and Seeber 2016, 63ff). A simple analysis of word frequencies in PubMed abstracts from 1974 to 2014 reveals that words like 'astonishing', 'enormous', 'excellent', 'groundbreaking', 'phenomenal', 'spectacular', 'unique', 'unprecedented' have increased from an overall frequency of 2% to 17.5% (Vinkers, Tjldink, and Otte 2015). It is not surprising, when sober academic language is replaced by sales talk of this nature, that 'scientists may assume that results and their

implications have to be exaggerated and overstated in order to get published' (Vinkers, Tjldink, and Otte 2015).

What is true for the competitive jostle for publication in high-impact journals of course also applies to the way universities perceive and organize themselves, as well as to the way they function internally. In today's climate of the 'entrepreneurial university' (Mautner 2005), it is less and less remarkable to come across a statement from a senior managerial university representative like the following one: 'Modern universities are businesses and [...] to achieve sound finances they must develop appropriate services and products for which their customers – the government, business, charities, students and the public – should be prepared to pay a fair price' (Dowling 2004, quoted in Mautner 2005, p. 96). Not only is the discourse of 'marketization' (Fairclough 1993) clearly evident, but that in this short excerpt *students* are mentioned almost at the end of the list and that this is a list of 'customers' should at least be cause for concern. What is just as remarkable is universities having to develop 'services and products', rather than educating undergraduates and graduates or conducting basic research (cf. Clark 2005).

What then is to be done

Academia is changing, and scholars have to participate critically and to become a central factor in these developments. Although the research community is obviously not the only voice that matters, we should act more powerfully and make our voices heard: 'The scientific community as a whole is under pressure and must unify and fight together for academic freedom, risk-taking and funding' (Højgaard 2015).

What, then, could be a feasible way to deal with these threats to academic freedom? In conclusion, we would like to propose some directions in which thinking about and dealing with these issues could go.

Initially, and most importantly: public universities need to be funded adequately with public monies. When research is possible only after arduous and highly competitive application procedures, it cannot be done properly (cf. Berg and Seeber 2016, 53ff). A university has to be able to guarantee a certain amount of resources to allow its academics to actually do research without wasting days and weeks in the writing of grant applications and filing quality assurance reports. Today 'researchers are told to do more with less, not only to generate excellent science but also to become scientist entrepreneurs, to commercialize and promote their work'. (Wünning Tschol 2015, 3)

More explicitly: universities shouldn't be seen as enterprises but as administrative institutions. Endowed with a clear research and teaching assignment, they fulfil a social function. Research and teaching should come first (Disagreeing Etzkowitz 2004, 72). To maintain publically funded universities implies assuming responsibilities: if a society wants independent research, and there are many reasons why it should, a solid basis ensuring honest and dedicated work – with as little interference by managerial considerations as possible – is indispensable.

Nevertheless, it is probable, if not actually inevitable, that there will always be a certain amount of private funding in higher education and research. That's why it is not enough that most universities in Switzerland claim their autonomy and their independence in theory only. Specific and standardized legislation is needed. Without guidelines, it is not in the power of every single university to resist the offers of big companies. On a national level at least, but preferably on a European or – even better – an international one, basic framework conditions should be defined and implemented. What new provisions they should

actually contain is a question that needs to be discussed among academics, legal scholars and politicians and has to be answered through the usual legislative process, or, on the international level, through multilateral negotiations. Clearly such guidelines would have to include transparency rules for and specifications about the allocation of private monies. The ‘Recommended Principles to Guide Academy-Industry Relationships’, an extensive handbook in this field, elaborated by the American Association of University Professors, can and should be used as an example by European HEI and stakeholders as a starting point. (AAUP 2014, e.g. 166, Principle 22)

For example, to avoid an appearance of bias, universities, its institutes or its Chairs should not be named after companies, particularly if there is an alignment of interests. If there are no shared interests at all, if no such concurrence of interest is likely, adopting a company name for an academic institution could be allowed under defined conditions. As far as academic freedom and independence are concerned, it is only under such strict conditions that company names may have a place in a university. But even then, from the point of view of economic freedom¹², problems arise. In Switzerland, the state administration is prohibited from interfering with the free market. The constitution does not allow, for example, the support of a single market player with public monies. Furthermore, an overly prominent presence of a private firm in university contexts needs to be scrutinized. There is a common practice at many Swiss Law faculties: law firms (or other companies; e.g. a bank) are given the opportunity to award a prize for the best graduates, the best Master theses or even the best teacher. A representative, often one of the partners, participates in the graduation ceremony; the law firm is mentioned when the diplomas are handed over, and sometimes the representative takes the floor for a few words about legal studies, the law firm in question or the awarded thesis. To accept such a close connection between a private company and a public university can lead to improved positioning on the market of this single company, vis-à-vis their competition. This, not unlike the naming of lecture halls or entire university institutes (e.g. UBS International Center of Economics in Society at the University of Zurich), implies an endorsement of this company by the public university and therefore violates the constitutional right for economic freedom.

In the Swiss context, one possible solution might be to establish foundations. The task of these foundations – one for each university – would be to raise private funds and distribute them, complying with the national regulation. Thus, to a large extent, conflicts of interests could be avoided.

The UBS deal could not have happened within such a framework regulation. But, to avoid problematic collaborations completely, one important element is missing: transparency. This is actually one of the first and easiest goals to achieve, but the crucial prerequisite is the commitment of the parties involved to being open about the provisions of their cooperation. Interestingly enough, it is frequently not the company, but the university which struggles with disclosure. Public disclosure of private sponsoring agreements could represent a very important change (see Schrecker 2010, 174f, for reasons behind the resistance for transparency within the universities). It is the precondition for a serious discussion about the independence of universities. Neither journalists nor academics nor students are able to exercise the necessary internal or public control until such agreements are disclosed. But, (and discussions in Switzerland nowadays seem to have a tendency to move in this direction), transparency, although it is crucial, *cannot*, in itself, solve the problems of bias in academia. As discussed, explicit regulations and an improved awareness are required.

Outlook

Up to the present, all efforts to create this urgently needed framework in Switzerland have failed. Although the National Union of Students in Switzerland (Meister et al. 2012), and later, even the Swiss Science and Technology Council (SSTC, [now Swiss Science and Innovation Council SSIC] 2013; after all this is the official counselling organ of the Swiss government on science policies), have called for measures, their call remain unheard. In addition, action taken by the Swiss Academies of Arts and Sciences failed to overcome the resistance of Swiss universities and the Swiss Rectors' Conference.¹³ Even if academia should decide to be sympathetic to an increase in private funding, the community should make a decision only after a thorough discussion of current developments and their results. Academics need to take a stand in the public debate from a scientific point of view because

there is nothing better than good science to help us to see further and it is therefore too important to allow it to become just another human exercise in chasing targets instead of truths. [...] We need to save scientific research from the business it's become. (Jha 2016)

If we fail to do so, if we allow the erosion of academic freedom to continue, this would mean everyone would lose out:

- *Universities* and *academics* will no longer be seen as credible or objective. As a consequence, their research results would be valued less.
- As research results lose their value, the sought-after image-transfer from university to sponsor will be in jeopardy too: With the perception of decreased independence and freedom of universities not only will there be fewer reliable, objective results but also the desired scientific seal of approval will lose its credibility.
- *Society* loses one of its independent entities, to which every individual can turn in cases of pressing and controversial issues. Furthermore, there will be no place for a politically and ideologically independent education for budding young academics.

But in order to end on an encouraging note, we would like to cite J. Bourguignon, who advised his fellow participants at the 10th Berlin debate on Science and Science Policy: 'Don't lose the vision that if we mobilize, we can achieve something' (Bourguignon 2015, 18).

Notes

1. Switzerland is a federal state and consists of 26 cantons. They are granted a great amount of autonomy and act as the responsible body for most universities.
2. <http://www.srf.ch/news/schweiz/uni-transparenz>.
3. UBS was founded in Switzerland and is a global financial services company based in Zurich. See also Schütz (2000).
4. http://www.zuercher-appell.ch/index_en.php.
5. Lehmann-Maldonado (2013) 'Switzerland is tops for education!' Mauro Dell'Ambrogio, State Secretary for Education, Research and Innovation, explains why Switzerland is a knowledge leader, UBS magazine 'Ideas for your money' 3: 8–12.
6. Alliance Agreement between Nestec Ltd., Avenue Nestlé 55, CH-1800 Vevey, Switzerland and Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland, November

- 21 2006; see also: http://www.swissinfo.ch/eng/academic-autonomy_regulator-slams-terms-of-nestl%C3%A9-sponsoring-deal/38602922.
7. Medela AG, <https://www.medela.com>.
 8. The following remarks are based on Müller (2014).
 9. Art. 20 Federal Constitution of the Swiss Confederation of 18 April 1999, CC 101. See for a list of similar legal provisions in European Countries the Annex of the ALLEA Statement of Principles: <http://www.allea.org/statement-of-principles-released-private-sponsoring-in-the-science-enterprise-trust-in-science-and-academic-freedom/>.
 10. The American Association of University Professors focuses on the term ‘significant’ financial interest and defines it as an interest, that ‘is valued at or above \$5000 per year and it is not controlled or managed by an independent entity such as a mutual or pension fund’ (AAUP 2014,117).
 11. Needless to say that similar problems arise when the State, its research funding agencies or the European Commission increasingly promote research through project funds and cut core funding (cf. Etzkowitz 2004, 69f).
 12. The Federal Constitution of the Swiss Confederation of 18 April 1999, CC 101, stipulates under Article 27(1), Economic freedom: ‘Economic freedom is guaranteed’.
 13. Available at: <http://www.akademien-schweiz.ch/en/index/Schwerpunkte/Wissenschaftliche-Integritaet.html>.

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References

- Adam, M. 2013. “Interessen in wirtschaftsnaher Forschung – nutzen oder bannen?” In *Werte in den Wissenschaften: Neue Ansätze zum Werturteilsstreit*, edited by G. Schutz and M. Carrier, 397–420. Berlin: Suhrkamp.
- American Association of University Professors AAUP. 2014. *Recommended Principles to Guide Academy-Industry Relationships*.
- Barendt, E. 2010. *Academic Freedom and the Law*. Oxford: Hart.

- Berg, M., and B. K. Seeber. 2016. *The Slow Professor: Challenging the Culture of Speed in the Academy*. Toronto: University of Toronto Press.
- Bourguignon, J.-P. 2015. *10th Berlin Debate on Science and Science Policy: Under Pressure? The Role of Science between Democratization, Economization and the Grand Challenges, Summary Report*, 18. November 8. http://www.bosch-stiftung.de/content/language2/downloads/BerlinDebate2015report_review.pdf.
- Bradley, S. 2013. "UBS Funding Casts Doubt on University Independence." *Swissinfo.ch*, December 18. www.swissinfo.ch/eng/academic-sponsorship_ubs-funding-casts-doubt-on-university-independence/37566568.
- Clark, B.R. 2005. "The Character of the Entrepreneurial University." *International Higher Education, The quarterly publication of CIHE* 38: 2–3.
- Dowling, P. 2004. "Free up Our Enterprise." *The Times Higher Educational Supplement*, January 12.
- Etzkowitz, H. 2004. "The Evolution of the Entrepreneurial University." *International Journal of Technology and Globalisation* 1 (1): 64–77.
- Fairclough, N. 1993. "Critical Discourse Analysis and the Marketization of Public Discourse: The Universities." *Discourse Society* 4 (2): 133–168. <http://dx.doi.org/10.1080/14637579308410613>.
- Hänggi, M. 2013. *Cui bono: Wer bestimmt, was geforscht wird*. Basel: edition gesowip.
- Hänggi, M. 2016. "Die verblüffende Karriere von 'groundbreaking' und Co.," *WochenZeitung WOZ*, January 14.
- Højgaard, L. 2015. *10th Berlin Debate on Science and Science Policy: Under Pressure? The Role of Science between Democratization, Economization and the Grand Challenges, Summary Report*, November 8. http://www.bosch-stiftung.de/content/language2/downloads/BerlinDebate2015report_review.pdf.
- Jha, A. 2016. "Saving Science from the Scientists.," *BBC Radio 4*, March 21. <http://www.bbc.co.uk/programmes/b07378cr>.
- Kauppinen, I. 2012. "Towards Transnational Academic Capitalism." *Higher Education* 64 (4): 543–556.
- Lehmann-Maldonado, S. 2013. "'Switzerland Is Tops for Education!' Mauro Dell'Ambrogio, State Secretary for Education, Research and Innovation, Explains why Switzerland is a Knowledge Leader." *UBS Magazine 'Ideas for Your Money'* 3, 8–12.
- Mautner, G. 2005. "The Entrepreneurial University: A Discursive Profile of a Higher Education Buzzword." *Critical Discourse Studies* 2 (2): 95–120.
- Meister, L., R. Loliva, M. Wiher, and G. Irimia, and the Swiss Student Union VSS-UNES-USU 2012. *The Swiss Student Union Towards the Commodification of Higher Education*. Bern: VSS-UNESUSU.
- Müller, M. 2014. "Akademische Freiheit – Sorgen um ein bedrohtes Gut." In *Berner Gedanken zum Recht: Festgabe der Rechtswissenschaftlichen Fakultät der Universität Bern für den Schweizer Juristentag 2014*, edited by P. Kunz, J. Weber, A. Lienhard, I. Fargnoli, and J. Kren Kostkiewicz, 381–404. Bern: Stämpfli.
- Müller, J. P., and M. Schefer. 2008. *Grundrechte in der Schweiz: Im Rahmen der Bundesverfassung, der EMRK und der UNO-Pakte*. Bern: Stämpfli.
- O'Connor, A. 2015. "University Returns \$1 Million Grant to Coca-Cola.," *The New York Times*, November 7.
- Schrecker, E. 2010. *The Lost Soul of Higher Education: Corporatization, the Assault on Academic Freedom and the End of the American University*. New York: New Press.
- Schütz, D. 2000. *The Fall of UBS: The Forces that Brought down Switzerland's biggest bank*. New York: Pyramid Media Group.
- Schwander, V. 2002. *Grundrecht der Wissenschaftsfreiheit im Spannungsfeld rechtlicher und gesellschaftlicher Entwicklungen*. Bern: Verlag Paul Haupt.
- Slaughter, S., and L. L. Leslie. 1997. *Academic Capitalism*. Baltimore, MA: Johns Hopkins University Press.
- Slaughter, S., and G. Rhoades. 2004. *Academic Capitalism and the New Economy*. Baltimore, MA: Johns Hopkins University Press.
- SSTC. 2013. "Economization" of Science, Recommendations and Proceedings of the Seminar Held in Bern, Report 4/2013, Swiss Science and Technology Council SSTC on April 23.

- Thomas, K. 2014. Why does Switzerland Do So Well in University Rankings? *The Guardian Blog*, October 1. <https://www.theguardian.com/higher-education-network/blog/2014/oct/01/switzerland-university-rankings-invest-research-science>.
- University of Zurich. 2015. Family Larsson-Rosenquist Foundation Endows First Professorship Worldwide for Human Lactation Research, *News Release*, July 7. <http://www.media.uzh.ch/en/Press-Releases/archive/2015/familie-larsson-rosenquist-stiftung-finanziert-weltweit-ersten-lehrstuhl-fuer-muttermilchforschung.html>.
- Vinkers, C., J. Tjldink, and W. Otte. 2015. "Use of Positive and Negative Words in Scientific PubMed Abstracts Between 1974 and 2014: Retrospective Analysis." *British Medical Journal* 351: h6467.
- Wünning Tschol, I. 2015. *10th Berlin Debate on Science and Science Policy: Under Pressure? The Role of Science between Democratization, Economization and the Grand Challenges, Summary Report*, 8. November 8. http://www.bosch-stiftung.de/content/language2/downloads/BerlinDebate2015report_review.pdf.