

Gordana Cerjan Letica<sup>1</sup>, Slaven Letica<sup>2</sup>

## Znanstvena nedoličnost: kako se s njom nositi u Hrvatskoj?

### *Scientific Misconduct: How to Handle it in Croatia?*

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<sup>1</sup> Katedra za opće i društvene predmete Stomatološkog fakulteta Sveučilišta u Zagrebu, Zagreb, Hrvatska  
*Department of Social Sciences, School of Dental Medicine, University of Zagreb, Zagreb, Croatia*

<sup>2</sup> Katedra za medicinsku sociologiju i ekonomiku zdravstva - Škola narodnog zdravlja "Andrija Štampar" Medicinskog fakulteta Sveučilišta u Zagrebu, Zagreb, Hrvatska  
*Department of Medical Sociology and Health Economics, School of Public Health "Andrija Štampar", Medical School, University of Zagreb, Zagreb, Croatia*

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U posljednje vrijeme u našoj su zemlji zaredale optužbe, protuoptužbe i istraživački (pa i istražni) postupci vezani za (medicinske) znanstvene plagijate, što je unijelo osjećaje dubokih frustracija, tjeskobe i agresije u medicinsku akademsku zajednicu koja je uvijek bila primjer profesionalne, istraživačke i publicističke izvrsnosti te kolegijalnosti, solidarnosti i humanosti.

Smatramo da je potaknuta (javna) rasprava na Sveučilištu i u medijima vrlo dobra za budućnost hrvatske znanosti, obrazovanja i kulture, ali je vrlo loše to što se ona vodi s mnogo strasti i površno, a ne na temelju ozbiljnih, cjelovitih teorijskih i empirijskih uvida u raširenost i etiologiju toga ozbiljnog problema.

O znanstvenim plagijatima u zapadnim se znanstvenim zajednicama i medijima raspravlja u sklopu diskusije o nečasnom akademskom ponašanju i zakonskim prijestupima znanstvenika kao što su: (a) izmišljanje i falsificiranje istraživačkih rezultata, (b) sterilnost, lijenost i nesposobnost znanstvenika; (c) eksploatacija ili sprječavanje profesionalnog razvoja mlađih kolega; (d) unajmljivanje gostiju-pi-

Numerous allegations, counter-allegations, inquiries and even inquests related to scientific (medical) plagiarism have become frequent in our country lately and the situation has brought a feeling of deep frustration, anxiety and aggression into the medical academic community – which has always been a bright example of professionalism, of excellence in research and publicizing, as well as solidarity, collegueship and humanity.

We deem that the undergoing (public) debate at the University and in the media is very good for the future of Croatian science, education and culture, but it is a shame that debate is being carried out with increased passion and without sufficient detail, and is not supported by thorough and serious theoretical and empirical insight into the dispersity and etiology of this grave problem.

Scientific plagiarism is being debated in western scientific communities and media in frames of discussion on academic dishonesty and violations of law such as: a) faking and forging of scientific results, b) unproductivity, laziness and incompetence of scientists, c) exploiting or preventing profession-

saca i pisaca-duhova, (e) cjelovito i mozaično plagiranje, (f) "počasno autorstvo" – opće poznata situacija u biomedicini kada su šefovi katedri, kliničkih odjela i laboratorija te stariji profesori, koji su malo ili nimalo sudjelovali u istraživanjima, bili navedeni kao ključni autori ili suautori znanstvenih radova, (g) "nevidljiva" krađa i gusarenje tuđih ideja tijekom procesa recenziranja i mentorstva, (h) nepotizam, (i) sukobi interesa i korupcija u istraživanjima i nastavi te (j) ostali oblici zlouporabe istraživačkog, nastavničkog i znanstvenog položaja i rada itd.

Ta se rasprava, također, smješta u kontekst širih debata o intelektualnim krađama, gusarenju i "džeparenju" u drugim područjima društvenog života: u novinarstvu, politici, arhitekturi, književnosti, ozbiljnoj i popularnoj glazbi, umjetnosti općenito, zakonodavnoj djelatnosti, birokraciji (birokratski plagijati), industrijskom i grafičkom dizajnu itd.

Ostavljajući ipak po strani taj širi kontekst, koji će uskoro i u Hrvatskoj postati aktualan, želimo istaknuti da na našem Sveučilištu i u našoj zemlji postoji golem *teorijski, institucionalni i normativni deficit* u odnosu prema složenom fenomenu znanstvene nedoličnosti te, posebice, plagiranja, plagijatora i plagijata.

Primjerice, u Etičkom kodeksu (EK-u) Sveučilišta u Zagrebu (1) uopće nema definicije različitih oblika plagijata, nego su u članku 19. navedene samo načelne odredbe, od kojih nekima - zaštitu intelektualnog vlasništva, primjerice - nije uopće mjesto u EK-u, jer su predmet zakonske regulative.

Nasuprot tome, gotovo sva vodeća zapadna sveučilišta, posebice američka, precizno određuju što se sve smatra plagijatom. A plagijatom se na Harvardskome sveučilištu, na primjer, smatraju *dvije vrste* intelektualnih krađa i one se čak navode u uputama za pisanje studentskih radova (2,3): (a) *cjeloviti plagijat* (kada student kupi, prepíše ili s interneta prekopira cijeli rad) i (b) *mozaični plagijat*. Mozaični plagijat može se pojaviti u tri podoblika: (b1) doslovno prepisivanje i autorsko prisvajanje dijelova teksta, (b2) konceptualni plagijat (krađa tuđe ideje i/ili koncepta) te (b3) strukturni plagijat (krađa pristupa, metoda, strukture istraživanja i istraživačkog papira). Treba također reći da se u većini europskih i američkih etičkih kodeksa plagijatima, s pravom, smatraju još: (c) citiranje primarnih izvora na temelju sekundarnih, bez dužnog i preciznog navođenja te činjenice i (d) samoplagiranje te dvostruko ili višestruko objavljivanje dijelova ili cijelih vlastitih tekstova.

al growth and development of younger colleagues, d) hiring of guest writers and ghost writers, e) mosaic and total plagiarism, f) „honorary authorship“ – it is a notorious situation when heads of departments, clinical wards and laboratories as well as senior professors in the bio-medical field are listed first as principal authors or co-authors though their contribution to the research project and paper is minimal or non existing, g) „invisible“ theft and piracy of others' ideas during the peer-review process and mentoring, h) nepotism, i) conflict of interest and corruption in research and teaching and j) other forms of misuse of position of researcher, teacher and scientist etc.

This debate is also placed in context of wider discussions regarding intellectual theft, piracy and "pick pocketing" in other fields of social life: journalism, politics, architecture, literature, music, art in general, legislature, bureaucracy (bureaucratic plagiarisms), industrial and graphic design etc.

Putting aside this broader context, which we assume will become an actual theme in Croatia soon, we wish to stress out that our University and our country has an enormous theoretical, institutional and normative deficit in regards to the complex phenomenon of scientific misconduct and especially plagiarism and plagiarizing.

For example, The Code of Ethics of the Zagreb University (1) does not even define various forms of plagiarism, but rather gives only general provisions in article 19, some of which, like the protection of intellectual property, do not even belong in the code of ethics, as they are the subject of Law regulation.

In comparison, almost each of the leading western universities, especially the American ones, list in detail all the forms of conduct which may be regarded as plagiarism. For example, the Harvard University views plagiarism as two forms of intellectual theft and lists them even in the Students' Guide (2,3): a) Total plagiarism (when a student purchases, copies or downloads from the Internet an entire paper) and b) mosaic plagiarism. Mosaic plagiarism has three sub-forms: b1) literal copying parts of text written by another, b2) conceptual plagiarism (stealing of another's idea and/or concept), b3) structural plagiarism (stealing of approach, method, research structure). We should also mention that most European and American honor codes also view, and rightfully so, the following behavior as plagiarism: c) citing primary sources based on the secondary, without precisely stating this fact and d) self plagiarizing and double or multiple publishing parts of text or entire text.

Drugi *normativni deficit* koji bi se trebao riješiti na razini Sveučilišta i pojedinačnih fakulteta jest precizno *definiranje procedure* kojom se u odgovarajućim institucijama provjeravaju sumnje ili optužbe pojedinaca ili skupina znanstvenika za plagijate ili druge oblike znanstveno nedoličnog ponašanja.

Hrvatski recentni primjeri optužbi za plagijate razmotreni su i procesuirani manje više *ad hoc*, zato ćemo ovdje za ilustraciju navesti Smjernice za odgovorno ponašanje u znanstvenoj komunikaciji američkoga Društva za neuroznanost (4) i njegovih dviju publikacija. U Smjernicama su točno navedene odredbe koje treba poštovati u istraživanju optužbi za plagijat. (Kako je jedan od problema nošenja akademske zajednice sa slučajevima plagijata kod nas i nedostatak jasnih pojmova, napominjemo da smo za ključnu englesku frazu *misconduct in science* rabili sintagmu znanstvena nedoličnost, a ne često korišteni hrvatski opisni pojam *loše vladanje* - bez pretenzije da budemo jezični stručnjaci):

"*Optužbe za znanstvenu nedoličnost trebaju se istražiti bez odgode, ali uz dužno poštovanje prava svih zainteresiranih pojedinaca. Nedoličnost u istraživanjima ugrožava znanstvenu djelatnost i treba biti istražena odmah i detaljno. No, bitno je da taj istražni postupak poštuje prava optuženih i prava pojedinaca koji ih optužuju.*

1. Od pojedinaca koji sumnjaju u nedoličnost, treba zahtijevati da uredniku i/ili ustanovi autora pruže dokaze za svoje tvrdnje.
2. Od autora se očekuje puna suradnja u postupcima kojima se istražuje znanstvena nedoličnost, uključujući pristup izvornim podacima i laboratorijskim bilješkama.
3. Pojedinci koji iznose optužbe ohrabruju se da dopuste da njihov identitet bude poznat istraživačkoj instituciji. No, ako oni na to ne žele pristati, njihov se zahtjev mora poštovati.
4. Treba se potruditi da svaka faza istražnog postupka bude poštena i pravedna i za optuženoga i za pojedince koji iznose optužbe.
5. Optuženi se mora smatrati nedužnim dok dokazi ne pokažu suprotno. No, urednik može odgoditi objavu upitnog članka dok očekuje ishod istražnog postupka.
6. Optužitelji koji optužbe iznose u dobroj vjeri, ne smiju biti predmet osвете, čak i ako se nedoličnost ne pronađe.
7. Tijelo koje optužbe istražuje treba postupak završiti brzinom usklađenom s potrebom za detaljnim i nepristranim ispitivanjem.
8. Spoznaja o tome da se istražni proces provodi ili

The other normative deficit which should also be resolved by the University and individual schools is the precise defining of procedure for inspecting suspicions and allegations of individuals and groups of scientists for plagiarism or other forms of misconduct.

As the Croatian recent cases of accusations for plagiarism have been discussed and put into disciplinary procedures more or less *ad hoc*, here we will expose provisions from the Responsible Conduct Regarding Scientific Communication ("Guidelines") established by the Society for Neuroscience (4) and its two scientific journals. The "Guidelines" provide precise directions to be followed in the cases of plagiarism charges:

"Misconduct in research threatens the scientific enterprise and should be investigated promptly and thoroughly. However, it is essential that such investigations respect the rights of both the accused and the individual making the accusation.

1. Individuals who allege misconduct should be asked to provide their evidence to the editor and/or authors' institutions.
2. Authors are expected to cooperate fully with misconduct investigations, including providing access to original data and laboratory notebooks.
3. Individuals who allege misconduct are encouraged to allow their identities to be made known to the investigating institution. However, should they choose not to do so, this request should be respected.
4. At all stages, every effort should be made to ensure that the process is fair and just, both for the accused and the individuals making the allegation.
5. The accused should be considered innocent of wrongdoing until the evidence indicates otherwise. However, an editor may delay publication of a challenged paper pending the outcome of the investigation.
6. Accusers who bring forward allegations in good faith should not be subjected to retaliation, even if no misconduct is found.
7. The entity investigating the accusation should complete that investigation as quickly as possible, consistent with the need for a thorough and impartial inquiry.
8. Knowledge that an investigation is being or has been conducted, as well as any information collected in the process, should be restricted to the absolute minimum number of persons necessary and treated with strict confidentiality, even after the investigation is complete. However, infor-

da je proveden te svaka informacija prikupljena tijekom tog procesa, trebaju biti poznati apsolutno minimalnom broju nužnih osoba. Istražni postupak treba se smatrati povjerljivim, čak i nakon što je završen i zaključen. No, informacije o konkretnom istražnom postupku i njegovim nalazima valja učiniti javnima u slučaju kad je općenito poznato da se postupak vodi i kad je optuženi znanstvenik oslobođen odgovornosti."

Konačno i najvažnije: ako akademska zajednica dopusti da se o fenomenu plagijata vode pojedinačni postupci, a da prije toga nije provedena ozbiljna i široka teorijska rasprava i precizno razrađen institucionalni i normativni okvir, krajnji bi rezultat mogao lako biti svojevrsni "građanski rat" u gotovo svim fakultetskim i profesionalnim istraživačkim i nastavnim zajednicama.

Okolnost da hrvatski stomatolozi nisu počeli raspravu o znanstvenoj nedoličnosti i istraživačkom integritetu u vlastitim redovima, zahtijevala bi elaboraciju izvan konteksta ovog priloga. No, nije nevažno spomenuti da neki međunarodni autori (5), u nedostatku kvantitativnih pokazatelja, upozoravaju da vodeći stomatolozi ne uočavaju nikakve razlike između stomatologije i drugih disciplina što se ozbiljne znanstvene nedoličnosti tiče.

Na nedavno održanom predavanju u Zagrebu pod inspirativnim naslovom "Noćne more sredovječnog urednika", glavni urednik Lanceta dr. Richard Horton rekao je da podjednako kako u društvu ne možemo uvijek spriječiti zločin, tako ni u znanosti ne možemo uvijek spriječiti izmišljanje i falsificiranje istraživačkih rezultata. Posebno se osvrnuo na skandal u vezi s krivotvorenjem istraživačkih rezultata iz godine 2006. – na slučaj Jona Sudbøa (6,7) koji je strahovito uznemirio biomedicinsku istraživačku i publicističku zajednicu. Dr. Sudbø, stomatolog, onkolog, jedan od vodećih istraživača karcinoma i glavni dužnosnik u Norwegian Radium Hospitalu u cijelosti je izmislio članak koji je u listopadu 2005. objavio u Lancetu (8). U istraživanju kojim je, navodno, dokazao da dugotrajno korištenje nesteroidnih anti-inflamatornih lijekova smanjuje rizik od nekoliko vrsta oralnih karcinoma, dr. Sudbø je ustvari izmislio pacijente i njihove povijesti bolesti. Nakon što mu je neovisno povjerenstvo, koje se bavi istraživačkim integritetom, dokazalo znanstvenu nedoličnost u konkretnom članku (osim toga izmišljanje podataka dokazano mu je u 15 od 38 objavljenih članaka), dr. Sudbøu je oduzeta licencija za obavljanje medicinske i stomatološke djelatnosti te doktorat znanosti, a sporni članak je povučen.

mation regarding the investigation and its findings should be released in cases in which misconduct has been determined to have occurred or when knowledge that an investigation is being conducted has become generally known and the accused scientist is exonerated."

Finally and most significantly: if the scientific community allows for individual procedure to be carried out without previous serious and broad theoretical discussion and without a previously elaborated institutional and normative frame, the end result could easily be a „civil war“ of its own kind in almost all academia and every research and scientific communities.

The circumstance that the Croatian dentists have not started a debate dealing with scientific misconduct and research integrity in their own lines would demand elaboration outside the context of this paper. It is not, however, without meaning to mention that international authors (5), in the lack of quantitative data, state that the leading dental scientists and officers point that they do not perceive any difference in dentistry as compared with other scientific areas – as far as serious academic misconduct is concerned.

At a lecture given in Zagreb not long ago by Dr Richard Horton, under an inspirational title „The nightmare of a middle-aged editor“, the editor-in-chief of The Lancet said that we can not always prevent fabrication in science just as we can not always prevent crime in our society. He particularly made a reference to the research fabrication scandal which surfaced in 2006, the case of Jon Sudbø (6,7), which was especially disturbing for the bio-medical research and scientific publishers communities. Dr Sudbø, a dentist, oncologist, one of the leading cancer researchers and chief medical officer at The Norwegian Radium Hospital has fabricated in its totality an article published in The Lancet in October 2005 (8). The research results allegedly proved that the long-term use of non-steroidal anti-inflammatory drugs (NSAIDs) decrease the risk of several types of oral cancer. Actually Dr Sudbø made up patients and case histories. After an independent investigation committee dealing with research integrity proved his article to be fraudulent (besides that, even more fabrication of data by him was proven in the case of 15 out of 38 published papers) Dr Sudbø's license to practice medicine and dentistry has been revoked, as was his doctorate of science. The fraudulent article was withdrawn.

In a letter to the editor of the British Medical Journal written by one of the authors of this paper

U pismu uredništvu, koje je jedan od autora ovog teksta poslao British Medical Journalu (9), upozoreno je na neke okolnosti što bi ih hrvatska akademska zajednica, u svojoj *strategiji nošenja* s plagijatima, trebala uzimati u obzir. Etička načela i norme koje su vrijedile za znanstvenu izvrsnost i poštenje prije desetak, kamoli tridesetak ili više godina, danas jednostavno više ne vrijede, ali to ne znači da hrvatska akademska zajednica treba svu svoju energiju uložiti u proces koji bismo mogli nazvati ZNANSTVENOM LUSTRACIJOM.

U tom smislu trebalo bi *bez odgode utemeljiti multidisciplinarnu skupinu znanstvenika koji bi, u najkraćem mogućem roku, bili spremni i sposobni pripremiti temeljni tekst o problemu plagijata i plagiranja na Sveučilištu u Zagrebu i drugim hrvatskim sveučilištima, s razrađenom strategijom nošenja hrvatske akademske zajednice (nastavničke i studentske) s tim problemima. Odgovorni pristup Sveučilišta fenomenologiji plagijata i znanstvene nedoličnosti općenito, ograničio bi potrebu za državnim represivnim mjerama i osnažio opravdane prosvjede.*

Na kraju, svakako želimo reći da optužbe za plagijate i istraživanje plagijata nisu nikakva hrvatska posebnost. Neki od vrlo uspješnih, uglednih, pa i slavni svjetskih znanstvenika optuženi su za plagijate i to im je dokazano. Navest ćemo tek nekoliko najpoznatijih imena – slučajeva: kultni i tragični američki borac za ljudska prava Martin Luther King Jr. (plagirao je dijelove doktorata); ugledni američki psihijatar Shervert Fraizer; slavni američki povjesničari i pisci bestselera Stephen Ambrose i Doris Kearns Goodwin; škotski povjesničar James A. Mackay; poljski biokemičar Andrzej Jendryczko; nizozemski psiholog René Diekstra. Reporter New York Timesa, Jayson Blair plagirao je i izmišljao reportaže.

Američki biokemičar Robert Liburdy; američki oftalmolog Evan Dreyer; američki fizičari Victor Nirov i Jan Henrik Schön; američki fiziolog Eric Poelhman; korejski istraživač Hwang Woo-suk itd. krivotvorili su i izmišljali istraživačke rezultate – u jednom razdoblju svoje čudesne karijere Jan Henrik Schön objavljivao je čak po jedan znanstveni tekst na tjedan (10).

Ti i bezbrojni drugi primjeri tek su vrh ledenoga brijega fenomena plagiranja i znanstvene nečestitosti u akademskim zajednicama koje su znatno veće, produktivnije i bogatije od hrvatske. Upravo zbog toga, problemu nedoličnosti u znanosti nužno je pristupiti što prije, ali krajnje ozbiljno, odgovorno, sustavno i nepristrano.

(9) there were several important points which should be taken into consideration by the Croatian academic community in its strategy for fighting plagiarism. The ethical norms and principles which were sufficient and effective for scientific excellence a dozen years ago, let alone 30 or more years ago, are simply not sufficient and up to time today, but this does not mean that the Croatian academic community should employ all of its energy in the process which we could call SCIENTIFIC LUSTRATION.

In that effect, we should, without any delay, establish a multidisciplinary group of scientists who would in the shortest possible period prepare a basic text about the plagiarism problem at the University of Zagreb and other Croatian universities, including a carefully thought out strategy for challenging the problem by the Croatian academic community (both professors and students). A responsible approach of the University to the phenomenon of plagiarism and scientific indecency in general would limit the need for the State's repressive measures and strengthen the justified protests of individual scientists and the whole academic community against jeopardizing the autonomy of the University.

Towards the end of this article, we wish to say that the plagiarism accusations and investigation of plagiarism is by no means a Croatian specific. Some of the most successful, renowned and famous international scientists were charged of plagiarism and the charges were proved. Here we will list only a few of the most famous names/cases: the famous and tragic American human rights fighter Martin Luther King Jr. (plagiarism of a part of his doctorate thesis); the well respected American psychiatrist Shervert Fraizer; the famous historians and best-seller authors Stephen Ambrose and Doris Kearns Goodwin; the Scottish historian James A. Mackay; the Polish biochemist Andrzej Jendryczko; the Dutch psychologist René Diekstra. A reporter for the New York Times, Jayson Blair, plagiarized and faked stories.

The American biochemist Robert Liburdy, the American vision researcher Evan Dreyer, the American physicists Victor Nirov and Jan Henrik Schön, the American physiologist Eric Poelhman, the Korean researcher Hwang Woo-suk etc. all of them falsified and fabricated research data. In one period of his amazing career Jan Henrik Schön had been publishing almost one paper per week (10).

These and numerous other examples are only the tip of the iceberg of plagiarism and other scientific misconduct in academic communities which

are significantly bigger, more productive and richer than the Croatian one. It is precisely for this reason that we need to approach the problem of scientific fraud as soon as possible, seriously, systematically, impartially and responsibly.

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**Address for correspondence**  
Gordana Cerjan Letica  
University of Zagreb  
School of Dental Medicine  
Department of Social Sciences  
Gundulićeva 5, 10 000 Zagreb  
Croatia  
letica@sfzg.hr

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