Assessing tobacco regulation: moving beyond economists

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US presidents since Ronald Reagan have required regulatory agencies to conduct cost-benefit analyses of proposed regulations,[1] currently governed by Office of Management and Budget Circular A-4.[2] On its surface, requiring such analyses makes sense; after all, why burden businesses with costly regulations if there is little benefit to the public? There are, however, several problems with cost-benefit analysis, including the facts that the costs are often borne by different people than receive the benefits, the tendency of cost-benefit analysis to overstate costs and understate benefits and the pro-business bias within the economics profession.[3] The net effect of requiring cost-benefit analyses is to make it more difficult to develop, implement and defend regulations to protect public health and the environment.

These problems are clearly manifest in the cost-benefit analyses done for the proposed tobacco product regulations by the US Food and Drug Administration (FDA), first as part of its unsuccessful 2011 attempt to require graphic warning labels on cigarette packages[4] and its 2013 proposal to assert jurisdiction over non-cigarette tobacco products.[5] In both cases, the FDA grossly underestimated benefits and overstated costs.

We[6] criticised the cost-benefit analysis of the warning label rule[4] on the grounds that it discounted any health benefits by 50% to account for the lost 'consumer surplus' that would result from smokers being denied the pleasure of smoking. We noted that the idea of consumer surplus is grounded in rational choice theory, which is contradicted by a large body of empirical evidence from behavioural sciences that demonstrates that the assumptions of rational choice are inconsistent with complex multidimensional decisions, particularly smoking. Rational choice does not account for the roles of emotions, misperceptions, optimistic bias, regret and cognitive inefficiency that are germane to smoking, particularly because most smokers begin smoking in their youth. Indeed, continued application of a consumer surplus discount could undermine sensible policies to reduce tobacco use and other policies to promote public health.

The current issue of *Tobacco Control* contains a broader criticism of the warning label rule by a group of respected economists,[7] detailing how the FDA grossly underestimated the benefits of the warning label rule. While not accepting the conclusion that the assumptions underlying economic theory are so radically violated by smoking behaviour that consumer surplus does not apply to addictive behaviours,[6] they "conclude that nearly all of the 'lost pleasure' from tobacco use, as represented by conventionally measured consumer surplus, should not be included as a cost in the FDA analysis of the economic impact of tobacco regulations."[7] This conclusion is based on the argument that virtually all smokers begin as children who do not possess the consistent capacity to make rational decisions, thereby making the application of consumer surplus inappropriate.

Thus, both empirical behavioural science evidence and theoretical economic arguments have led to the same conclusion: the FDA should not be discounting the benefits of reduced smoking by the cost of lost pleasure (consumer surplus).

The silliness of the FDA's approach attracted attention of the media,[8 9] members of Congress[10] and even *Doonsbury* cartoonist Gary Trudeau.[11] Likely in response to this attention the Department of Health and Human Services convened an expert panel on "Inferring willingness to pay for policies that change the consumption of addictive goods" to advise the Department (which includes the FDA) on the appropriateness of FDA's application of the consumer surplus discount (box 1). While this is a step forward, every member of the panel is an economist, which means that interdisciplinary perspectives are being, by policy, ignored or minimised.

Another illustration of the difficulties with limiting the analysis to purely an economic perspective is illustrated by the economists' critique of the FDA in this issue of *Tobacco Control* when they state that

> We decided that it was most informative to separate smokers into those who became regular smokers before the legal age of smoking [18 years old in most places], and those who become regular smokers thereafter. *For the former group, society has clearly decided that the decision to initiate smoking is an irrational decision* and any changes in their conventionally-calculated consumer surplus resulting from changes in their tobacco use in response to [graphical health warning labels] or other actions should not be counted as a cost in the economic impact analysis of FDA's rules on tobacco…We refer to this as the 'principle of insufficient reason' approach and argue that the benefits to those who started using tobacco products regularly before 18 years of age and who quit in response to FDA regulatory actions should not have any offset for lost consumer surplus.[7] [emphasis added]

While appropriately noting that consumer surplus makes no sense when applied to smokers who started before they had the capacity to make rational decisions, it ignores the fact that the decision on what age to regulate smoking is a *political* not a *scientific* decision.

Indeed, recent advances in neuroscience suggest that the brain continues to mature into one's 20s,[12–14] well beyond the legal age to buy

Box 1 Members of the US Department of Health and Human Services Expert Panel, "Inferring Willingness to Pay for Policies that Change the Consumption of Addictive goods"

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Kenneth Warner
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Jim Hammitt
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cigarettes. These brain imaging studies also demonstrate that one of the last areas to mature are the areas critical for impulse control and critical thinking.[12 14] Moreover, empirical evidence consistently shows that adults cannot accurately predict their own emotional reactions and experiences, particularly when dealing with an addictive substance.[15 16]

Properly considering these issues and integrating them into its assessment of proposed regulations will require the FDA and the Department of Health and Human Services to move beyond the narrow view that only economists have standing to contribute to this analysis. At a minimum, behavioural scientists and neurobiologists need to be among the experts evaluating the government's approach to these issues.

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REFERENCES

1 Ackerman F, Heinzerling L. *Priceless: on knowing the price of everything and the value of nothing*. New York: The New Press, 2004.
2 Office of Management and Budget. *Circular A-4*. Washington DC: Office of Management and Budget, 2003.
3 Carpenter D, Moss DA. *Preventing regulatory capture: special interest influence and how to limit it*. New York: Cambridge University Press, 2013.
4 Food and Drug Administration, HHS. Required warnings for cigarette packages and advertisements. Final rule. *Fed Regist* 2011;76:36628–777.
5 US Food and Drug Administration. Deeming tobacco products to be subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act; regulations on the sale and distribution of tobacco products and required warning statements for tobacco products. *Fed Regist* 2013;79:23142–207.
6 Song AV, Brown P, Glantz SA. When health policy and empirical evidence collide: the case of cigarette package warning labels and economic consumer surplus. *Am J Public Health* 2014;104:e42–51.
7 Chaloupka F, Warner K, Acemoglu D, *et al*. An evaluation of FDA's analysis of the costs and benefits of the graphic warning lable regulation. *Tob Control* Published Online First: 31 Dec 2014. doi:10.1136/tobaccocontrol-2014-052022
8 Begley S. FDA calculates costs of lost enjoyment if e-cigarette rules prevent smoking, 2014.
9 Tavernise S. In new calculus on smoking, it's health gained vs. pleasure lost. *New York Times* 2014.
10 Blumenthal R, Waxman H, Durbin D, *et al*. Letter to Shuan Donovan, Howard Shelanski, Largaret Hamberg, Mitchell Zeller (6 Aug 2014). 2014; http://tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/u9/080714_FDA-OIRA%20CBA%20Letter%20%28final-signed%29.pdf
11 Trudeau G. Doonesbury Comic Strip (14 Sep 2014). 2014; http://doonesbury.washingtonpost.com/strip/archive/2014/09/14
12 Shaw P, Kabani NJ, Lerch JP, *et al*. Neurodevelopmental trajectories of the human cerebral cortex. *J Neurosci* 2008;28:3586–94.
13 Giedd JN, Blumenthal J, Jeffries NO, *et al*. Brain development during childhood and adolescence: a longitudinal MRI study. *Nat Neurosci* 1999;2:861–3.
14 Giedd JN. Structural magnetic resonance imaging of the adolescent brain. *Ann N Y Acad Sci* 2004;1021:77–85.
15 DiClemente CC, Prochaska JO. Self-change and therapy change of smoking behavior: a comparison of processes of change in cessation and maintenance. *Addict Behav* 1982;7:133–42.
16 Slovic P. *Smoking: risk, perception & policy*. Sage Publications, Inc, 2001.