![SCIMEP - science, media & the public logo]

AN OVERVIEW OF LAY AUDIENCES' PERCEPTIONS OF

GENOME EDITING WILDLIFE

May 2018

A REPORT OF THE SCIENCE, MEDIA, AND THE PUBLIC RESEARCH GROUP

DEPARTMENT OF LIFE SCIENCES COMMUNICATION

UNIVERSITY OF WISCONSIN-MADISON

http://scimep.wisc.edu

Suggested citation

Brossard, D., Scheufele, D. A., & Xenos, M. A. (2018). *An overview of lay audiences' perceptions of genome editing wildlife*. University of Wisconsin-Madison. Madison, WI: Department of Life Sciences Communication. Available from http://scimep.wisc.edu/projects/reports.

Prepared by Christopher D. Wirz and Emily L. Howell

Introduction

Recent advances with genetic technologies, like the development of CRISPR-Cas9, are expanding the capabilities for editing the genomes of plants and animals. While there are many positive potential applications for editing genes, such as curing genetic disorders, there are also concerns about the potential risks and unintended consequences. This report offers a brief examination of how lay audiences in the U.S. perceive the editing of wildlife genomes. The following data are from a representative survey of U.S. adults conducted December 2016 through January 2017.

Findings

U.S. adults largely agree (70.8 percent) that editing genes in wildlife populations messes with nature, while only 11.6 percent disagree[i]. However, the level of agreement is somewhat lower (59.4 percent) when respondents were asked if editing genes in wildlife populations allows humans to play god[ii]. Overall, Americans appear to see the process of gene editing as interfering with nature.

Another potential application of gene editing wildlife is to decrease, or even eliminate, invasive or non-native species that can have detrimental impacts on natural ecosystems. U.S. adults are similarly divided on the morality of this application with about 1 in 3 respondents disagreeing (37.6 percent) that editing genes to control invasive species is morally acceptable[iii]. However, Americans appear to be divided on the morality of editing the genes in wildlife, with an additional 30.1 percent neither agreeing nor disagreeing and 32.3 percent agreeing the practice is moral.

Conclusions

These results demonstrate how lay perceptions of gene editing are context-dependent. Views of the morality and whether or not gene editing messes with nature differed based on the population and goals being changed. The differences between subjects and intended outcomes should inform communication and policy efforts surrounding the applications of gene editing wildlife. Practitioners in this field need to be conscious of how they present the different applications to lay audiences, as they may trigger very different responses. Moving forward, experts, communicators, and policy makers should work to address and better understand these concerns.

About the survey

Participants were provided with the following definitions, available throughout the survey: "Genes are the basic unit of heredity – in other words, they are what plants, animals, and humans pass on to the next generation. Each gene is made up of a short piece of DNA", "DNA is the material that determines how a living thing will look and function", and "Gene editing is changing, adding, or removing the DNA in a gene to change the characteristics of living things (including plants, animals, and people). Recently, scientists have developed more efficient and cheaper tools for gene editing, such as the tool called CRISPR-Cas9. With tools like this, scientists can control whether or not any changes will be passed onto future generations". The survey was conducted online by YouGov from December 2016 through January 2017. The final sample was 1,600 U.S. adults (with a completion rate of 41.7 percent). Respondents were matched to a sampling frame to ensure sociodemographic representativeness for gender, age, race, education, political ideology, party identification, and political interest.

Suggested citation

Brossard, D., Scheufele, D. A., & Xenos, M. A. (2018). *An overview of lay audiences' perceptions of genome editing wildlife*. University of Wisconsin-Madison. Madison, WI: Department of Life Sciences Communication. Available from http://scimep.wisc.edu/projects/reports.

Specific Question Wordings

[i] The exact wording was "**Editing genes in wildlife populations messes with nature**". Level of agreement was measured with a 7-point scale (strongly disagree to strongly agree). Agreement includes the responses for "Strongly agree", "Agree", and "Somewhat agree", while disagreement includes the responses for "Strongly disagree", "Disagree", and "Somewhat disagree" (N = 1,577; missing values excluded).

[ii] The exact wording was "**Editing genes in wildlife populations allows humans to play god**". Level of agreement was measured with a 7-point scale (strongly disagree to strongly agree). Agreement includes the responses for "Strongly agree", "Agree", and "Somewhat agree", while disagreement includes the responses for "Strongly disagree", "Disagree", and "Somewhat disagree" (N = 1,585; missing values excluded).

[iii] The exact wording was "**Editing genes in wildlife to decrease or eliminate invasive species is morally acceptable**". Level of agreement was measured with a 7-point scale (strongly disagree to strongly agree). Agreement includes the responses for "Strongly agree", "Agree", and "Somewhat agree", while disagreement includes the responses for "Strongly disagree", "Disagree", and "Somewhat disagree" (N = 1,575; missing values excluded).