



The Concept of Weather Justice



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Introduction

The author's purpose in this poster manuscript is to introduce the concept of *weather justice*. This concept encompasses the inequities that exist in the exposure to severe or routine weather events and with the ways that such disparities are significant regarding moral, philosophical, psychological and physical health, economic, and other considerations.

Definition

Weather Justice – Awareness, concern, and action regarding the equitable and inclusive treatment of all people – regardless of race, ethnicity, culture, national origin, or socioeconomic status – with respect to their exposure to severe or extreme weather events or to the potential harmful effects of ordinary weather events.

Relationship to Other Types of Justice

Taxonomically, *weather justice* is a more specific exemplar of *environmental justice*. The latter term, however, has as its primary focus the impacts upon and degradations of environments by humans as this may disproportionately affect under-represented and marginalized people – who also may be encompassed by the concerns of *social justice*. *Climate justice*, which first appeared in print in 1999 rather exclusively concerns the principles of mitigation and adaptation to global climate change and to addressing the issues of distributional, procedural, and relational justice in managing the negative effects of climate change (Bruno, Karliner, & Brotsky 1999; Mary Robinson Foundation 2015). Weather justice differs from climate justice in that single extreme or routine events may have disproportionate effects upon people who are exposed to these events. Further, not all impactful weather events can be attributed to climate change (National Academies of Sciences 2016).

Examples of Weather Justice

Examples of weather justice exist with respect to: 1. Temperature, 2. Flooding, 3. Motor vehicle crashes (MVC's), and 4. Occupational exposure to outside conditions.

Temperature. Regarding high temperatures and heat-related health problems, many of the most vulnerable counties in the United States contained a significantly higher proportion of African American and Latinx residents (Wilson et al. 2010). Wilson's GIS-based analysis included concentrations of people in urban and suburban areas in the counties of South Carolina, Louisiana, Arkansas, Florida, Missouri, Maryland, Delaware, New Jersey, New York, Arizona, and California.

Flooding. Using both data from the United States Census and flood plain maps from the Federal Emergency Management agency, Qiang (2019) found that the people most likely to live in a region prone to flooding included: single mothers, people living at or below the poverty level, people who were unemployed, and those who did not possess insurance. In two studies of flood risks in Miami and Houston, researchers observed that inland flood risks are higher for neighborhoods in that included greater proportions of non-Hispanic African Americans, Hispanics, and subgroups of people from Colombia or Puerto Rico (Maldonado, Collins, Grineski and Chakraborty 2016; Montgomery & Chakraborty 2015).

Motor Vehicle Crashes (MVC). Motor vehicle crashes annual result in a high number of injuries and fatalities in the United States; a significant proportion of these crashes occur in inclement weather. Hilton (2006) has observed that during inclement weather (typically rain), African Americans, Hispanic Americans, and Native Americans experience disproportionately higher risks for weather-related MVC's (and for MVC fatalities) than people in other ethnic groups.

Occupational Exposure to Outside Conditions. The United States Bureau of Labor Statistics provides data regarding the intersection of the types of occupation and demographic variables (Torpey 2017). Using this data, the author discovered that Latinx men, and to some extent African American men and women are exposed to outside conditions (and the weather) as part of their occupations to a greater extent than people of other racial identifications (Torpey 2017).

Future Directions

It is also possible to enumerate other ways to apply the weather justice concept. First, to what extent do all people have access to actionable weather information (i. e., weather watches, warnings, observation data, forecasts, etc.) to plan their personal and work lives and to remain safe? Second and relatedly, to what extent does equity exist with respect to the availability of disaster planning, shelter facilities, and relief for extreme or routine weather events? Third, to

what extent should exposure to weather conditions be considered when economically valuing the compensation and benefits for work that occurs outside? The synthesis of findings from multiple research strands thus suggests that people experience uneven – and inequitable – exposure to weather in ways that pose mental and physical health risks and economic hardships, among other challenges.

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