Journal of Humanistic Mathematics

Volume 13 | Issue 1 January 2023

Where Does Mathematics Come From? Really, Where?

Mark Huber
Claremont McKenna College

Gizem Karaali
Pomona College

Follow this and additional works at: https://scholarship.claremont.edu/jhm

 Part of the Arts and Humanities Commons, and the Mathematics Commons

Recommended Citation

Mark Huber & Gizem Karaali, "Where Does Mathematics Come From? Really, Where?," *Journal of Humanistic Mathematics*, Volume 13 Issue 1 (January 2023), pages 1-3. DOI: 10.5642/jhummath.XJFO9325. Available at: https://scholarship.claremont.edu/jhm/vol13/iss1/2

©2023 by the authors. This work is licensed under a Creative Commons License.
JHM is an open access bi-annual journal sponsored by the Claremont Center for the Mathematical Sciences and published by the Claremont Colleges Library | ISSN 2159-8118 | http://scholarship.claremont.edu/jhm/

The editorial staff of JHM works hard to make sure the scholarship disseminated in JHM is accurate and upholds professional ethical guidelines. However the views and opinions expressed in each published manuscript belong exclusively to the individual contributor(s). The publisher and the editors do not endorse or accept responsibility for them. See https://scholarship.claremont.edu/jhm/policies.html for more information.

Where Does Mathematics Come From? Really, Where?

Mark Huber

Department of Mathematical Sciences, Claremont McKenna College, California, USA
mhuber@cmc.edu

Gizem Karaali

Department of Mathematics, Pomona College, California, USA
gizem.karaali@pomona.edu

Doing mathematics requires creativity, put towards the development of new proofs, new concepts, and new ways of working. It also requires certain environmental conditions. This issue offers a multitude of ways to see beneath the surface of mathematical practice, exploring the complementary questions of how math comes to be and where it does when it does.

We start with Juan Fernández González and Dirk Schlimm, who give us an exploration of a new straightedge and compass construction. The timeline of the result and the twists and turns that lead to the method are presented through an interview with the creator. Next, Omid Katin-Zadeh, Zahra Eskandari, and Danyal Farsani consider what role metaphors and gestures play in understanding mathematics.

Looking back on your mathematical education, you can probably viscerally *feel* the places where you learned certain ideas. Valentin A. B. Küchle, Shiv S. Karunakaran, Mariana Levin, John P. Smith III, Sarah Castle, Jihye Hwang, Yaomingxin Lu, and Robert A. Elmore consider how constructs from humanistic geography inform mathematics classes and can help us envision the types of places where math can freely blossom.

We then go to Italy in the fourteenth century, another place where math flourished. Double-entry bookkeeping changed the accounting world back then, and Graziano Gentili, Luisa Simonutti, and Daniele Struppa walk us through the mathematical inspirations for this technological breakthrough.

In the next article, Gila Hanna, Brendan P. Larvor, and Xiaoheng (Kitty) Yan show how interactive theorem provers can assist students in learning how to build effective proofs.

Thomas Hillen then examines musical scales through a novel binary representation that leads to insight into their construction, starting a musical thread in this January issue.

This new year brings us to a new, uncertain phase of the COVID pandemic. As a result, we are continuing our special column about Math in the Time of COVID. In this issue, Wendy Ann Forbes and Joyce Mgombelo begin with their local experiences in Ontario, and offer us a way to move forward while still in the shadow of the pandemic.

Marcio Luis Ferreira Nascimento reminds us in his Exposition about the dangers of mistaking correlation for causation by examining old sayings of storks and babies.

In the first World of Mathematics article of the issue, Toby S C Peres explores the connections between mathematics and literature and argues that the relationship seems to be mostly one way. Next, Osvaldo Marrero gives us a tale of the creation of a theorem whose origin lies in a simple question. Szilárd Svitek then gives us an ode to that most important indicator of nothing: zero.

Erin Griesenauer describes the process of teaching a general Human Experience course, and how it ended up changing how she taught math courses.

Taking us back to the world of music, Cristina Carr, Daniel Chioffi, Maya Glenn, Stefan Nita, Vlad Nita, and Bogdan Nita show how the mathematics of music informs the design of the harp, and how a future harp might look.

Using Bloom's Taxonomy as a guide, Manmohan Kaur presents ways of creating fun mathematical outreach activities. Richard Delaware then gives us a poem that is an embodiment of a point set topological proof, suggesting that sometimes a shift in perspective is what leads us to the creation or the understanding of a proof.

Kien H. Lim and Anthony Matsuura consider how kindness in mathematics education can benefit not just the student but the teacher as well. Sarah Voss closes this section with a discussion of *mathaphors*.

There are two articles for our Memories & Remembrances section in this issue. Maohua Le, with the help of Yongzhong Hu, narrates the experiences of a mathematician born in China in 1952. Elena Anne Corie Marchisotto remembers Anneli Lax through stories and pictures.

Judith Grabiner reviews the book *Algebra the Beautiful* by G. Arnell Williams. As she notes, the author does have his work cut out for him.

Last issue we put out a call for poems celebrating mathematical constants other than that ubiquitous half-circle measure, and you came through! Our poetry folder contains poems by Robin Chapman, John Donoghue, Kevin Farey, Larry Lesser, and E. R. Lutken, exploring the many other wonderful constants.

The remainder of the poetry section includes an eclectic selection of poems by Joël A. Doat, Tony Bedenikovic, Kim Regnier Jongerius, Virgilio A. Rivas, and Scott W. Williams.

There are two works of fiction in this issue. Vijay Fafat brings us a mathematical creation story of Biblical proportions, and Audrey Nasar takes us to a local, downtown (Astor Place) kind of paradox.

Finally, a poem/artwork combination by Sarah Glaz and Mark Sanders based on the life of Hypatia of Alexandria closes our issue.

We wish you a happy new year and hope that you enjoy this eclectic issue!