THEATRE REVIEW

The Mathematics of Being Human

Reviewed by Stephen Abbott

The Mathematics of Being Human

A new play by Michele Osherow and Manil Suri

What plane figures can be constructed using only a compass and an unmarked straightedge?

What human insights can be constructed using only fourteen lines of iambic pentameter and a rigid rhyme scheme?

What do these two challenges have in common? Quite a bit, it would seem, judging from their parallel phrasing. Both are about searches for universal truths, and both implicitly recognize the way carefully crafted restrictions can serve as a catalyst to creativity and augment the expressive power of the medium.

But of course the two challenges are also very different. To viscerally experience this difference, spend some time meditating on Edna St. Vincent Millay's sonnet which famously begins:

Euclid alone has looked on Beauty bare.

Just like a proof from the *Elements*, this poem's artful beauty is closely tied to the way its strict formal requirements interact with the content. But the lasting durability of Millay's sonnet also hinges on a degree of ambiguity in what it communicates. (Why a "holy, terrible day"?) With continued reflection, Euclid's propositions grow sharper and more austere, but it is arguably the opposite quality that distinguishes a great poem from a charming limerick or a work of art from a simple illustration.

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Performance photos by Marlayna Demond for UMBC.

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Inevitably, everyone who sets off to explore the intersection of science and art finds themselves confronting versions of this tension. Despite being well-traveled territory, this old debate is given a fresh and contemporary analysis in *The Mathematics of Being Human*, a recent play co-written by Michele Osherow and Manil Suri. The two authors are colleagues at the

University of Maryland, Baltimore County (UMBC). Osherow is a professor of English and director of the Judaic Studies program, but she also boasts a strong connection to the theater. This includes extensive experience as a professional actor and dramaturg, as well as ongoing scholarly work on Shakespeare and Renaissance literature. Suri is a mathematician and widely published writer whose novels have garnered enthusiastic praise in the United States, India, and beyond.

The storyline for *The Mathematics of Being Human* takes its premise and basic scaffolding from the real-life collaboration between Suri and Osherow, who several years ago co-taught an interdisciplinary seminar to an incoming group of UMBC first-year students. The line between fact and fiction in the play is hard to discern, but it is probably best to assume that the storytelling is highly inventive. This mindset is more challenging than it sounds, however, because in performances thus far the two authors have also been cast as the leads, essentially playing freely adapted versions of themselves. In the first scene we encounter two professors—mathematician Mike Pearson (played by Suri) and literature professor Naomi

Left to right: Chaz Atkinson, Manil Suri, Michele Osherow, and Savannah Chamberlain during a performance on November 4, 2014, at the University of Maryland, Baltimore County (UMBC).

Kessler (played by Osherow)—who like their real-life counterparts are to teach an interdisciplinary seminar in the upcoming term. But the autobiographical inspirations for Pearson and Kessler are not too strong, let's hope, because by the second scene the two fictional academics are rudely rejecting each other's suggestions for the syllabus by honking old-fashioned party horns:

PEARSON: "Logicomix, An Epic Search for Truth".

KESSLER: The comic book? That one, I saw. All those miserable logicians go nuts. Depressing [Honk!] (*That's a no.*)

PEARSON: Wait, let me try again. "Flatland".

KESSLER: [Honk!]

PEARSON: Alright, knock it off—

KESSLER: "A Beautiful M—

PEARSON: [Honk!]

KESSLER: At least let me finish the t—

PEARSON: [Honk!] "From Euclid to—

KESSLER: [Honk!] "Good Will—

PEARSON: [Honk!]

The scene is very funny, and so are many to follow. More than anything else it is this mixture of comic self-mockery with an informed authenticity that makes the play succeed. The authenticity is the primary ingredient. Osherow and Suri are accomplished scholars and teachers who brought a full-bodied commitment to constructing their original course—at least that is the impression one gets from watching the play. Many of the usual math-for-poets suspects are here—irrational numbers, pi, the Monty Hall Problem, fractals—but there

are also some fresh surprises. The script includes a tour of Oulipo and an insightful encounter with the Millay sonnet alluded to in the opening paragraph of this review. The play even manages to incorporate Shakespeare through the tragedy of *King Lear*. *King Lear* opens with the dilemma of how Lear should divide his kingdom among his three daughters. This simple-sounding division problem is Kessler's entry point for attempting a bold mathematical reading of the whole play centered around the question of whether only "nothing will come of nothing," as Lear famously proposes. Playing his role of resident philistine to the hilt, an exasperated Pearson finally takes out his frustrations by assigning the class the "King Lear Problem" of trisecting an angle with only straightedge and compass.

Which brings us around again to the play's ever-present sense of humor. In bringing their coteaching experience to the stage, the authors made the decision to create a steadily rising sense of animosity between the two professors at the front of the classroom. And make no mistake, these two are not Shakespeare's Benedict and Beatrice, whose verbal jousting is a smoke screen for some latent affection. With each passing class, Pearson and Kessler become steadily less tolerant of each other, which could be off-putting if it weren't so entertaining. When Pearson grows animated discussing large supercomputers crunching out millions of digits of pi, Kessler is quick to deconstruct it as the "mathematical performance of masculinity." When Kessler attempts to explore why mathematicians are often portrayed as insane, Pearson helpfully points out that "we don't *all* go mad. At least not until we go 'interdisciplinary'."

Another useful way the play helps its audience deal with its ornery antagonists is by adding two good-natured students to the cast (played wonderfully by UMBC undergraduates Savannah Chamberlain and Chaz Atkinson). The two first-years watch with intrigue and amusement as the course they are taking crumbles into chaos, and there is a way in which their generational perspective serves as an effective counterpoint to that of their obstinate instructors. Without giving too much away, the script's most satisfying theatrical moment comes toward the end of the

Playwrights Manil Suri and Michele Osherow square off during a performance on November 4, 2014, at the University of Maryland, Baltimore County (UMBC).

Discussing π . Left to right: Chaz Atkinson, Manil Suri, Michele Osherow, and Savannah Chamberlain during a performance on November 4, 2014, at the University of Maryland, Baltimore County (UMBC).

play when the students essentially succeed in doing what their teachers could not.

In the vast constellation of discussions about the sciences and the humanities, a good candidate for the pole star is C. P. Snow's seminal 1959 Rede Lecture, "The Two Cultures". Among many other observations, Snow notes that scientists tend to be better informed about the humanities than humanists are about science. While this may still be the case in terms of absolute cross-cultural knowledge, there is a sense that humanists today are much more respectful of science than they were, and they are arguably ahead of the game in terms of understanding why a multidisciplinary orientation actually matters. This is certainly the case in *The Mathematics of Being Human*. Nobody's hands are clean in this fight, but of the play's two combatants, Kessler the humanist occupies the more sympathetic high ground. It's not that Pearson is fundamentally wrong in his defensive tirades. Yes, mathematics needs to be deep to be properly appreciated, and yes, every attempt to drag mathematics into an analogy inevitably results in some kind of deformation. It is just that Pearson doesn't stop his ranting long enough to see that the same might be true of poetry. Kessler, for her part, is sincere in her recognition that mathematics is both challenging and intrinsically valuable. But when it comes to understanding nature, she is open-minded enough to see that math and poetry are each engaged in their own type of approximations. "I resent your monopoly of the word 'precision'," she exclaims in one of her stronger rejoinders.

In Tom Stoppard's landmark 1993 play *Arcadia* there is a memorable rhetorical fireworks display between a blustery Byron scholar and a more even-tempered and thoughtful mathematician. By reversing the personalities of the scientist and the humanist, at least to some degree, *The Mathematics of Being Human* sounds an important cautionary note to the mathematicians in the audience against any feeling of superiority in the academic culture war. No one has a monopoly on viewing "Beauty bare," the play tells us. It's all hard, it's all deep, and an important component to understanding our own chosen avenue of

study is to explore the ways it is, or isn't, different from the avenues our colleagues in the next building have chosen.

The year 2015 was a busy one for the play. A warmly received performance at the winter 2015 Joint Meetings in San Antonio was followed up by performances at the National Museum of Mathematics in March and the Bridges conference of math and art in Baltimore in July. Independent productions (with a new cast) are scheduled for 2016 at the University of Pittsburgh and also in New Delhi. There is a reason why the venues are academic in nature. Witty and lighthearted, *The Mathematics of Being Human* is at its core a heady piece that engages its audience's minds without making any sustained attempt to engage its hearts. This is not so much a flaw as it is a by-product of the script's real-life origins. It's not clear how well the play would hold up as a free-standing piece of theater, but it would certainly be an entertaining addition to any symposium about science and art. The majority of the performances thus far have been for mathematicians, but the script is very much aimed at a general audience. To their credit, the playwrights largely refrain from doing anything too didactic—in terms of the mathematics or the literature—but the allusions to Euclid and Shakespeare and Stoppard and Snow are dense enough that some familiarity with the intellectual terrain is a prerequisite to appreciate the show.

So is this play an argument for or against interdisciplinary teaching? Like a good piece of art, *The Mathematics of Being Human* doesn't make this obvious or absolute for its viewers. "Was there any advantage to coming at things from such different perspectives?" Kessler asks in the play's denouement. On this question, at least, the playwrights agree to defer to Shakespeare's poetry over Euclid's precision, pointing out that while the search is noble, some answers are destined to forever remain part of "the mystery of things."

Requests to mount productions of the play are welcomed by the authors and can be addressed to Manil Suri at suri@umbc.edu.

A King Lear moment. Left to right: Chaz Atkinson, Manil Suri, Michele Osherow, and Savannah Chamberlain during a performance on November 4, 2014, at the University of Maryland, Baltimore County (UMBC).