Letters to the Editor

Statement from Notices Editor

The article by Thomas L. Saaty and H. J. Zoffer that appeared in the November 2013 issue of the Notices has engendered considerable discussion. As chief editor of the Notices, I made the decision to publish the piece. With several favorable reviews in hand, I felt that this represented a new sort of scholarship and an interesting direction in the application of mathematics to real-world problems. In spite of the strong emotions connected with issues in the Middle East, I felt that these were ideas worth examining and discussing. Of course I knew that readers would react, but nobody anticipated the spirited outburst that we have received.

Some readers have suggested that the Saaty/Zoffer article is less than objective; others have objected to the choice of graphics. These are valid concerns, and we need mechanisms to detect them in a timely fashion. AMS President David Vogan appointed a Presidential Advisory Committee to make recommendations in this regard. The committee created a set of new editorial guidelines, addressing how articles are refereed, particularly articles with a nonmathematical component, and the role of the Notices Editorial Board. The implementation of the guidelines will increase input and oversight by the board and will, I believe, maintain a high level of quality for the material we publish.

To my mind the most important issue here is the integrity of the Notices. I want it to be an exciting and vibrant organ for our professional so- ciety, but I also want it to be a feature of our professional lives of which we can all be proud and with which we are all comfortable. It is not my job to aggravate already existing schisms and wounds. It is instead my task to showcase new mathematics that will be of broad interest and stimulate new learning. That will be our focus in the future.

Here we present a selection of Letters to the Editor that provide a good representation of the many reactions to the Saaty/Zoffer article. Many of the issues discussed in these letters are political ones that ordi- narily would not be suitable for the Notices. But in this extraordinary circumstance, it is important to let the critics have their say. We do not plan to prolong the discussion in future issues of the Notices.

—Steven G. Krantz
Editor

As one with children and grandchildren living in Israel, I am as desirous as anyone for a peace treaty between Israel and the Palestinians. The article “Principles for implementing a potential solution to the Middle East conflict”, which appeared in the November 2013 Notices, proposes methods to resolve the conflict between Israel and the Palestinians. While I am dubious that these methods would be any more successful than all previous attempts, the article does seem a reasonably well-balanced attempt to find a middle path between the goals of Israelis and Palestinians. The article is accompanied by five illustrations. The first, a map of the territories in hand, I felt that this represented a new sort of scholarship and an interesting direction in the application of mathematics to real-world problems. In spite of the strong emotions connected with issues in the Middle East, I felt that these were ideas worth examining and discussing. Of course I knew that readers would react, but nobody anticipated the spirited outburst that we have received.

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—Steven G. Krantz
Editor

I have no desire to have the conflict between Palestinians and Israelis taking up valuable space in the Notices, but if the conflict is to be discussed, let it be done in a fair and impartial way.

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(Received October 28, 2013)

I am appalled by the decision of editors of the Notices to accept for publication the paper “Principles for implementing a potential solution to the Middle East conflict”, authored by Thomas L. Saaty and H. J. Zoffer in the November 2013 issue.

I used to believe that the Notices was a journal of the mathematical community and so published papers connected to mathematics or to the life of the mathematical community. The paper in question is neither.

I think there is no need to explain to a professional mathematician that an arbitrary choice of issues and an arbitrary assignment of numerical values can justify any result the author wishes.

A similar type of “mathematical modeling” was very popular in the now-nonexistent USSR, where I happened to live for some thirty years. Let me share with you my personal experience with this method of research. Some thirty-five years ago I was approached by a distant relative who worked in a Research Economics Institute in Moscow. She told me that her task was to construct a mathematical model that would “mathematically” justify doubling the price of meat (the prices were regulated by the government, of course) and asked me for mathematical advice.

I found a hint in the paper by Saaty and Zoffer that may indicate that the referee was not very fond of the mathematical content of the paper. Therefore, am I allowed to suggest
that it was not the mathematical content of the paper but the beautiful illustrations that attracted the editors?\footnote{As I was later informed by the editors, my suggestion was incorrect. The illustrations were added at the request of the Notices editor Steven Krantz after the article was accepted for publication.}

I think that the management of Notices has to explain to the mathematical community how publication of the mentioned article became possible. Otherwise there is a danger that Notices will cease to be considered as a journal worth reading.

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The article by Professors Saaty and Zoffer [Notices, November 2013] displays some of the problems in applying decision support techniques to a complex conflict.

The list of outstanding issues and the "Pittsburgh principles" are incomplete. They include many references to Palestinian refugees, but none to the similar number of Jewish refugees from Arab countries. The article might have profited by showing the tent camps that housed Jewish refugees from countries like Yemen and Iraq but were uplifted into development towns. Instead, it ran photos of Palestinian refugee camps that still exist due to ongoing refusal by countries like Lebanon to uplift Arab refugees. Such one-sidedness not only rewards manipulation of Arab refugees, it also punishes Israel for absorbing their Jewish counterparts. It will invariably be abused as a pretext for further conflict under the guise that no "just solution" has been found.

To wit, Palestinian President Mahmoud Abbas continues to demand that Palestinian refugees and their descendants be resettled in pre-1967 Israel and not in the West Bank. This makes a mockery of a two-state solution. It denies the rights of Jewish refugees from Arab countries. It sidesteps Arab responsibility for starting the wars that led to BOTH refugee issues, and it runs counter to the way every other population exchange has been resolved.

The imbalance on refugees is not the only one. The article talks of a "retributive conflict" in which "both sides profess to desiring a solution but are equally committed to inflicting pain on the other party." This ignores the fact that Jews repeatedly accepted a two-state solution prior to and in 1948, but the Arab world responded with successive wars. Moreover, Israeli territorial concessions have not led to a comprehensive peace, instead amplifying calls for Israel to be dismantled.

At least the final list of "most important" Palestinian concessions refers to a major Israeli concern. Namely, that if they handed over the West Bank and removed all Jews (aka "settlers") from East Jerusalem, where they were a majority until the 1920s riots, thereby returning them to the very insecure situation before 1967, the conflict would not end. Statements by leading Palestinian Authority officials, let alone those of Hamas and other countries in the region, make clear that this is a very real concern. The core issue in the conflict remains Arab refusal to accept a permanent Israel behind any boundaries.

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The November 2013 issue of the Notices devotes its cover and 22 pages to "Principles for implementing a potential solution to the Middle East conflict", by Thomas L. Saaty and H. J. Zoffer. Given the Syrian civil war, with 120,000 dead and 2 million refugees, or the failed Egyptian revolution, it is bizarre that the "Middle East conflict" mentioned in the title actually refers to the Israeli-Palestinian conflict.

In any case, the authors' "Analytic Hierarchy Process" (AHP) considers responses of Israeli and Palestinian participants to a set of "outstanding issues" and then balances costs and benefits of concessions by each side to find a "fair solution" to the conflict. Remarkably, the article does not give the number of participants or how they are chosen, something which could produce almost any result.

Further, choosing "outstanding issues" requires a deep knowledge of the conflict, which is clearly not the case here. For example, the Golan Heights are listed as an unresolved "Geographic and Demographic" issue. The Golan Heights are not part of the Israeli-Palestinian conflict. They are claimed by Syria and Lebanon and have never been claimed by the Palestinians.

Another strange choice of issues is the Israeli concession to "Abolish the Law of Return". This refers to the automatic grant of Israeli citizenship to Jews around the world—something which reflects the goal of providing safe haven to Jewish refugees. This issue has been a matter of internal Israeli debate; however, it has never been an issue in peace negotiations. Presumably, a two-state solution would make the law of return an Israeli matter.

Consider another example—the Israeli concession to "solve the Palestinian refugee problem in a just and agreed upon manner." This is not a concession—it is an oft-repeated slogan. The refugee problem is one of the most important issues in the Israeli-Palestinian negotiations, and the slogan should be replaced by a clearly articulated concession.

Finally, the accompanying photographs are tendentious. On the cover of the Notices is a photo of a four-story building decorated with several wall posters typically used to memorialize suicide bombers (!). Why not a photograph of the aftermath of a café bombing by such a Palestinian-declared "martyr"? Another photo titled "Palestinian refugee camps in Lebanon" appears to be of an established urban environment, which in another context might be called a "neighborhood". The term "refugee camp" should evoke the terrible conditions suffered by refugees struggling...
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this winter in Lebanon and Jordan or the millions of refugees elsewhere in the world.

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(Received November 13, 2013)

The article “Principles for implementing a potential solution to the Middle East conflict” by Saaty and Zoffer, which appeared in the November 2013 issue of the Notices, attempts to use mathematics to suggest policy decisions, and this letter is aimed at raising some questions about that effort. It should be noted that the present Middle East conflict which has, according to supposedly reliable estimates, cost 120,000 lives already is not the subject of this article. Rather, it concerns the dispute between Israel and the quasi-governments of the Gaza Strip and the “West Bank” (which Israel calls “Judea and Samaria”).

When two entities of any kind are involved in a dispute, there are halloved methods for resolving it that are based on the fundamental fact that each issue or factor can have different relative significance to those entities. If one isolates these factors and understands their rankings in importance by each of the two sides, it often becomes possible to find a resolution of the problem in which each side gets its way on the issues most important to it, conceding on those that it cares less about. In this way both sides can consider the resolution a victory for itself, and the conflict can disappear, as if by magic, with both sides happy about it.

The approach of this paper has a similar goal, but it does not deal with actual issues. Instead it lists what it terms “concessions” by each side. The mathematical content consists of description of an iterative scheme for obtaining an optimal resolution based upon assumptions about the relative importance of the various concessions to the two sides.

Unfortunately the problems of the paper have little to do with the mathematics but involve the zany and almost comic choices of the “con-

cessions” and even with the choice of antagonists in the basic dispute.

The basic objection to this paper can be stated very simply. The only Palestinian concessions that involve material action are stopping terrorist activity against Israel and stopping the teaching of hate against Jews in Palestinian schools. Many of the concessions listed for Israel, if made by the Israeli government, which respects its commitments, are very significant and jeopardize its very existence. As a practical matter, however, making any concession at all in exchange for a promise of stopping terrorist action actually encourages future terrorist action, made in the hopes of extracting more concessions for again promising to stop them. It therefore solves no problem and in the long run postpones the prospects of peace.

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(Received December 2, 2013)

Response from the Authors

We would like to respond to several concerns raised in the foregoing letters.

We are less than objective in our reporting. Nothing in the article represents our opinions. The Analytic Hierarchy Process (AHP) allows every position to be exposed, no matter how unhappy it makes one side. Negative and positive reactions are measured through mathematically-based weights. There are no pre-discussion agreements. Everything is on the table, wise or unwise, sensible or ridiculous. Mathematics sorts it all out.

The participants in the study are not identified, nor the method of selection indicated. There are a limited number of participants, equally representative of each side, constituting a wide range of extremely credible citizens in both communities and including ambassadors, high-ranking military officers, members of the legislatures, prominent academics, editors of major journals, etc. The participants believe their opinions reflect about 70 percent of the people in their respective communities. Their identities must remain confidential so that their judgments can reflect their true opinions and not be subject to public review.

The concessions do or do not reflect appropriate positions as viewed by one side or the other. We have nothing to do with the concessions. We ask participants to indicate every relevant issue they know or have heard of, what concessions the other side needs to make, and what concessions they are prepared to make. Through a process of trade-offs detailed in the article, we seek to group concessions such that the cost and benefits to each side are approximately equal. We do not attempt to seek out what is right or wrong, important or trivial. The beauty of the mathematics is that outlier positions either may not trade off, or the judgments made will reflect strong opinions of the participants. Issues that are not germane will be washed out.

The choice of graphics. The editor of Notices asked us to provide some graphics. We chose a few pictures that identify the conflict as being the Israeli-Palestinian matter. The graphics are intended to make the journal attractive and interesting.

We refer to the Israeli-Palestinian conflict as the “Middle East Conflict”, ignoring the Syrian situation and other middle eastern controversies. We plead guilty to this. We started this process some years ago when reference to the Middle East conflict automatically meant the Israeli-Palestinian situation.

The Pittsburgh Principles are not detailed enough. This is a fair criticism. Starting in late January, 2014, all of the Principles are being examined from the point of view of implementability, and specific approaches will be outlined. The participants believe the Pittsburgh Principles represent a breakthrough even in their pre-implementation stage.

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(Received January 15, 2014)
The Purpose of Rigor, Revisited

This is in response to the letters in the Notices, Vol. 61, No. 2, February 2014, pp. 128-129, entitled “Outdoing the Soviets”, “The Purpose of Rigor”, and “Reply from Zeilberger”.

I would like to mention the widely used Newton-Leibniz definition of derivative: \( v(t) = dx/dt = \lim [x(t + dt) - x(t)] / dt \), as \( dt > 0 \) tends to zero.

If \( x(t) \) is a distance in motion or some parameter of a process, then \( v(t) \) means the velocity. The value \( v(t) \) does not exist at the moment \( t \) of its definition and thus cannot be measured or computed, since at any moment \( t \) the value \( x(t + dt) \) does not yet exist if \( dt > 0 \). This means that all classical theories for ODEs, PDEs, etc., are operating with unreal values that do not exist at the time \( t \) of their definition, although they can be postulated as some future increments tending to zero.

All mathematical theories based on right derivatives are just frozen mental constructions that can be used as approximations to reality at low velocities but fail at high velocities and small values of \( x(t) \) considered in quantum mechanics and elsewhere.

In reality, the velocity is realized as the left derivative \( v(t) = \lim [x(t) - x(t - dt)] / dt \), \( dt > 0 \) and should be used in this way in the theory and applications of mathematics.

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(Received January 26, 2014)

Statistics Needs Math

Charles Radin’s letter (“Do Scientists Need Math?”) in the November 2013 Notices concerning the disagreement between Wilson and Frenkel mentions that “many biological and social scientists do not need much mathematics beyond statistics.” I agree. However, in order to understand statistical modeling, such scientists need to understand multivariable calculus, linear algebra, and probability. For example, the workhorse of applied statistics, multiple linear regression, requires understanding random vectors and the difference between stochastic independence and linear independence. This requires at least a math minor.

The reason that understanding is required, beyond which buttons to push in a statistical software package, is that the hypotheses of the theorems that are being used are infrequently satisfied in actual applications. The user must then decide to what degree the conclusions of such theorems should still be accepted. Lack of such understanding is a major reason why so many mistakes have been made in applying statistics. Examples illustrating this point appear in two critiques that have recently been in the news: Lyons, R. “The spread of evidence-poor medicine via flawed social-network analysis”, Statistics, Politics, Policy, 2(1) (2011), Article 2. (27 pp.) DOI: 10.2202/2151-7509.1024, and Myhrvold, N.P. (2013) “Revisiting the Estimation of Dinosaur Growth Rates”, PLoS ONE 8(12): e81917. doi:10.1371/journal.pone.0081917.

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(Received December 23, 2013)

Intellectual Needs in School Geometry

This is about Professor G. Harel’s article on the Common Core State Standards for geometry (Notices, January 2014). Professor Harel is concerned about these standards’ “lack of attention to students’ intellectual needs”. Such needs have in fact been laid out clearly on pp. 258-259 of H. Wu, Pre-Algebra, http://math.berkeley.edu/~wu/Pre-Algebra.pdf. Briefly, if students wanted to compare two triangles to see if they are “the same”, they would realize the need to find ways to move the plane around. Hence the need for rotations, reflections, and translations.

The reference to Pre-Algebra is not an accident. This is the same document as “Wu, H., ‘Lecture Notes for the 2009 Pre-Algebra Institute’, September 15, 2009” on page 92 of the Common Core State Standards for Mathematics. The writers of the latter document knew about this intellectual need for sure.

Professor Harel is unhappy about what he terms the “standard approach” to the Common Core in the curriculum materials developed, and well he should be. But I think it is wrong to ascribe the perceived curricular defects to some inherent defects of the geometry standards of the Common Core. The truth is that, given the deplorable state of school math textbooks, any approach to geometry (including Professor Harel’s own) will be perverted in the marketplace.

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Corrections

The news item announcing the winners of the 2013 International Mathematical Olympiad (Notices, November 2013, p. 1344) contained two errors. Gold medal winner Mark Sellke’s name was misspelled and the location of his high school should have been listed as West Lafayette, Indiana.

—Russell Lyons

The February 2014 issue of the Notices carried my review of Théorème vivant by Cédric Villani. The review misstated the name of one of Villani’s collaborators. His name is Clément Mouhot, not Clément Boutot. I apologize for the mistake; credit should be given where it is due, in particular for such a nice theorem.

—Jacques Hurtubise