

GADFLY

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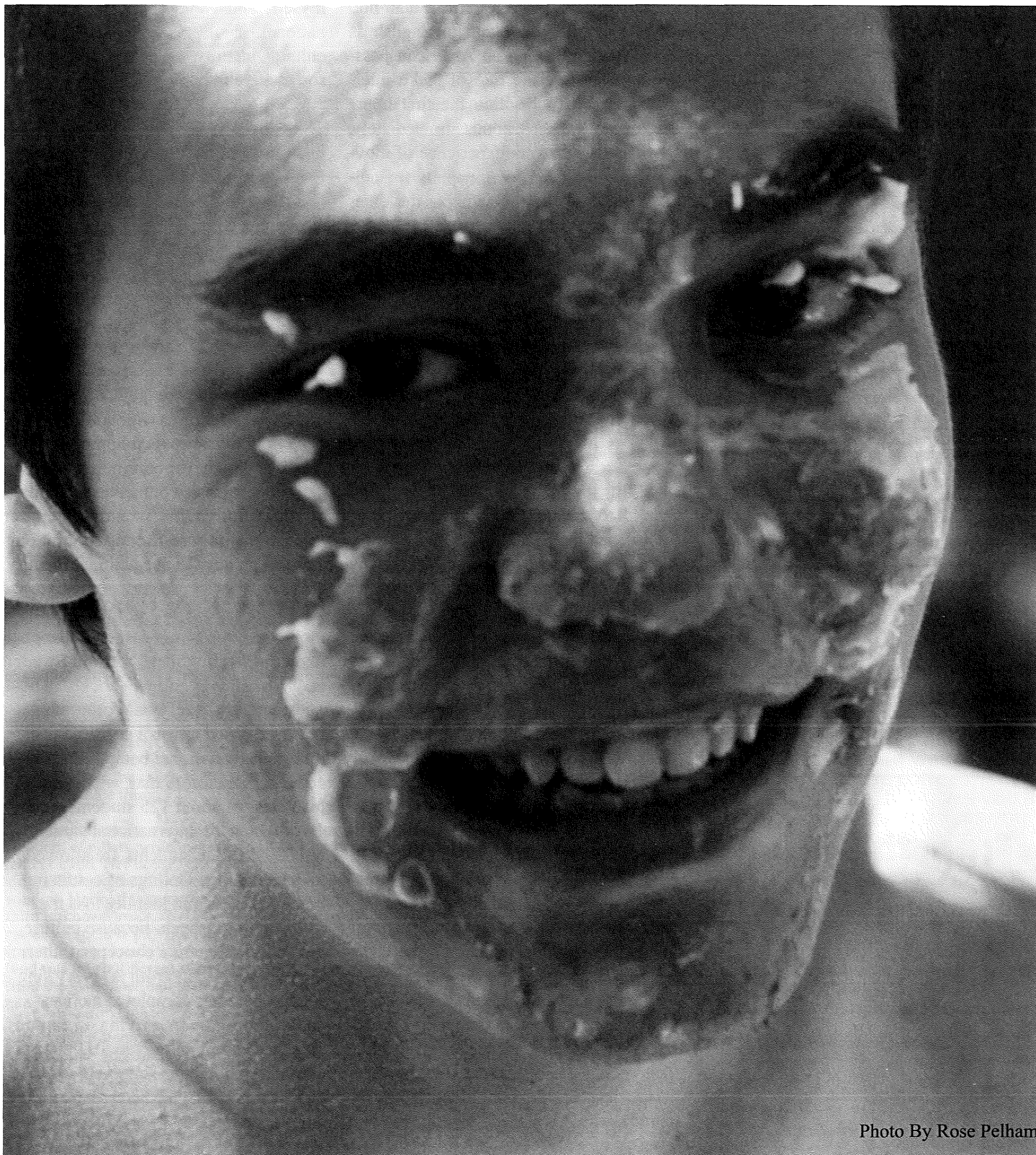


Photo By Rose Pelham

THE STUDENT NEWSPAPER
OF ST. JOHN'S COLLEGE

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Founded in 1980, the Gadfly is the student newsmagazine distributed to over 600 students, faculty, and staff of the Annapolis campus.

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From the Editors:

Here at the Gadfly, we take the safety of our readers very seriously. We have recently received many concerns about the Halloween issue. Although reviews have in the past been mostly positive, we have received too many accounts to ignore of readers mysteriously disappearing, having recurring nightmares, and being baked into dining hall pies. Although these are most likely unrelated to reading our paper, to err on the side of caution, will not be doing a Halloween issue this year.

-The Gadfly

International Perspective: Culture Shock

Elizabeth Morell A'20

On paper, I'm more American than not. That's why having claim to English as a first language and an American passport earned me the title of "fake international student" within the first hours of my arrival on campus. Immediately, it was clear that my experience of moving from Sweden to Annapolis for college wouldn't be the same as the other international students around me. Sure, I made the international flight that took me from one country to another, but the usual learning curve of American customs, humour and political banter had already been dampened, because, technically, those customs were my own. Yet, simultaneously, I found myself flipping through the pages of the international students handbook learning about "tipping at restaurants" and "how to post letters" for the first time. On top of this, I was all too aware that my mispronounced words and incomprehensible uses of idioms were bound to stand out next to my lack of a foreign accent. Scenario after scenario arose in which it was frustratingly clear that I wasn't American in the sense of all the cultural implications that the term embraces. Yet, I was, wasn't I?

These questions brought me to observe the polysemantic behaviour of the word we connect our nationality to. In the most typical sense, it communicates my geographical origin, while also communicating my cultural origin. For example, calling myself American would imply that both my national identity and my cultural identity are as an American. Normally, these factors match up. That's because most people live their entire lives without spending extended periods of time in a country other than their country of origin, keeping their cultural identity from being combined with one that does not match their national identity. But for people who have made that move, like

myself, and can no longer relate their national identity immediately to their cultural identity, will always felt drawn somewhere in between the two.

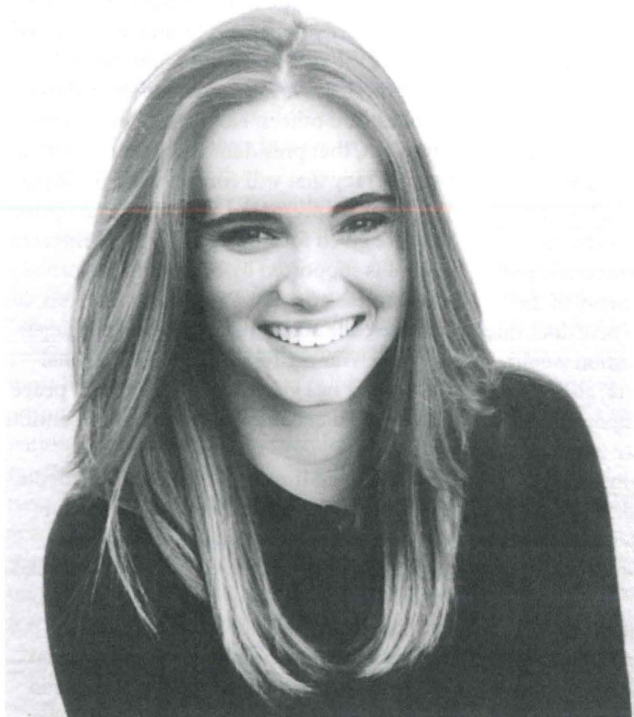
This, however, isn't the problem. The problem is in the assumption that the lines separating cultures exist only between countries. The truth is, discovering a culture foreign to your own doesn't demand an international move. Most people need only walk out of their front door to interact with a new culture. Because of this, it seems that the average person transitions between multiple cultures every day. For anyone would acknowledge that the norms and social structures which affect our behaviour alter between home, school, work, or whichever communities we choose to immerse ourselves in. Thus, in consideration of this, wouldn't it appear to be immensely restricting to limit our cultural identity to our national identity?

I ask this because one of the most common questions someone will ask me upon discovering that I'm from Sweden is, "How is your culture shock?". This question, however, would otherwise never be posed unless I revealed my difference in national background. My concern is therefore that, with a freshman class of about 125 students, about 40 of which are international students, only 30% of the students are allowed to acknowledge feelings of confusion, home-sickness and identity loss that follow culture shock, because culture has been limited to a concept of international borders. The truth is, every single student here has completed a cross-cultural move upon arriving on campus. Whether you find yourself 10,000 miles away from home, or simply 10, you've still met the mark for being a cross-cultural student. ♦

Humans of St. John's:

Katherine Powell's Story

Marie Divine A'20



"Growing up, I was fortunate to live in and travel to a foreign country every year because of my father's work. I didn't know what he did, I didn't know why we were there, all I knew is that I was able to go somewhere foreign every year. All I knew was that there were palm trees, cool breezes, and crystal clear waters. I tasted food I never had before. I saw nature in a way I never had before. But the most important lesson I ever learned was human interaction.

My father was a scientist working in a new location, but he spoke that one universal language, science. But it wasn't the science that consumed me, because I didn't know what it was. I didn't know the importance of it. It was the way I observed the adults around me interacting with each other and with the native people of the land we were now living in. The native people; their skin was much darker than mine, but the contrast was amazing, and I thought it was the most incredible thing.

My friend's home was much different than mine. Her house was made of wood, of pillars, which were made by a hammer and nail from her father's hand. Her house was much warmer than mine as there was no air conditioning at all but only the cool breezes through the glassless window. Her nights were much different than mine. No TV gave us a third unknown voice. No radio sang or spoke in the background. But rather we spent it with her father and mother, playing cultural drums from the same hands which built the house we were sitting in. Her food was much different than mine. It was made by us. We picked it from the garden we had planted. We caught the chicken which sustained us. We gathered the spices that flavored our plates.

All of these differences were not differences at all. We laughed and played in the same way. We ate and slept in the same way. We laughed and cried in the same way. And our friendship for each other was actually the same. Even though her skin was much darker than mine, the night and the day together, it made no difference. And there were no differences at all. I later learned the contrast of our skin was called race. And I learned that that word was not as big as our night and day together." ♦

Ben Haas Answers

On Friendship and Romance

I'm having trouble making friends in such a small social environment, and I feel like everyone's already consolidated into friend groups. How do I find people to socialize/philosophize with?

The great thing about St. John's is that everyone in your year is doing the same thing in classes that you are, and everyone in the years above you has already done what you're doing. You can walk up to nearly anyone on campus and start talking about the program, provided they don't look busy. A good way to meet people you wouldn't normally encounter is to join clubs! We should all, as a rule, be a member of at least one club, as they're good ways to meet people and get yourself out of your room. If you're planning on leaving campus to go to CVS or Graul's, ask if anyone on your hall needs anything or would like to come with you. The same goes with the dining hall — if you're headed there, ask your roommate if they want to come, and maybe knock on some doors and invite your hall-mates along.

Getting over the anxiety of approaching people you don't really know is incredibly difficult, but this school, with its tiny student population, is a better place to do it than most.

I'm really interested in another Johnnie, but I have no idea how to approach him. How can I ask him out?

Firstly, if they're in your core, don't. Even if you just have some classes with them, it's a bad idea. I know I've said this before, but it's just really important that you don't have a falling-out with someone you see every day.

With anyone else, it's nearly always a good idea to get to know them a little first. If they're already a friend, you can always pull a "do you want to get coffee sometime?" The nature of the coffee meeting is that it isn't necessarily a date, but gives you a chance to talk to them one-on-one and leaves you open to a more serious date afterwards. It's often good to be up-front about your interest, either implicitly or explicitly; people sometimes worry about "ruining" a friendship by expressing romantic interest, but the best way to prevent that happening is to remember that they'll make the decision that's best for them. There's no need to put pressure on a friend if you like them — if they like you too, they'll let you know in their own time, and if not they'll feel more comfortable telling you as much.

If it's someone you don't know, try the question above for tips on getting acquainted! Or, if you're feeling particularly adventurous, walk up and introduce yourself — worst-case scenario, you'll at least make a new friend. ♦

The Questions We Should Ask

Noah Burns A'18

Despite the horrifying amount that has been said about it, I think there are a few things that haven't been said in the major media about the upcoming presidential election. Furthermore, I think they are also the key points. While a rigorous debate on social media has flourished over whether those opposed to Donald Trump should vote for Hillary Clinton or not, almost no discussion has been given to what we should do after the election. This is the more important question by far to those who are unhappy with the status quo, to whom this short piece will be addressed.

Policy is not determined by elections. If you voted for Barack Obama in 2008, were you voting for a drastic increase in the number of drone murders in Pakistan, Yemen, Afghanistan, and Iraq? Were you voting for the massive surveillance apparatus uncovered by Edward Snowden? Were you voting for almost complete effective immunity for Wall St. after the 2008 collapse and Bush administration officials who committed torture and war crimes? Were you voting for a radical increase in deportations, support for Egypt's brutal authoritarian regime, arming Saudi Arabia's war crimes, or a drive-by Iraq in Libya? Those policies are all continuations or radical expansions, especially in the case of the drone campaign, of Bush administration policies. No matter who you voted for, were you voting for a radical expansion of Bush administration national security policies when you voted in 2008?

I am not trying to argue that there is no difference between Barack Obama and George Bush. There is a significant difference, one that was most clearly seen in the Obama administration's deal with Iran. The Obama administration continued the Bush administration line on Iran: that it was developing a nuclear weapon, and that the US would go to war with Iran if it developed such a weapon. But despite that line, the Obama administration engaged in real diplomacy with Iran to negotiate a deal. The deal that Obama reached with Iran was very controversial. The question constantly asked in the media was, "Will this deal stop Iran from getting a nuclear weapon?" The question never asked, like the one about what we should do as citizens to hold our government in check after the election, was "Is Iran even trying to develop a nuclear weapon?" Within the constraints of the ideological framework that existed in the media, a framework wholeheartedly adopted by Obama and the Democratic Party, that question cannot be asked. If you ask it, which I encourage you to do, you come to some surprising facts. I won't recount all of them here,

but I will give you a characteristic example. In 2015, leaked cables revealed that Israel's intelligence service, Mossad, concluded that Iran was "not performing the necessary activity to produce [nuclear] weapons" (The Guardian online, Monday 23 February, 2015, "Leaked Cables Show Netanyahu's Bomb Claim Contradicted by Mossad").

This example shows fairly clearly the difference between the Democratic and Republican mainstreams, the former of which Obama and Clinton represent: they accept a very similar worldview, but are more or less radical within it. This is a significant cause of the amazing continuity between Democratic and Republican administrations on many of the most important policy issues. Where does this worldview come from? That question would take too long to truly explore here, although it is another of those supremely important questions that don't get asked because its premise is almost unthinkable in the mainstream; we all know the Democratic and Republican parties are wildly different, presenting deeply opposed visions for the future of our country and the world, right? I wish.

I can only suggest a few of the things responsible for this continuity of policy. First, there is the continuity of the national security bureaucracy, which is described by Michael Glennon in a recent interview in the Boston Globe. When asked how he started working on his new book, *National Security and Double Government*: "I was curious why a president such as Barack Obama would embrace the very same national security and counterterrorism policies that he campaigned eloquently against. Why would that president continue those same policies in case after case after case? ... The presidency itself is not a top-down institution, as many people in the public believe, headed by a president who gives orders and causes the bureaucracy to click its heels and salute. National security policy actually bubbles up from within the bureaucracy. Many of the more controversial policies, from the mining of Nicaragua's harbors to the NSA surveillance program, originated within the bureaucracy. John Kerry was not exaggerating when he said that some of those programs are 'on autopilot'" (Boston Globe, October 19th 2016, "Vote All You Want. The Secret Government Won't Change"). This national security bureaucracy as an institution or set of institutions has been radically empowered by the Global War on Terror, the central tenet of which is that the entire world is a battlefield, and the state of war will not end until terrorism is completely defeated. In order to maintain this endless global war, national security agencies and the military had their

budgets drastically increased, and their top officials are some of the most important people in Washington. As Glennon points out, this bureaucracy has always been powerful. But the War on Terror is an opportunity like none since the fall of the Soviet Union for the national security apparatus to increase its power, which is the rule for maintaining centralized power, as we are taught by Thucydides, Hobbes, and others. No matter who becomes president, that president will be faced with a bureaucracy that will control what information they are presented with and what options they are given for how to act on that information. It is supported by bipartisan majorities of Congress and powerful vested interests, like defense contractors, who also benefit hugely from the War on Terror. This institutional framework has guided the 'change and peace' candidate to become the president of continuing, endless war.

The second important factor is the media. We have already seen the media in action above. The media are giant corporations, made up of highly paid executives, newsreaders, and reporters who live in Washington, D.C., send their kids to the same schools as the political class, attend the same social functions, have the same values, and live in the same neighborhoods as those they are tasked with keeping in check. Shockingly, they often do not even fail at doing this; they do not attempt it seriously. I suspect you are already aware of many of the problems with the structure of the media, so I won't give any more examples than those I gave above, except to point out two rules (there are many more). First, there are two sides to every issue, a right and a left side, and vigorous debate between those two positions is called democratic discourse. Second, when it comes to foreign affairs, everything 'we' do is 'defense,' while everything 'they' do is 'aggression.' (For an example of this, see the October 14th, 2016 article at FAIR.org, "Hiding US Role in Yemen Slaughter So Bombing Can Be Sold as 'Self-Defense'") This second rule also applies to the drone program. Currently, a majority of Americans supports it. I don't believe that would be true if there were serious coverage of it that disobeyed this rule and if real alternatives were presented in violation of the first rule.

So what of my initial point, about what is missing from the conversation on voting? We are led to believe, by the candidates and the media, that in choosing our president we are choosing 'who we want to be as a nation' or 'leaders of the free world.' Voting is our supreme democratic responsibility as citizens of the United States, and 'if you don't vote,

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you can't complain.' (Not all cliches should be punishable by exile or hemlock, but that is one of those that should be.) Fortunately for us, this is all false. Our vote is not our voice, and the electoral system isn't even the main venue for political action. Historically, change in the United States has not come from the top. The impetus for abolition of slavery, women's rights, environmentalism, anti-war movements, disabled persons' rights, and labor rights has come from mass popular movements, not from candidates who won elections. The real power in a society rests with the governed, if they choose to exercise it. If not, in ours it lies with those who have economic power. Those with economic power exert an outsize influence on American institutions, from campaign finance through lobbying and the revolving door between public and private industry. Perhaps the most important factor is class solidarity. The economic elite, which includes many or most national politicians, many members of the media (and all the owners of media corporations), and, as honorary members, the elite academicians, have more interests in common than they have with those in the middle and on the bottom. As a result, we have seen very few politicians, members of the media, or

economists challenge the restructuring of the economy that has occurred since the end of the Bretton Woods system in the 1970s, and in earnest since the Reagan administration in the 1980s. In short, the economy has been designed to transfer the wealth of the middle and lower classes to the wealthy. (For more on this exceedingly important topic, see the work of economists Dean Baker, at the Center for Economic and Policy Research, Yanis Varoufakis, professor of economics at the University of Athens, Joseph Stiglitz, professor of economics at Columbia University and a Nobel laureate in economics, Ha-Joon Chang, professor of economics at the University of Cambridge, and linguistics professor emeritus at MIT, Noam Chomsky. For specific works and references, feel free to contact me.) This means that to expect there to be fundamental change in the economic system brought about by politicians is to expect the powerful to voluntarily change course and give up their power.

This will not happen.

The solution, I believe, is to answer the question, "What will we do after the election?" with the word "Democracy." Voting is not

really democracy. It is ratification. What we are being asked to ratify has been crafted by bureaucrats and elites with their own power in mind. It has been a disaster for the rest of us. Therefore we, the governed, should exercise our power as the vast majority and take control of our own lives. This does not mean abolition of the government tomorrow. It does mean adopting some of the same tactics that past movements have used and some new ones to fit present challenges. It means building communities guided by principle to oppose power where power is unjustified. If we don't want a future of endless war, we must make it ourselves. A vote for a lesser evil will not accomplish that, nor will a vote for a third party. Only a real democratic institution, a popular movement, against war can accomplish that. The same is true for every issue.

Vote if you believe you should for whom you believe you should. But let's get together to work for an alternative after the election.

(If you are interested in creating a group to engage in political work, please feel free to contact me at nhburns@sjc.edu.) ◆

Outside The Bubble: Hurricane Matthew

M. E. Hommel A '18

Predictions about the Category 4 storm, Hurricane Matthew, throughout last week caused panic up and down the east coast and throughout the Caribbean. By the middle of the week, however, predictions changed; a cold front from the north would push Hurricane Matthew out into the open Atlantic, thereby protecting Virginia and Maryland and giving us a pleasant, rainy Saturday. The worst of the storm was centered around the Caribbean.

Haiti's National Civil Protection agency, in charge of disaster response, has reported the death toll at 473 people. Authorities expect that more information from the inland mountain communities and cholera outbreaks in cities will

in coming weeks bring the death toll up to around 1,000. President Obama urged people to donate to the Red Cross in the relief effort, but the Haitian community has urged people to donate to Haitian-run aid organizations. This is in response to an investigation conducted by NPR and ProPublica last year that the Red Cross allegedly "grossly mismanaged its response" to the 2010 earthquake, along with the claim that the Red Cross only built 6 permanent shelters in Haiti. (Red Cross CEO Gail McGovern responded to the claims by saying that "\$488 million in donor money ... funded 100 different humanitarian aid projects in Haiti.") Hurricane Matthew also made landfall in the Dominican Republic and Cuba, where major physical destruction but

no fatality was reported.

When Hurricane Matthew made landfall in the US, however, it had fallen to a Category 2 storm with ocean surges of nearly 8 feet and high winds reaching 105 miles per hour off the coast. Flash flooding was a major concern in northern Florida, Georgia, and the Carolinas. As many as 700,000 people throughout the states' coastal areas were evacuated. Savannah Mayor Eddie DeLoach 'warned those who stay that they'd be on their own.' Those who stayed in spite of the evacuation orders on Pawleys Island, South Carolina were apparently asked to "sign a waiver and list next of kin", reports CNN. In Florida over 1.1 million people were without power for several days and 4 people died. ◆

There Is Virtue in the College, But Where to Look?

John Felis GI

In a previous issue, my fellow graduate student, Mr. White, spoke of our introductory seminar on the first half of Plato's *Meno*. Feeling somewhat differently about what transpired at this seminar, I thought it fitting for a few comments.

As a new student, I can say with the utmost joy that *Meno* will need no introduction to any member of our polity. One of the many reasons why I chose to attend St. John's is that all would be acquainted with such works, which give us a chance to step outside our preconceived notions and confront the notion itself directly, through the text. This has been more or less my experience and, sharing Mr. White's perspective that most other colleges have merely the pretense of open-mindedness, there is nowhere else I would rather be.

It is often best to start with the last things first. I wholly agree that the goal of open-mindedness should be to close the mind upon something one may call the truth. It seems most program authors share this opinion, if only in part, which ought to make the program itself lead to such ends. So, if a student wanders out of here in a daze of Socratic ignorance, proclaiming loudly, "I know nothing," they may have missed the point even of Socrates, who at least knew "the art of love." Beyond that, Plato's Socrates makes plenty of positive statements including his teaching on

Anamnesis. Yet, what does Socrates mean by this? Even an answer to this still brings us to further questions of knowledge. This leads us back to the heart of the dialogue: What is virtue? Here it should become apparent, as it was for the paralyzed *Meno*, how difficult it is to find the thing upon which one ought to close their mind.

It seemed to me that it was in this spirit that Ms. Langston spoke during our *Meno* Seminar. I certainly did not take anything she or the rest of us said to mean that virtue or a knowledge of virtue should be deemed an impossible illusion, a foolish search. The following disagreement may highlight how difficult it is to know exactly what virtue is.

It seems that Mr. White has equated moral imperatives with virtue. While there is a necessary connection, are the two synonymous? He points out that according to the policies of our school, a Tutor may be fired for moral failings, hence the school believes in virtue. Among these moral failings he notes "the college is certainly not hiring tutors who are serial rapists." --and rightfully so! Yet, not being a serial rapist, or any sort of rapist, does not seem like the fulfillment of virtue, but more so a prerequisite or maybe the natural result of being virtuous. If a tutor's mind is full of lust, they will not be fired, but they may be for sleeping with a student. A drug-addicted tutor may similarly be fired, but I

highly doubt an intemperate chain-smoking tutor will receive so much as a reprimand. Thus, while the college certainly holds proper moral actions to be necessary and virtue as something to be sought, the former is obligatory where the latter is ideal.

Virtue, in one definition, is the highest excellence of a person. People often say that they are a "good person" because they don't do bad things, such as kill, rape, steal, what have you. Does this make them good? Whatever virtue is, it must be more than this alone. Then again, I may be mistaken about so much. The only way to find out is to join with Socrates and plunge deep down to our original presuppositions and flush them out. No student is exempt from this obligation. Even a religious student who holds a creed as inviolable may still take the plunge and come to a new understanding of their own religion. An Atheist could do as much with their own beliefs. In truth, anyone can and it is a shame that outside of our polity so few do. It is this spirit that I found at my first St. John's Seminar — a spirit that drives one, whether they like it or not, deeper and deeper. ♦

Safety Corner

This edition's Public Safety Corner is published in recognition of National Fire Prevention Week. Public Safety wants you to take a moment to think about some simple things.

So remember:

- Don't overload electrical plugs, as they can cause fires.
- Candles are not allowed in dorms, as they are a severe fire hazard.
- Evacuate buildings when the fire alarm sounds; fires move fast—faster than you think.
- When you evacuate during a fire, keep in mind there will be a lot of smoke, making it hard to see or breath. Stay low and get out quickly.
- If there is a fire, get out and stay out. Don't go back in for personal belongings, it's not worth your life. Call Public Safety.
- Anything you string up, like lights or other items, should be against a wall and not in the middle of hallways or rooms. Firefighters going in to fight a fire may end up with their helmets and air packs getting hung up, creating severe safety issues for them.
- Don't cover smoke detectors. They are critical to getting immediate warning of a fire, saving you precious minutes to allow you to evacuate.

Dartmouth College in New Hampshire suffered a 4-alarm fire on October 1st, where a dorm was gutted by the fire. Thankfully no one was hurt, but 70 students were displaced and their belongings were destroyed by the fire and smoke. Imagine having to replace everything you have while still trying to engage in your education. It's not just your lives but your property at stake, so be safe!

Thinking Straight

A Reflection on the Nature of Straightness And Its Relations to Postulate 4 Through Proposition I:13 Of Euclid's Elements

Lijun Gu

Tutor

Many of us are vexed when we see in Lobachevsky's *The Theory of Parallels* that two straight lines can asymptotically approach each other and yet remain parallel. It seems to violate our deeply held conviction of what a straight line is or ought to be. Occasions like this are often important because they force us to revisit some of the things we have studied before and re-examine what we thought we had learned. This short essay seeks to go back to one of these earlier moments in Euclid's *Elements* and reflect upon the nature of straightness and its relations to Postulate 4.

Although the main subject of this inquiry is straightness, the initial puzzlement is actually over a question about angle measurement. The question is this: when two straight lines meet, making adjacent angles, how many possible angle measurements can there be? A quick breakdown, first between the equal and unequal and then within the unequal, gives us three possibilities.

1. two *equal* adjacent angles
2. two *unequal* adjacent angles, which can be further divided into
 - A. two unequal adjacent angles that add up to two right angles
 - B. two unequal adjacent angles that do not add up to two right angles

Of these, Euclid touches upon the first in Definition 10, which states:

"When(ever) a straight line set up on a straight line makes the adjacent angles equal to one another, each of the equal angles is right, and the straight line standing on the other is called a perpendicular to that on which it stands."

He later on demonstrates 2 (A) in Proposition I:13, which states:

"If a straight line set up on a straight line make angles, it will make either two right angles or angles equal to two right angles."

It is interesting to note that although all three possibilities appear to have equal status because they all come from the same question, the first two are dealt with differently by Euclid. This seems to be hinting at different levels of difficulty when it comes to our thinking over these two possibilities, that one can be defined through a naming or drawing a boundary, whereas the other has to be proved by a demonstration. It feels a bit unsettling because it is in some

ways reminiscent of the "asymmetry" problem that we encounter in other parts of the Program, e.g., having two different equations for the same phenomenon.

Now, leaving this uneasiness aside, let us turn to our next and more pressing question: what about 2(B)? Should it be accepted or rejected? This is a much more difficult problem, because Euclid is silent about it. There are no explicit discussions about this in the definitions, postulates, or propositions, and we will have to rely on our own resources when attempting to address this issue. Naturally, what comes to mind first is that if the question is about an angle measurement, then perhaps we should look at the nature of the lines that form these angles. This obviously leads us to Definition 4, which states:

"A straight line is a line which lies evenly with the points on itself."

It is tempting to say that since rectilinear angles are formed by straight lines, then the nature of straightness — the laying "evenly" of the line — guarantees that if two straight lines meet, the total amount of inclination will always remain the same. Therefore, if Definition 10 says that this amount is two right angles, then it will always be two right angles no matter how each of the adjacent angles may vary. The combination of these two definitions will, therefore, exclude 2(B). However, although this thinking is quite reasonable, the relationship between straightness and angle magnitude is more complicated and not as clear as one might have expected at first. This is supported by Postulate 4, which states:

"all right angles are equal."

In other words, even though right angles are everywhere formed by straight lines, their magnitude (equality, in this case) can neither be intuited (through common notions) nor demonstrated (through proposition). It has to be begged for. It appears, therefore, that a simple reliance on Definition 4 or its combination with other definitions cannot eliminate the possibility 2(B). We have to look elsewhere for help.

Now, since it was mentioned earlier that 2(A) was dealt with in Proposition I:13, one might be inclined to go back to this proposition and see whether the acceptance of 2(A) itself might help with our thinking on 2(B). Again, the enunciation states:

"If a straight line set up on a straight line make angles, it will make either two right angles or angles equal to two right angles."

Indeed, a careful examination shows that the enunciation provides a binary situation: either two right angles or angles equal to two right angles; there is no third possibility. The method employed in the demonstration — the presenting of an absurdity through a reductio in which angles appear to be unequal to two right angles — also points in that direction. These two combined seem to convincingly exclude 2(B). This might indeed have been the case had there not been a noticeable peculiarity in the proposition: the omission of Postulate 4.

The impact of this omission becomes clear if we move away from a single point on the given straight line in the proposition and think about it as a whole. Since there is no restriction on where the two straight lines can meet, the proposition should apply to all points on the given straight line. In other words, one can set up multiple straight lines at different locations on the given straight line, and they will all form adjacent angles that are either two right angles or equal to two right angles. However, without the explicit invocation of Postulate 4, we are not certain whether or not all the right angles along the given straight line are equal. For example, if there are two pairs of right angles formed at points A and B (below) along the given straight line, and if the pair at A is held as a *standard* for right angles, then without Postulate 4 the pairs at B could be either greater or less than right angles at point A. Therefore, since the pair at A is the standard, then *looking from that location*, the straight lines at point B may be forming right angles in name only, because their measurement may be either greater or less than two right angles. The same also holds if the situation is reversed. The proposition therefore demonstrates that 2(B) is not possible, only to have it admitted back in through the omission of Postulate 4.

If possibility 2(B) cannot be eliminated, then it will have a real impact on how straight lines may behave. Looking at the figure above, one can see that if one pair of right angles at one location is different from another pair at a different location, the straight line may appear "bent" at such locations.

At this point, we are confronted with two options which seem to hint at the possibility of different *types* of straightness. We may

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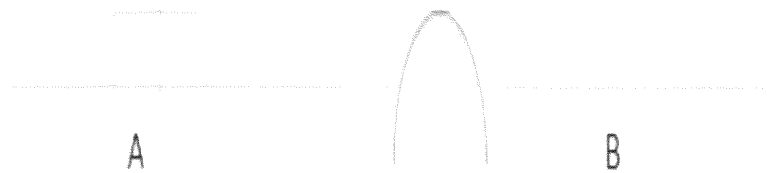
either choose to believe that although Euclid does not explicitly mention it, Postulate 4 is implicit in the proposition. If we adopt this option, then all pairs of right angles formed along the given straight line will be equal and we will thus avoid any “bending.” The given straight line will then maintain its straightness *globally* throughout its entire length. But this amounts to saying that this “no bending” type of straightness is inextricably related to, if not a consequence of, angle measurements. Viewed in this light, the “lie evenly” in Definition 4 turns out to be a surface phenomenon of the constancy of right angles stipulated by a postulate. In other words, a straight line can be re-defined as a line whose points on it are such that if another straight line goes through any of them, right angles will be formed — and they will be equal not only to each other, but also to all the other right angles thus formed elsewhere on the line. The *spatial arrangement* of the “lie evenly” is then actually a visual appearance of what’s hidden underneath: the equality of all right angles. A postulate, therefore, is lurking behind the definition of straightness. One thus wonders whether straightness is something that can be *sufficiently* defined at all by a definition alone.

On the other hand, we may choose to take the proposition as-is without assuming the implicit presence of Postulate 4. This leaves open the possibility that not all pairs of right angles formed on the given straight line are equal. This, in turn, will present two further options from which we may choose. We may either accept that straight lines, while being straight, will “bend” at certain places. In other words, straight lines might be “curved;” for what is a curve but a series of rectilinear bendings that are infinitely small and infinitely close? Alternately, we may choose to preserve the straightness of the line by depriving it of its global character. In other words, the straightness of a line is no longer applicable to its entire length all at once. A straight line can only maintain its straightness if its several parts are examined independently of one another. When we examine the straightness of the line in the figure above, we can say that the line is straight at point A, because the angles there add up to two right angles. What happens at point B is irrelevant to this particular judgment made at A. Similarly, the straight line is also straight at point B, since the angles there also add up to two right angles. What happens at A is also irrelevant to the judgment made at B.

To put it differently, straightness is now a *local* phenomenon.

All this may sound familiar to students of Lobachevsky. What is different, though, is that these preliminary conclusions are derived from our reflections on straightness and its relations to Postulate 4, rather than through the rejection of Postulate 5. It looks like the universal geometry — a term referring to the first 28 propositions because they do not rely on Postulate 5 — is not universal after all. Many propositions in it may depend on the acceptance of Postulate 4, just as those that come afterwards depend on Postulate 5. This seems to show that there are some deep-rooted connections between

Postulate 4 and Postulate 5 whose nature is not yet clear to the author. ♦



3

♦ Ivan Romanovich Syritsyn

Titanic creature of unmeasured might

Who lies beneath the earth in slow decay

Where heaven couldn't hope to hold your stride

You are entombed, a giant turned to clay.

Once nations quaked at word of your approach

And fielded armies scattered at your roar.

Now those who insult you fear no reproach

Since from their grave no one had rose before.

What hope is there in arms and legs of steel?

And by what way will Death be overthrown?

If you lack knowledge where will be your will

When twilight comes and bells begin to toll?

So search and learn what's hidden from your sight

And gain the proper tools by which you'll fight.