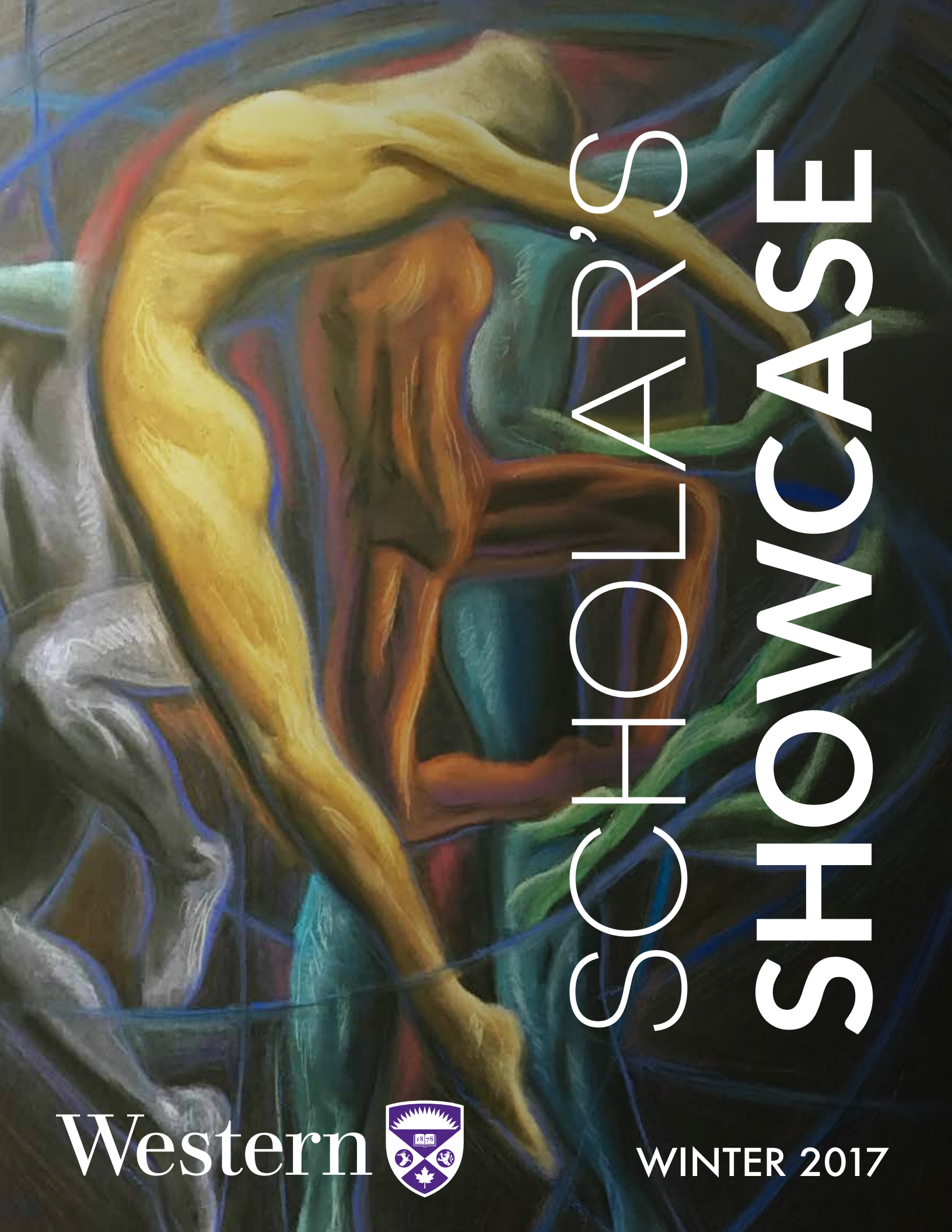

SCHOLAR'S SHOWCASE

Western

WINTER 2017

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PHOTOGRAPH BY ERICA BERRY

Trial and Error:

A Letter from the Editors

ELENA KUM & LISA-MONIQUE EDWARD

"*You will enrich your life immeasurably if you approach it with a sense of wonder and discovery, and always challenge yourself to try new things*"

- Nate Berkus

As students, to truly embrace the journey through university, we must be willing to seek out challenges rather than shrink from them. Students in the Scholars community at Western University are united by this — where others see barriers, we see challenges to embrace and obstacles to overcome. As the new Editors-in-Chief of this publication, producing this issue has been an adventure paved with trials, successes, and many learned lessons. We are proud to present this craft as a culmination of our creative process and the beautiful outcome of trial, error, and perseverance.

Jordan's Principle:

A First Step in Addressing First Nations' Health in Canada

An Excerpt

BY ERIN ANDERSON

Historically, First Nations health has always been disregarded by the Canadian government. To add insult to injury, not only were European settlers responsible for introducing epidemics to North America such as small pox, influenza, and tuberculosis, they also refused to acknowledge the vast medical knowledge of the First Nations, along with their traditional healing practices. Only in the last twenty or thirty years has Western medicine begun to acknowledge the importance of holistic health care, which mirrors traditional Indigenous ways of knowing.

Jordan Anderson, born in 1999, spent the first two years of his life in a Winnipeg hospital, far from his community in the Norway House Cree Nation, due to a rare muscular disorder called Carey Fineman Ziter Syndrome. Upon noting improvements in his condition, Jordan's doctors cleared him to leave the hospital, to live at home or in a home-like setting that could be retrofitted to his needs. Because of the federal government's refusal to fund the necessary alterations, Jordan was not able to return to his parents, but instead was to be placed in a foster home that could accommodate him. The federal and provincial governments still could not agree on who should be financially responsible for covering the costs, including his travel to and from medical appointments and the special diet he required. Before he ever had a chance to leave the hospital bed in Winnipeg, Jordan passed away at the age of five. The tragic irony of the situation is that his hospital care cost the Manitoba taxpayers double the amount of what the foster home care would have been (Nathanson 26). Jordan's unnecessary death was a direct result of the bureaucratic conflict between two branches of government, demonstrating the need for a procedure that would prevent similar cases from arising for other First Nations families in the future. As a result, Jordan's Principle was created, a tribute to his legacy, however, more time would pass before any action was taken. More than two years after Jordan's death, the Canadian Medical Association Journal published their editorial, criticising the Canadian government for its inaction. This proved to be the exposure this important, albeit then still-invisible issue needed.

Yet here we are, more than ten years later, and Jordan's Principle has yet to be fully implemented by the Canadian federal government, or any provincial government in the country for that matter. Even worse, Jordan's family never received so much as an apology from either branch of government, with both parties still refusing to accept responsibility. In 2015, the Assembly of First Nations condemned the narrow scale upon which Jordan's Principle had been enacted. The federal government has acknowledged its failure in adhering to its promises, but nothing has changed. While Jordan's Principle was a step in the right direction, the situation is far more complex, therefore requiring a multi-faceted solution.

The Gorge

PHOTOGRAPH BY NATALIE LI

Guardian

STRING ART BY GILLIAN SHOYCHET

The Art of Self-Deprecation

An Excerpt

BY JEREMY CHAN

Perfection is an unattainable standard for any individual. Simply put, it is impossible for someone to be free of flaws; however, this does not dissuade us from trying to be as close to perfect as possible. It is in our nature to hide our imperfections and expose the favourable aspects of ourselves. If this is true, why does self-deprecating humour exist?

Self-deprecating humour as a type of comedy is certainly paradoxical. With most types of comedy, the 'punchline' tends to be something completely unrelated to the comedian. However, with this type of humour, the individual intentionally places ridicule on himself or herself for the joke. They deliberately draw attention to their flaws and flaunt them with confidence. This is strange considering how natural it is for us to conceal these aspects of ourselves. Despite this fact, people continue to engage in this activity.

As counter-intuitive as it may be on the surface, the idea of self-deprecating humour is quite logical. The main reason most individuals use self-deprecating humour is to appear more modest. By downplaying achievements, the individual seems more relatable to others. Self-deprecating humour further emphasizes the vulnerability of an individual, which dismisses any impressions of arrogance or pride.

This idea is further supported in a 2008 study at the University of New Mexico. In this particular study, various forms of humour (self-deprecating, deprecating humour) were compared to determine their effects on an individual's attractiveness. This particular study found that self-deprecating humour by high-status individuals resulted in an increase of long-term attractiveness (Greengross 2008). Studies like these display the unusual charm behind the vulnerability associated with self-deprecating humour. In social relationships, we value vulnerability rather than perfection. We would prefer to interact with an individual that is far from perfect as it lessens feelings of inferiority or inadequacy. Vulnerability also brings a certain level of comfort and security, which makes it easier to confide certain emotions and thoughts with one another. Ultimately, by engaging in these conversations, the social bond between individuals is further strengthened.

In the right situations, self-deprecating humour is a valuable tool. It can be used to change perceived impressions and develop stronger social bonds. It emphasizes vulnerability and humility, which is highly valued. In the end, those who are able to effectively use this social tactic may have an advantage in creating a social connection between individuals.

Don't Let The Summer Get You Down

PHOTOGRAPH BY ERICA BERRY

Valentine

PAINTING BY LISA-MONIQUE EDWARD

Renaissance Square

PHOTOGRAPH BY NATALIE LI

Training and functional brain development:

Maturational or interactive specialization?

An Excerpt

BY JESSICA LAMMERT

An enduring debate in the field of developmental neuroscience seeks to relate the physical growth of the brain to the emergence of behavioural capabilities over the first years of life. Two major theories have emerged to explain this brain-behaviour relationship: the maturational perspective and the interactive specialization perspective (Johnson, 2001).

The maturational approach proposes a strict model of attributing newly emerging sensory, motor and cognitive functions to the anatomical maturation of the brain. This approach attributes the poor performance on cognitive control tasks by young children to the latent development of the prefrontal cortex but cannot account for activity in frontal cortical regions during early infancy.

Contrasting the maturational approach, the interactive specialization account assumes functional brain development involves a process of organization and interaction in the brain. This approach suggests the activity in specific brain regions are the result of their patterns of connectivity to other regions and that these patterns of connection emerge in response to experience. Therefore, we can expect to see variation in patterns of cortical activation within and across age groups during performance on behavioural tasks.

We can consider the findings of Blakey and Carroll (2015) regarding the development of cognitive control to determine which developmental account the study supports and what this support implies. The authors sought to investigate the effects of cognitive training on domain-general executive functions (EFs) –such as working memory and inhibitory control–- in four-year-olds. Participants completed measures recording working memory, inhibitory control, cognitive flexibility, mathematical ability, and processing speed one week prior to training and one week after training. Training tasks were completed in four weekly 20-min sessions of computerized tasks by children in the experimental condition receiving cognitive training and matched controls. The control condition tasks involved the same visual stimuli as the experimental training tasks but only required simple perceptual judgements.

The researchers' analysis compared the performance of the experimental and control groups on the baseline measures after training. It was found that the children in the training condition significantly improved their working memory from pre-training baseline to post-training baseline while the children in the control condition did not. There was no significant main effect of group on inhibitory control performance.

The maturational theory of the development of cognitive control and prefrontal cortex functioning argues cognitive control emerges only as a function of age and independent of experience. That is to say, despite individual differences in environment, genetics, and training, normal developing people of different ages should not have the same cognitive processing capabilities and normal developing people of the same age should be at the same level of cognitive processing. Blakey and Carroll's (2015) findings reject this hypothesis by showing that individuals of the same age (four-years-old) are able to perform cognitive processes at significantly different levels when training is introduced. They exemplify the importance of experience in cognitive control development, supporting the interactive specialization approach to brain development.

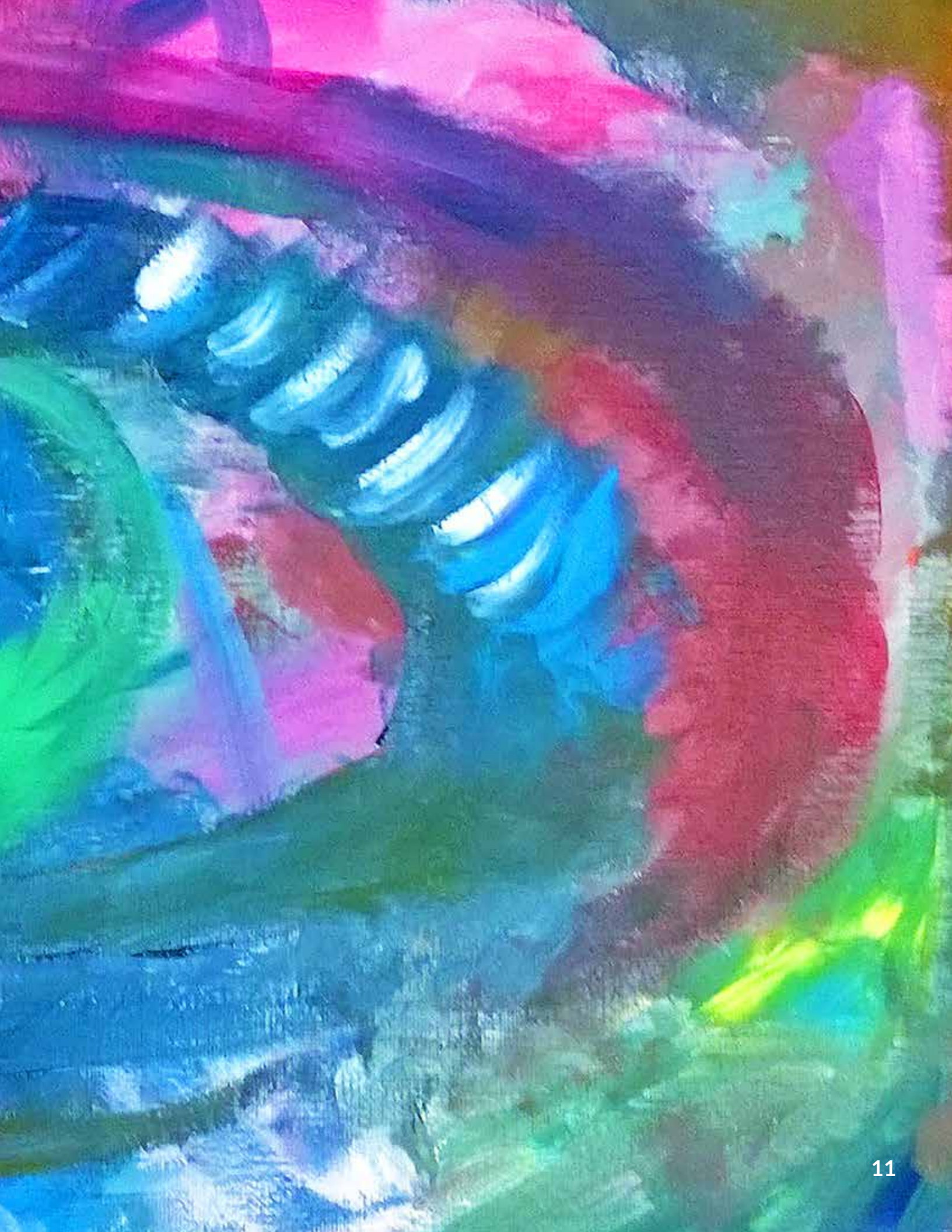
Overcoming

DRAWING BY NATALIE LI

Overlooked

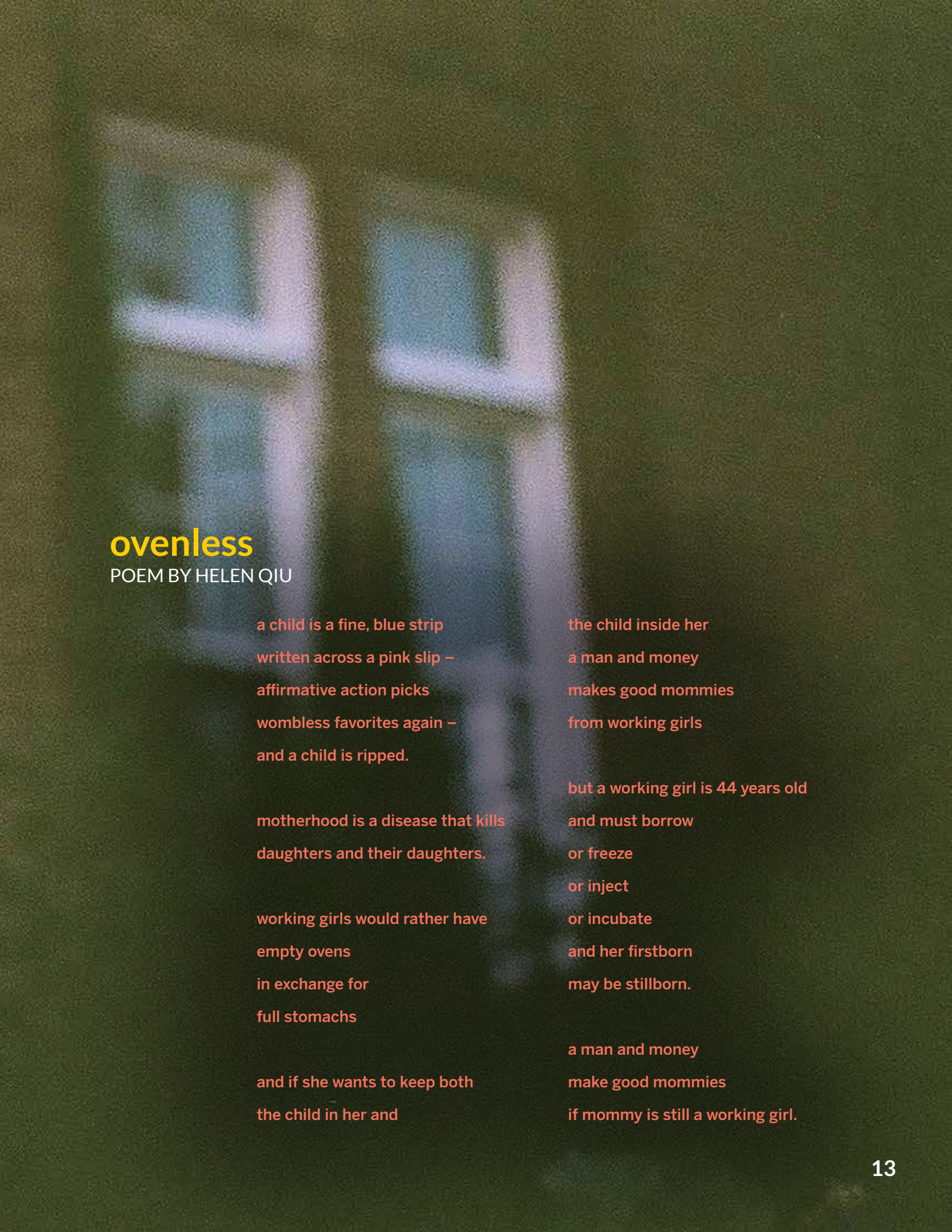
PAINTING BY NATALIE LI

This painting used only leftover paint from multiple other paintings. It represents how something beautiful can arise from something overlooked.



These Days

PHOTOGRAPH BY ERICA BERRY



ovenless

POEM BY HELEN QIU

a child is a fine, blue strip
written across a pink slip –
affirmative action picks
wombless favorites again –
and a child is ripped.

motherhood is a disease that kills
daughters and their daughters.

working girls would rather have
empty ovens
in exchange for
full stomachs

and if she wants to keep both
the child in her and
the child inside her
a man and money
makes good mommies
from working girls

but a working girl is 44 years old
and must borrow
or freeze
or inject
or incubate
and her firstborn
may be stillborn.

a man and money
make good mommies
if mommy is still a working girl.

Chaos as a Creator

Feature Essay

BY ERICA YARMOL-MATUSIAK

Humanity prides itself on creating orderly systems which explain and predict the way the world functions. This capacity is undermined by an omniscient chaotic undercurrent reminding man of his inability to control the cosmos. In this exploration, the broader definition of chaos consists of the events and objects humanity cannot explain, predict, or fathom. These include everything from indeterministic occurrences to the complex causes behind chance to the structure of the universe. Uncertainty, chaos, and chance result in unexplainable phenomena, forcing humanity to question how does one create meaning and identity within a world that cannot be controlled? Paradoxically, the very forces that cause humanity to question existence can also act as a catalyst to build meaning. Chaos facilitates humanity's journey to derive meaning by encouraging individuals to acknowledge limitations and interpret their role in the universe.

Chaos acts as a catalyst to create meaning because it fosters creative explanations of the universe's infinite complexity of possibilities. Be it through science, literature, or another discipline, the lack of understanding about the universe's structure motivates individuals to explore and explain their surroundings to others. Inquiry is spurred when there is a concept one does not understand — from a microcosmic level science lab investigation to big-picture evolutionary processes. Thinkers such as Borges and Greene tackle large scale, existential chaos, finding new prototypes to understand the cosmos and humanity's place within it. Borges builds a library metaphor out of the universe's "leagues of senseless cacophonies, verbal jumbles and incoherences" (Borges, 3). By describing humans as eternal librarians wandering about a sphere with an inaccessible circumference (Borges, 2), Borges suggests the universe is the ultimate narrative. His literature gives infinity a tangible form, encouraging readers to reflect and create their own story within the enigmatic volumes. Greene's bubble universes provide another spatial visualization of the cosmos. His assertion that "we are just a bag of particles acting out the laws of physics" (Greene) reduces humanity to a mere experiment but also gives individuals the freedom to create their own identities within science's sphere. Though difficult to fathom, pondering these explanations about multiverses mitigates the existential stress involved in considering their vastness. Greene and Borges's spatial models allow individuals to visualize infinite possibilities and conceive of their place within the universe. Chaos spurs innovation by encouraging individuals to construct unique explanations for phenomena even if the concept is not fully understood.

Acknowledging chance's prevalence by utilizing it to create forces humanity to reshape their view of existing systems. Chance is defined as design-devoid occurrences determined by an assemblage of complex causes humanity does not comprehend. Poincaré suggests when "a very small cause which escapes our notice determines a considerable effect we cannot fail to see, [...] we say that that effect is due to chance" (Poincaré, 3). Humanity finds the concept that "nature would appear [...] to

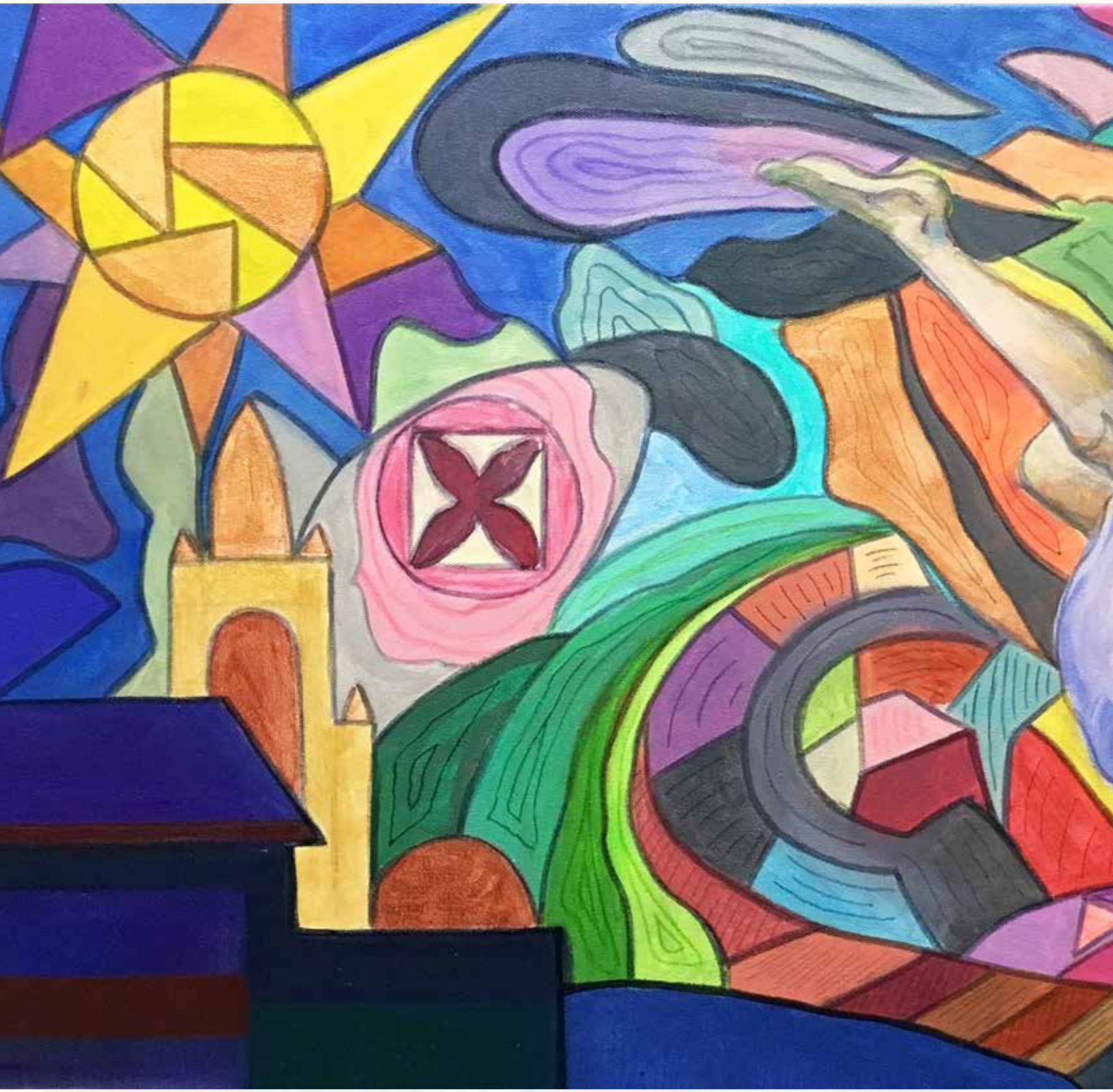
Puzzle Piece

PHOTOGRAPH BY MIKE GE

be given up to chance" (Poincaré, 5) disconcerting because it suggests that any efforts to create meaning or narrative are fruitless. Like chaos, chance paradoxically can be used to create. Contradictory to the concept of creating art with designed intent, some artists advantageously employ chance to explore an unreasoned order and question the perceived boundaries of art. John Cage's composition 4'33'' profoundly emphasizes the chance-based sounds that make each performance different and force the listener to reflect on their own emotional state within the timeless span of near- silence. His Imaginary Landscape No. 4 draws from the spontaneous noise of radios, suggesting meaning and artistic value are inherently embedded in fortuitous occurrences. Similarly, Jean Arp created collages by "chance movements of his hand... [which]...had achieved what all his efforts had failed to achieve" (DeLooze, "Chance and Design", 17) . His works of spontaneity force the the viewer to question if the art was designed, made by chance, or by a fusion of the two. Though Poincaré emphasized "chance is only the measure of our ignorance" (Poincaré, 1), chance-based art advocates for significance generated by unpredictable phenomena. Can there be meaning in art even if the maker was directed by a force out of their control? Arp played a vital role in the anti-art of Dadaism, a movement which undermined rationalist academic art foundations and explored the meaninglessness of order. Dada artists suggested that art produced with chance can convey a personal message, stimulate reflection and create meaning.

Chance can also be used to stimulate scientific breakthroughs: Jacques Monod suggests "chance alone is at the source of every innovation, and of all creation in the biosphere" (Monod, 145). In science's methods, chance hinders development of cause- and-effect relationships because it creates experimental uncertainty. Yet chance also spurs accidental findings and encourages scientists to further explore nature's unpredictable laws. Quantum theory is the antithesis of accepted discipline principles because it states that humans cannot accurately explain or predict phenomena. Heisenberg's Copenhagen Interpretation explores the paradox that "we describe our experiments in terms of classical physics...[yet we have] the knowledge that these concepts do not fit nature accurately" (Heisenberg, 1). Classical physics serves as an objective, orderly toolbox to explain phenomena, yet it is constantly limited by the forces of uncertainty. As an electron's movement is measured, "the observation itself changes the probability function [of its path] discontinuously" (Heisenberg, 7). Acknowledging this uncertainty allows humanity to accept chance's impact on scientific discovery and approach new investigations with a more open mindset.

The vastness of the cosmos implies that humans are barely threads in the fabric of the universe and are unaware of the textile's composition. The universe is filled with indeterministic occurrences and matters outside of the sphere of humanity's understanding. Embracing this chaos spurs unique and powerful multi-disciplinary theories that force humanity to re-evaluate meaning, acknowledge limitation, and create with an enlightened mindset. These ideas suggest that admitting limitations and embracing the enigmatic allow for a better understanding of human identity. Chaos can be approached with a sense of meaninglessness, or instead with the knowledge that individuals can use it to build meaning and create their own narrative.



Life-Future

PAINTING BY JENNIFER XIANG

Owls and Bats and Snakes and Oh My:

The Unexpected Ecological Effects of Fire, Urbanization, and Climate Change

An Excerpt

BY STEPHANIE PHILPOTT

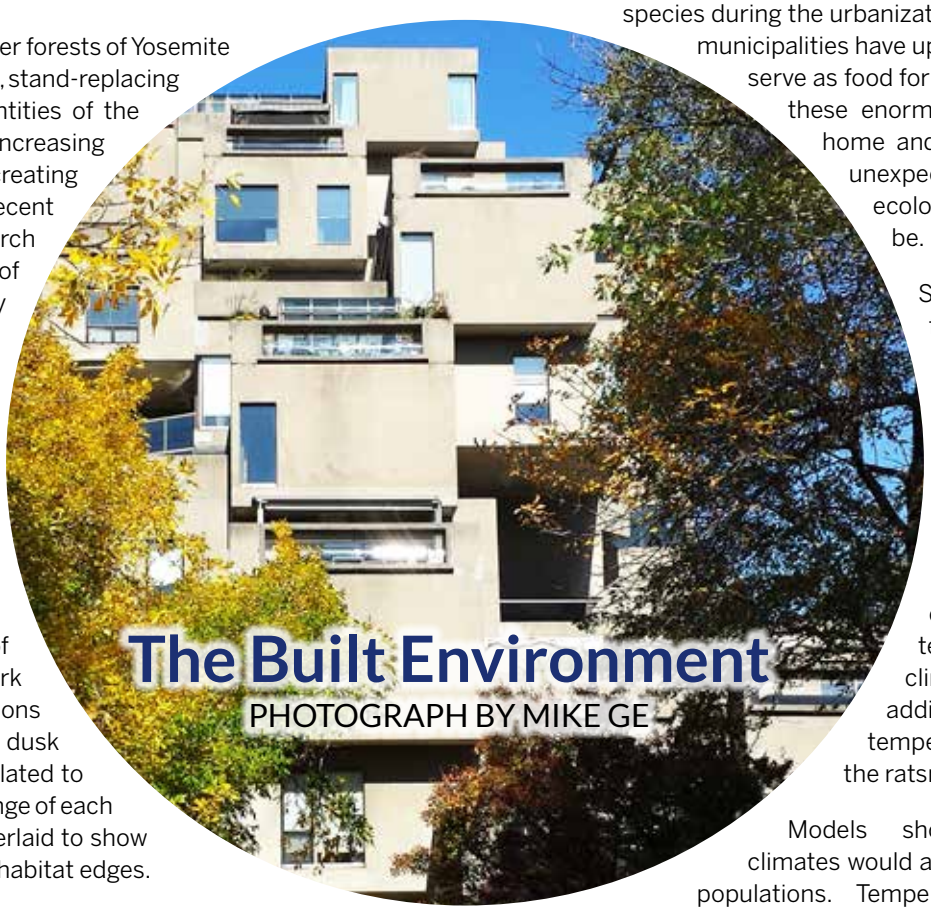
Simple truths regarding ecology are commonly assumed: fire is bad, urbanization harms species, and in climate change, there will be no winners. As grounded in reason as these assumptions may seem, they discount the significance of a single ecological change to create reverberations throughout an ecosystem. The interdisciplinary field of ecology is dependent on complex interactions between biotic and abiotic factors, and the results ae often unexpected.

Deep in the mixed-conifer forests of Yosemite National Park California, stand-replacing fires devour large quantities of the overstory vegetation, increasing heterogeneity and creating habitat edges. Recent climate change research showing evidence of increasing fire intensity and duration has spurred concern for the California spotted owl (*Strix occidentalis*), leading to a rise in ecological studies.

Using radio-telemetry, researchers studied the home range of the Yosemite Park population. Point locations were collected between dusk and dawn, then triangulated to determine the home range of each owl. Fire maps were overlaid to show burned vegetation and habitat edges.

Researchers were amazed to find that owls were utilizing the burned landscape for foraging. Individuals preferred to forage in areas with small patches of high-severity burned vegetation, and were even found to increase their home range to include high contrast edges. This phenomenon may occur because high intensity fires cause loss of overstory vegetation, resulting in increased growth of shrubs, the ideal habitat for prey. Counterintuitively, fires appear to be beneficial for the species and may aid in conservation efforts.

Conservation efforts don't often favor urban areas; however, a recent study has shown that Australian cities host an average of 32 threatened species with 33% of endangered species residing within 99 cities. Perhaps the most astonishing of these species is the grey-headed flying fox (*Pteropus poliocephalus*), Australia's largest bat.



The Built Environment

PHOTOGRAPH BY MIKE GE

It can be hard to picture flying foxes in Melbourne, a city with over 4.5 million residents; however, their population has seen explosive growth. Current estimates place the population of bats near 30 thousand individuals — or roughly 1 bat per 150 citizens! This increase may coincide with the planting of food species during the urbanization of Melbourne. Most municipalities have up to six street trees that serve as food for the flying fox —making these enormous bats feel right at home and further showing how unexpected the results of ecological interactions can be.

Slithering through forests in Ontario, Illinois, and Texas, the North American ratsnake (*Elaphe obsolete*) inhabits a wide range of latitudes, allowing for observation throughout multiple climates. Research teams stimulated climate change by adding a 5.4 ºF increase in temperature to a model of the ratsnake's thermal biology.

Models showed that warmer climates would actually benefit all three populations. Temperature increases will increase daytime foraging in Illinois and Ontario populations and nocturnal foraging in the Texas population. Due to their unique habitat variability, climate change may be a surprisingly ambiguous issue for the North American ratsnake.

Outwardly simple ecological outcomes can be hard to predict and results of research can seem almost impossible at first glance. Flying foragers thriving in fire-ridden forests, endangered populations propagating in metropolitan Melbourne, and slithering serpents stealing the crown as the conceivable champions of climate change aren't scientific oddities. They are examples of intricate ecological principles in action and increasing our understanding of them provides us with the opportunity to uncover more of our extraordinary world.

Mother Nature

PAINTING BY LISA-MONIQUE EDWARD

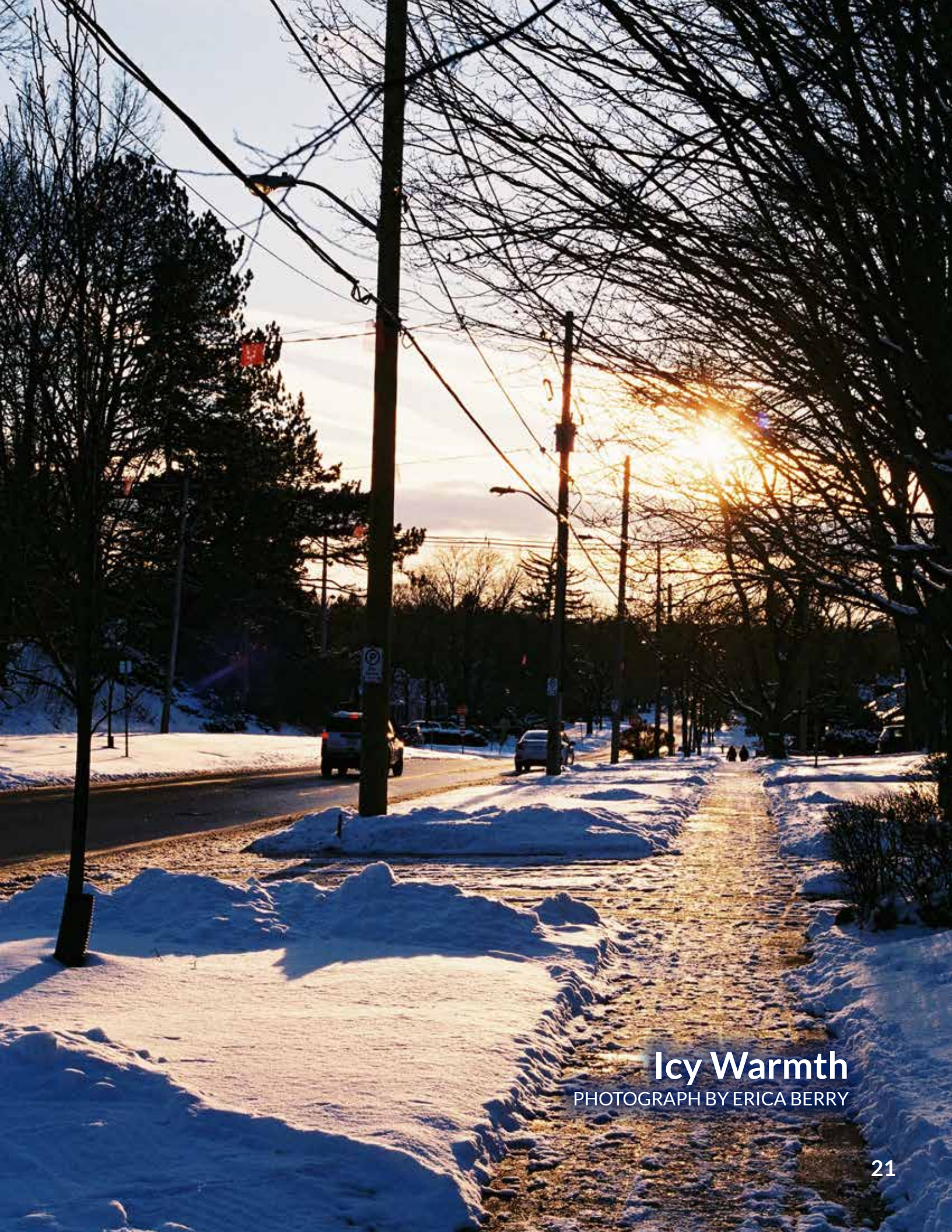
Global Economy

PAINTING BY JENNIFER XIANG

Where Credit is Due

BY MANBIR GREWAL

Michael Jordan – often regarded as the greatest basketball player to play the game, he brought a unique spark to the game that is commonly attributed to the revival of the league. During the 1970s, NBA viewership was at an all-time low; sales plummeted and the association was on the verge of bankruptcy. The credit for saving the league, however, is often misplaced in Jordan, and better applied to the likes of Magic Johnson and Larry Bird. Johnson and Bird were two college superstars whose presence changed the nation both on and off the court. They were engaged in a fierce rivalry, eventually meeting in the NCAA, or college basketball, finals in 1979; the most viewed game in the history of American basketball. The high viewership was partly due to the race of Bird, a white player from Indiana State – a primarily Caucasian institution – in a league that was predominantly African-American. Caucasian viewers identified with the player, and named him the "Great White Hope". The NBA at that time was regarded as a "black league," the sport being plagued with racial stigmatism and blatant racism. As Bird and Johnson turned professional, they carried their rivalry into the NBA, bringing with them fans into a league that was on the verge of bankruptcy. With the increased traffic, the NBA was able to acquire another broadcasting licence via CBS and propel itself into being the success it is today. However, the greater accomplishment was the unification of a divided nation through a mutually-appreciated medium. They both spoke against the lingering discrimination pervading the era of segregation, and managed to make an impact lasting far beyond themselves. With Bird and Magic each representing white and black communities respectively, their bond of friendship helped shaped a generation of viewers who were less appreciative of blunt bigotry and racism. Fans today are of many cultures appreciate the sport for what it is, rather than persisting with a narrow-sighted stereotype.



Icy Warmth

PHOTOGRAPH BY ERICA BERRY

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The Flow

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