



# Making youth power count in national development

PASCAL VILLENEUVE

IN Bangladesh, there are an estimated 30 million adolescent boys and girls between the ages of 10-19 who represent 20 per cent of the population, while 40 percent of population comprises of children alone. In a country where nearly half the population is aged below 18, investing in young people cannot be over-emphasized.

At present, the situation of adolescent girls aged between 10 and 19 mirrors that of adult women. It is characterized by inequality and subordination of adolescents within the family and society, leading to widespread practice of child marriage, marginalization or exclusion from health, education and economic opportunities and a vulnerability to violence and sexual abuse.

But to tap the power and energy of youth, there is a dire need to make greater investments in the youth population in order to ensure that the positive energy of youth creates a visible difference in the country's overall development.

Meanwhile, over the past few decades urbanization in Bangladesh has progressed at a rapid pace. Urban slum areas currently have the fastest growing population in Bangladesh. Dhaka city's population jumped from 0.5 million to 11 million between 1961 and 2001 – a 22times leap in just 40 years.

Most adolescents in urban slums are or have been child labourers with little or no schooling.

Although they are born into a vicious cycle of poverty, many adolescent girls and boys dream of breaking free and eventually leaving the slums.

**Changing Fortunes**

Eighteen-year-old Sonia Akhtar, who was born and raised at Tekerbari slum and 17-year-old Yasin living in Vasantek slum in Dhaka are among some glowing examples of positive change. Missing out on schooling when she was a child, Sonia is now in class VIII. She is not a typical child of the slum doing menial jobs and receiving charity. She is a member of an adolescent club and has received Life Skills Based Education.

Sonia learnt how to bake after a training programme organised by an NGO partner last year and has been able to set up her little bakery at home with an adolescent stipend of Tk 15,000 (USD 195). Her cakes and doughnuts are supplied to two nearby tea stalls. "The bakery has helped me contribute to my family's income which has helped delay my age of marriage," Sonia added.

Like Sonia, Yasin had dropped out of school when he was

in class VIII. Under the same stipend programme, he took training on mobile phone servicing last year. The stipend programme helps adolescents come up with innovative ventures that give them a competitive edge. As a result, adolescents like Sonia and Yasin are earning their livelihoods through various innovative ventures like tailoring, embroidery and opening beauty salons.

**UNICEF and adolescents**

Adolescent empowerment is, therefore a key focus of UNICEF's projects and activities. With our partners, the organisation is working towards building the self-esteem, confidence and knowledge of young people to ensure greater adolescent participation in decision making mainly through life skills-based education.

The idea is to give adolescents a sense of purpose by equipping them with new skills that they can pass onto others. The Swimsafe programme trains rural adolescents to become swimming instructors so that they can pass on their knowledge to younger children in order to prevent drowning.

UNICEF also provides young people with an avenue for self-expression and has teamed up with a number of media organizations across Bangladesh to advocate the rights of children and adolescents. It encourages adolescents to speak their minds on television on shows like Our Voice (broadcast on BTV) where they quiz policymakers mainly on development issues.

Another example is Bangladesh's first online news agency for children titled, 'Hello'. This feeds child related news to the media by children aged between 10 to 17 years. For big events, such as when Cyclone Mahasen hit the coastal areas of Bangladesh or World Day Against Child Labour, child journalists have worked together to bring about a comprehensive view of the topic.

The key strategies of adolescent girls and boys empowerment include life skills based education, while community participation and involvement is strengthened through the establishment of local support groups with participation of parents, influential community members and young people. Institutional capacity building of secondary stakeholders in the Government and NGOs; stipends for income generation activities are also ways to strengthen adolescent development while Sport for Development a relatively recent initiative empowers and develops life skills and confidence amongst adolescents through sport.

The youth in Bangladesh accounts for all of its future, so they must be acknowledged as a continuing priority.

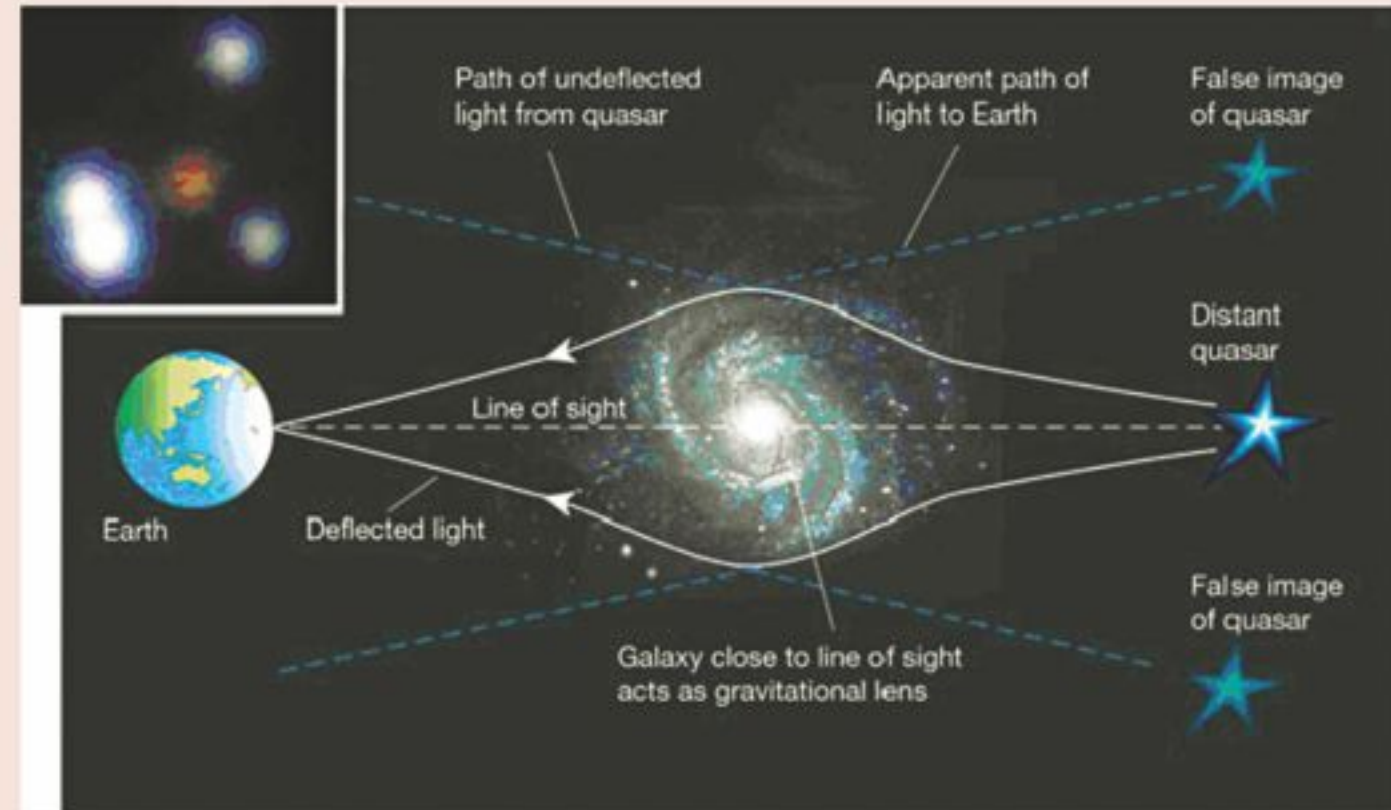
The writer is the Representative of UNICEF Bangladesh.



## Dark matter: Gordian knot of cosmology

QUAMRUL HAIDER

THERE is an adage, "What you see is what you get." In the case of our Universe, it is au contraire – what you see is not what you get. Just when we thought that all the mysteries of the Universe have been unmasked, cosmologists were abashed to find out that almost everything around us cannot be seen or detected. They were further embarrassed to note that this "shadowy substance," the so-called dark matter or missing mass, determines the shape, age, size, and destiny of the Universe.



The theory of the missing mass was first proposed in the 1930s by Fritz Zwicky, an eccentric astrophysicist at Caltech, from observations that some galaxies travel at unexpectedly high speeds in a cluster of other galaxies. His work followed by several anomalous cosmological observations led cosmologists to conclude that the Universe is made up of two kinds of matter – ordinary matter that is luminous and can be seen, and dark matter that is non-luminous and cannot be seen because it neither emits detectable radiation nor interact with light.

Why does the Universe need dark matter? Stars moving in nearly circular orbits about their galactic center are bound by the gravitational force. According to laws of physics, their orbital speeds should decrease with increasing distance from the center. But observations indicate otherwise; constant orbital speeds beyond the visible edge of the galactic disk. This is quite unlike the orbits of our planets where larger is the orbital radius, slower is the speed. To explain a speed that is independent of the radius demands that the mass of all the matter – stars, gas, and interstellar dust, that lies inside the star's orbit, increase linearly with the radius. Visual observations, however, show that the mass is constant and most of it is concentrated in the central region.

To resolve this dilemma, astronomers concluded that there is as much, if not more, of a galaxy unseen as there is seen. Galaxies must contain a large quantity of matter to supply the necessary gravitational force for stars to maintain a constant orbital speed. Calculations indicate that indeed galaxies should contain huge amounts of dark matter, some as much as 10 times their visible mass. As with individual galaxies, galaxy clusters also exhibit similar effect, suggesting there is more matter in the clusters than we can account for. Dark matter is the invisible gravitational glue that holds together galaxies and clusters of galaxies.

Whatever dark matter is, it cannot hide from us. We

know of its existence from a phenomenon known as "gravitational lensing." As light from distant galaxies pass by a cluster of galaxies on its way to Earth, it is deflected by the gravitational field of the cluster, just like bending of light by a lens. The amount of deflection light undergoes cannot be explained by luminous matter alone, suggesting the presence of relatively large amounts of dark matter.

There is now irrefutable evidence that visible matter accounts for only 4% of the Universe's mass. The remaining 96% is invisible of which approximately 21% is believed to be dark matter, also known as cosmological Spam. The remaining 75% is attributed to a pervasive "dark energy."

What can this dark matter be? Dark matter is a catch-all term that is used to describe a variety of candidates, although none is proven. They are divided loosely into two categories: MACHOs (MASSive Compact Halo Objects) and WIMPs (Weakly Interacting Massive Particles). Possible MACHOs are massive black holes, neutron stars, burnt-out white dwarf stars, or brown dwarf stars. The first suspect of WIMP is neutrino. Others include particles predicted by theory but not discovered as yet, such as magnetic monopoles, photinos, and several exotic elementary particles produced during the Big Bang. Another contender for dark matter is the hypothetical axion, believed to be lighter than the WIMPs. Current theories favor WIMPs over the MACHOs.

The nature of the dark matter is still an enigma, a Gordian knot in cosmology. Finding this elusive matter would be a major step toward understanding the structure and evolution of the Universe. It will also enable us to ascertain whether the Universe is destined to eternal expansion or eventual collapse into its point of origin.

The writer is a Professor of Physics at Fordham University, New York.

FLUSHOUT

TWISTED AFTERGLOW

### Gravity-censored fossil light

RESEARCHERS have discovered a subtle twist in the primeval light that formed shortly after the universe came into being. They hope it can reveal new secrets about the moments after the Big Bang.

This afterglow, called Cosmic Microwave Background, or CMB, was created out of hot ionized plasma some 13.7 billion years ago, when the universe was just 380,000 years old. A small fraction of this light is polarized (meaning the light waves vibrate in one plane).

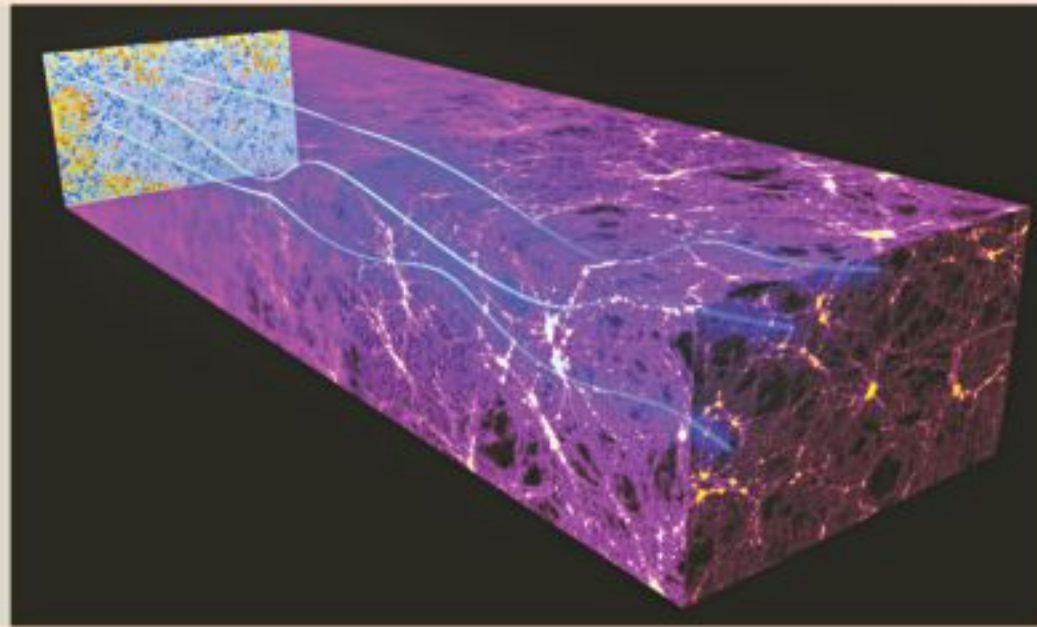
Researchers had already detected this polarized light in one pattern, known as "electric" or E-mode polarization. But using the South Pole Telescope in Antarctica and the European Space Agency's (ESA) Herschel space observatory, researchers for the first time detected polarized light from the CMB in the "magnetic" or B-mode.

The observed B-mode pattern arose from gravitational lensing, in which light gets bent and deflected by massive cosmic objects such as galaxy clusters and lumps of mysterious dark matter, researchers said.

But there is another way to produce B-modes as well: primordial gravitational waves produced during the earliest moments of the universe, when it was in its rapid "inflation" phase, mere trillionths of a second after the Big Bang.

During inflation, the idea goes, the universe expanded faster than

Photons in the Cosmic Microwave Background (CMB), as detected by ESA's Planck space telescope) are deflected by the gravitational lensing effect.



the speed of light, doubling in size 100 times or more in just a few tiny fractions of a second. (Einstein's theory of special relativity holds that no information or matter can travel faster than light through space, but this rule does not apply to inflation, which was an expansion of space itself.)

The new detection should provide a sort of baseline that will aid future efforts to measure B-modes produced by gravitational waves, which in turn could reveal a great deal about how our universe grew in its earliest moments, researchers said.

Source: **Live Science**

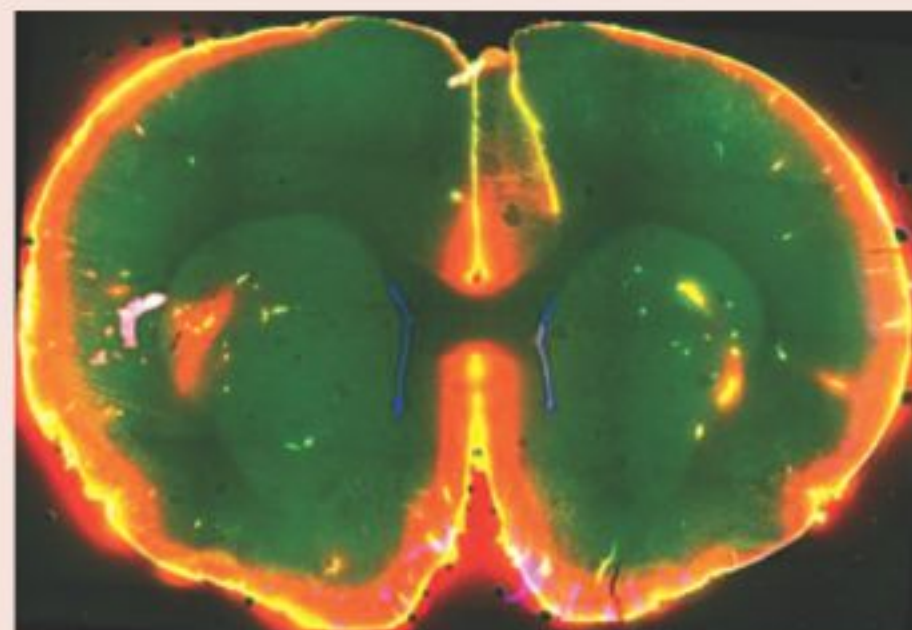
### Sleep as brain cleaner

A good night's rest may literally clear the mind. Using mice, researchers showed for the first time that the space between brain cells may increase during sleep, allowing the brain to flush out toxins that build up during waking hours. These results suggest a new role for sleep in health and disease. The study was funded by the National Institute of Neurological Disorders and Stroke (NINDS), part of the NIH.

"Sleep changes the cellular structure of the brain. It appears to be a completely different state," said Maiken Nedergaard, M.D., D.M.Sc., co-director of the Center for Translational Neuromedicine at the University of Rochester Medical Center in New York, and a leader of the study.

For centuries, scientists and philosophers have wondered why people sleep and how it affects the brain. Only recently have scientists shown that sleep is important for storing memories. In this study, Dr. Nedergaard and her colleagues unexpectedly found that sleep may be also be the period when the brain cleanses itself of toxic molecules.

Source: **Science Daily**



Scientists watched dye flow through the brain of a sleeping mouse.

A XYDLBAAXR is LONGFELLOW  
On letter stands for another. In this sample, A is used for the three L's, X for the two O's etc. Single letters, apostrophes, the length and formation of the words are all hints. Each day the code letters are different.

9-21 CRYPTOQUOTE

O PDAT EIOCK DY O XUVAKODA  
UX SWOTAIYY, ROPDAS  
IGICJKEDAS DA DKY GDMADAKJ  
XCIYEIA DAKU YRDWIY.

Yesterday's Cryptoquote:  
IN SOME FAMILIES, "PLEASE" IS DESCRIBED  
AS THE MAGIC WORD. IN OUR HOUSE,  
HOWEVER, IT  
WAS "SORRY".  
- MARGARET LAURENCE

**CROSSWORD**  
BY THOMAS JOSEPH

**ACROSS**

- 1 Autumn dropper
- 5 Stallions' mates
- 10 "Born Free" lion
- 11 Ticked
- 13 O'Grady of "NYPD Blue"
- 14 Baby's toy
- 15 Speechless
- 17 Shade tree
- 18 Linear measurements
- 19 Rock's — Fighters
- 20 Hagen of the theater
- 21 Satyr's kin
- 22 Chilly dessert, for short
- 25 Inclines
- 26 Sprints
- 27 Vote seeker, for short
- 28 "I — Rock"
- 29 Soda can opener
- 33 New England catch
- 34 Georgia neighbor

**35** Friend of Athos and Porthos

**37** Swiss peaks

**38** Peaceful

**39** Future stallion

**40** Car's scars

**41** Leg bend

**DOWN**

- 1 Permitted
- 2 Gladness
- 3 Chinese
- 4 Patsies
- 5 Mason of movies
- 6 Accumulate
- 7 Deep groove
- 8 Singer
- 9 Hit show
- 12 Exorcism
- 16 "Beetle" targets
- 21 Plan B
- 22 Brawl
- 23 Uncon-firmed
- 24 When lenged
- 25 Soda choice
- 27 Throbs
- 29 Palette
- 30 Hawk's grasper
- 31 Plan B
- 32 Treat turkey
- 36 Fellows

**Saturday's answer**

NEW CROSSWORD BOOK! Send \$4.75 (check/m.o.) to Thomas Joseph Book, P.O. Box 538475, Orlando, FL 32853-8475

"You can avoid reality, but you cannot avoid the consequences of avoiding reality."  
- Ayn Rand (1905-1982)

**NORTH SOUTH UNIVERSITY**  
The first private university in Bangladesh

**TENDER NOTICE**

Tender No.-NSU/13-07

North South University is inviting sealed offer from the bona fide / reputed supplier for supplying the item as mentioned below:

SL. No.	Description of item	Quantity
01.	Brand Computer	109 nos.

Interested bidders may collect schedule of tender from the Finance & Accounts Department of the NSU from 10:00a.m. to 4:00p.m. Sunday through Thursday on all working days till October 30, 2013 by paying non refundable taka 1,000.00(One Thousand) only in cash for schedule.

The bidders must submit **earnest money@ 2.5%** of quoted price in the form of pay order issued from any scheduled bank drawn in favor of North South University along with their offer. The sealed offer must be **submitted on October 31, 2013 within 2.00 p.m.** at the office of the undersigned. The offers will be opened at 2:15 p.m. on the same day. Representatives of the participating bidders may remain present at the time of opening the bids. NSU authority reserves the right to accept or reject any or all the tenders without showing any reason.

**Director (Logistics & Resources)**  
North South University  
Plot # 15, Block # B, Bashundhara, Dhaka-1229  
Phone: 8852000, Ext. 1204 & 1213  
Fax: 8852016, 8845165  
Website: [www.northsouth.edu](http://www.northsouth.edu)

**North South University**  
Institute of Modern Languages  
\* Semester: Fall 2013 \*

**Certificate in English Proficiency**

CEP is a certificate course for you if you are interested in improving your general proficiency in English. The CEP program primarily focuses on productive and receptive skills i.e. speaking, writing, reading, and listening, and then it makes some reference to business or occupational English. Special emphasis is given on enhancement of vocabulary and competence in grammar. Certificates are awarded upon satisfactory completion of the course.

**Certificate in French Proficiency**

CFP focuses on developing competence in basic communication skills in the French language. The CFP program is usually composed of students of NSU as well as **interested learners from outside** the University. Certificates are awarded on satisfactory completion of the course.

**Certificate in Spanish Proficiency**

CSP is for both NSU students and **learners from other institutions and organizations** as well as for people interested in immigration to the USA and Canada. Special emphasis is given on the spoken form of the Spanish language. Certificates are awarded upon satisfactory completion of the course.

**Certificate in Bangla Proficiency**

CBP is a specially designed short course for **foreigners** interested in developing or improving their communicative ability in Bangla. The CBP program primarily focuses on the speaking and listening skills in Bangla. Special attention is given to enhancement of useful vocabulary. Certificates are awarded upon satisfactory completion of the course.

**Classes start: Sat, 02<sup>nd</sup> November, 2013**

**Course Fee for French, Spanish & Bangla Tk.6000 only**

**Duration of all courses: 2½ months**  
**Class days: Fridays and Saturdays**  
**Class time: 10am-12pm**

**Course Fee for English Tk.7000 only**

**All courses are taught by highly qualified and experienced faculty members**

**North South University**

**Tel: 02-8852000, Ext. 1012**  
**Phone-in time/office hours: 11am-4pm, 7 days a week**  
**Level 6, Room: NAC 621, NSU Campus, Bashundhara R/A, Dhaka 1229**