7 Environmental Conservation Through Urban Density

The first image that comes to mind when considering environmental sustainability is usually not a densely packed urban landscape. However, since *Compact City: A Plan for a Liveable Urban Environment* was released in 1974 by authors George Dantzig and Thomas Saaty, most urban planners agree that the most effective way to keep the planet green is to pack as many people as possible into compact cities. The most important reason to contain people in cities, they say, is to decrease sprawl, the expansion of urban areas into surrounding land. Not only does the infringement of human populations into undeveloped areas destroy arable soil and ecosystems, but it also creates suburbs that are energy inefficient and automobile dependent. Building cities upward rather than outward is the best way to avoid this.

If everyone lived in cities, the need for automobiles would be greatly reduced, which would minimise the pollution they cause and conserve the fossil fuels they require to operate. Studies show that people who live in densely populated cities, like New York, are 40 per cent less likely to own cars and use far less gasoline because public transit is readily available and walking or cycling is often an option. The fact that driving in cities has become increasingly difficult also contributes to people giving it up. With parking restrictions and expensive toll fees to contend with, not to mention the glut of other vehicles that, sadly, remain on the road, many city dwellers simply choose not to drive when there are far more attractive transportation alternatives available.

But the environmental sustainability of cities has to do with more than just transportation: it's also about housing. The vast majority of people in high-density cities live in apartment buildings, which are the most energy-efficient residential structures in the world. The shared walls of apartment buildings mean that less heat is lost and thus, less fuel is used to generate it. In addition, because apartments are usually smaller than, say, a typical single-family home in the suburbs, far less electricity is consumed per household - as much as 50 per cent less than in sparsely populated areas, actually. It's thus no surprise that the carbon footprint of most high-density city inhabitants is around 30 per cent smaller than the global average.

Ultimately, while being shoulder-to-shoulder with millions of other people may seem unpleasant, it is the best way to handle our ever-growing population while preserving the resources that subsequent generations will need to survive. The cities that exist today are far from perfect, but that just means that there is still a lot that can be done - from replacing diesel fleets with hybrid and electric ones to updating archaic, inefficient infrastructure - to make urban communities not only more sustainable but also nicer places to live.

LIVEWORKSHEETS

Complete the sentences below.

*Choose **ONE WORD ONLY** from the passage for each answer.*

18 The primary reason for containing people in cities is to limit .....

19 A major decrease in the need for cars would reduce ..... and save fossil fuels.

20 Due to their smaller size, urban apartments use less ..... than suburban homes.

21 Living in densely populated cities is the best way to protect resources for future .....

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density n. mật độ **sustainability** n. tính bền vững **pack** v. nhét chặt ních **compact** adj. chật ních, chen chúc **sprawl** n. vùng mở rộng lộn xộn, ngổn ngang **infringement** n. sự xâm phạm **arable** adj. có thể trồng trọt được **contend with** phr. chiến đấu với **glut** n. sự tràn ngập, sự quá mức **sparsely** adv. thưa thớt, rải rác **carbon footprint** phr. dấu chân cacbon (lượng cacbon con người thải ra môi trường) **fleet** n. đoàn tàu, đội máy bay **archaic** adj. cổ

LIVEWORKSHEETS

8 Gene Therapy

A revolutionary treatment

Millions of dollars are spent on medical research each year, and although new techniques are being developed and important discoveries are being made at an unprecedented rate, the cures for a number of life-threatening diseases, like cancer and AIDS, continue to elude scientists. But there may be hope in the form of a treatment known as gene therapy, which involves using genetic material to manipulate a patient's cells. The idea was first proposed in 1972 by Theodore Friedmann and Richard Roblin in *Gene Therapy for Human Genetic Disease?* This article cited US physician Stanfield Roger's early notion that healthy DNA could be used to replace defective DNA in people with genetic disorders. Building off Roger's idea, Friedmann and Roblin suggested ways in which healthy DNA could be used to fix, replace, or supplement a faulty gene to make it function properly. Researchers quickly latched onto this innovative new concept, and the first gene therapy case was approved in the United States in September of 1990.

Although gene therapy has successfully cured patients with diseases such as leukaemia, haemophilia, and Parkinson's disease in the years since then, it is not without its problems. The most difficult part of administering healthy DNA to a patient is getting the unhealthy cell to accept it. While techniques that involve directly injecting the healthy DNA into the recipient cell have shown some success, the more commonly employed method is through the use of a vector - a DNA molecule that serves as a vehicle to carry foreign genetic material into another cell.

Viruses are the most commonly used vectors because they naturally invade cells. When they are used, some of the virus's DNA is removed and replaced with the therapeutic DNA, but the virus's structural sequence stays intact and serves as the 'backbone' of the vector. This tricks the patient's cells into allowing it to enter, but it does not always work as hoped. This is due to the fact that there is always the chance the patient's immune system will kick in and fight off the virus, killing the therapeutic gene at the same time. This process can produce an inflammatory response within the patient, and in certain cases, lead to organ failure.

Alternatively, the viral vector could potentially cause disease once inside the patient and even target more cells than it is supposed to, including ones that are healthy. Because of these risks, gene therapy is still considered experimental and the only way to receive it is through participation in a clinical trial. Doctors still have a long way to go before they understand all the potential effects gene therapy can have on a person's body, so research is likely to continue until further breakthroughs are made and both the Food and Drug Administration and the National Institutes of Health deem the treatment safe enough to enter mainstream medical practice.

LIVEWORKSHEETS

*Complete each sentence with the correct ending, **A-G**, below.*

22 When a virus is used as a vector, its structure

23 When an immune system fights viruses, it also

24 Due to certain dangers, gene therapy

A	destroys any genetic material that is meant to cure disease.
B	manages to cure a life-threatening disease.
C	accepts the healthy DNA that is added.
D	retains its basic form.
E	remains experimental for now.
F	invades the cells of the patient.
G	removes the diseased elements.

gene therapy phr. liệu pháp gen **unprecedented** adj. chưa từng thấy, không có trong tiền lệ **elude** v. lảng tránh, tránh né **genetic material** phr. vật liệu di truyền **manipulate** v. thao túng **supplement** v. bổ sung **leukaemia** n. bệnh ung thư bạch cầu **haemophilia** n. bệnh máu khó đông **administer** v. phân phát, phân phối **vector** n. vật trung gian **molecule** n. phân tử **sequence** n. tuần tự **kick in** phr. bắt đầu phát huy tác dụng **inflammatory** adj. dễ bị viêm **organ failure** phr. hội chứng rối loạn chức năng cơ quan **clinical trial** phr. thử nghiệm lâm sàng

LIVEWORKSHEETS

9 The Psychology of Emotion

Since they encompass such a wide spectrum of human behaviour, emotions have always been a central site of psychological study. One of the first figures to introduce a theory of emotion was the Greek philosopher Aristotle, who thought that they were connected to appetites. This idea held sway for centuries, until Charles Darwin formulated an evolutionary concept of emotions. Darwin suggested that emotions had evolved through natural selection and therefore must have a purpose. However, his ideas were supplanted as the field of psychology became more prominent.

A highly influential theory of how emotions work was developed independently by two scholars, William James and Carl Lange, in the late 19th century. This theory, which has came to be known as the James-Lange theory, suggested that physiological arousal leads to the experience of emotion. This was a reversal of the conventional conception that emotion was primarily mental in character. In James and Lange's conception, the body was the source of the emotional response. James suggested that the sense organs are the first part of the body to experience the stimulus of an outside object, and that the information from these is then passed to the brain.

As the James-Lange theory became the dominant conceptualisation of emotion in the early 20th century, it inspired criticism from other researchers. One critical response came from the Harvard physiologist Walter Bradford Cannon and his student Philip Bard in the 1920s. Cannon and Bard believed that emotional responses were the result of cognitive reactions within the hypothalamic structures of the brain, with the thalamic region being the centre of emotional response. According to Cannon and Bard, the physical responses to emotion could be considered separate from the mental responses, and did not always precede them.

While the James-Lange theory foregrounded the body, and the Cannon-Bard theory prioritised the brain, the two-factor theory of emotion offered a more balanced approach. This theory - put forward by Stanley Schachter and Jerome E. Singer in the 1960s - suggested that emotional reactions are based on two factors: physical arousal and mental labelling. Therefore, when a person experiences an emotion, they initially feel some form of physiological arousal, and then they search their environment for things they can use to label this as an emotion. This can occasionally result in misattribution, as when someone feels the physical symptoms of anxiety, but believes them to be related to romantic arousal. With no clear consensus emerging within psychological circles, it seems that the debate over whether it is in the mind or the body that emotions are formed is set to continue.

LIVEWORKSHEETS

Complete the sentences below.

*Choose **NO MORE THAN TWO WORDS** from the passage for each answer.*

25 The James-Lange theory countered the traditional idea of emotion as a ..... experience.

26 James believed that the ..... experience a stimulus before the brain does.

27 The signs of ..... can sometimes be confused with romantic sensations.

hold sway phr. thống trị **formulate** v. làm thành công thức, phát biểu có hệ thống **natural selection** phr. chọn lọc tự nhiên **supplant** v. thay thế **arousal** n. sự kích thích **reversal** n. sự đảo ngược **conceptualisation** n. khái niệm hóa **hypothalamic** adj. vùng dưới đồi (ở não) **thalamic** adj. (thuộc) đồi (của não) **foreground** v. làm nổi bật, nhấn mạnh **misattribution** n. sự phân bổ nhầm **circles** n. nhóm, vùng

LIVEWORKSHEETS

10 Speaking Pidgin

It has long been said that 'necessity is the mother of invention', and nowhere is this sentiment more applicable in the context of linguistics than it is for pidgin languages. Found throughout Africa, the Caribbean, Hawaii, and parts of Southeast Asia, pidgin languages are simple dialects that evolve when two or more groups must communicate for a prolonged period of time but their members do not share a common tongue.

Historically, pidgins arose due to the colonial encroachment of European powers into the New World during the 17th and 18th centuries. As the British, French, Portuguese, Spanish, and Dutch colonised various areas of the Americas, it was inevitable that they would come into contact with native peoples with whom they were unable to communicate verbally. Initially, they may have used a few hand gestures to get their point across, but people are innately inclined to language acquisition and eventually, words were learned and used to facilitate activities like bartering.

The slave trade, which saw millions of Africans exported to plantations in the Americas, is especially responsible for the further development of pidgin tongues. As a great many dialects were spoken throughout Africa and because people were seized from various parts of the continent, new slaves were often able to understand neither their captors nor their fellow slaves. In order to communicate at all, they were forced to adapt, picking up a word from one language here and a word from another language there. Eventually, through this method, conveying the most basic information became possible and people began to rely on this unstructured dialect as the language they used most.

While pidgins vary from group to group, they do share certain features. According to 19th century American folklorist Charles Leland, all pidgin languages sound similar to how a very young child might communicate. Specifically, the pronunciation of words is generally only approximated and the parts of speech are highly flexible, often being modified spontaneously. He also found that speakers of pidgin languages tend to ignore the conventions of language. For instance, rather than incorporating function words, like pronouns and prepositions, into their speech, they rely almost exclusively on content words. Essentially, speakers of pidgin languages, having a superficial knowledge of the most indispensable words and no regard for grammar, are able to convey their main ideas but not much more.

Of course, pidgin languages do not often last long. Generally, within a few decades, as children are born into the families of pidgin speakers, one group will have learned the language of the other or both groups will have learned a new common language. Sometimes, the necessity of speaking pidgin is removed when one group leaves an area. For instance, during the French occupation of Vietnam, many Vietnamese learned to communicate with their imperialist rulers in a pidgin French. When Vietnam declared its independence in 1954 and the French left, there was no longer a need for this dialect, so people mostly returned to speaking their primary languages. In the rare instances when pidgin does survive, meaning that children of the next generation adopt it as their mother tongue, it invariably evolves to become increasingly standardised and structured, with a fully developed vocabulary and system of grammar. Ultimately, it becomes a form of colloquial speech known as a creole.

LIVEWORKSHEETS

*Complete each sentence with the correct ending, **A-G**, below.*

28 To communicate with natives, Europeans first may have relied on

29 Slaves combined words from various dialects to allow for

30 According to Charles Leland, pidgin speakers do not stick to

31 Pidgin French in Vietnam is mentioned to exemplify

A	the process of providing structure to a pidgin language.
B	the use of body language.
C	a dialect that eventually became unnecessary.
D	the passing on of pidgin to the next generation.
E	communication with people in the Americas.
F	the enduring impact of colonialism on oppressed peoples.
G	the standards that generally shape verbal expression.

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pidgin n. tiếng lai, tiếng bồi (để giao tiếp giữa người thuộc nhiều nước) **encroachment** n. sự xâm lấn **bartering** n. hàng đổi hàng
plantation n. đồn điền quy mô lớn **seize** v. bắt giữ **folklorist** n. nhà nghiên cứu truyền thống dân gian **approximated** adj. xấp xỉ **part of speech** phr. từ loại
spontaneously adv. tự ý, tự phát **superficial** adj. hời hợt, nông cạn **indispensable** adj. rất cần thiết, không thể thiếu **colloquial** adj. thông tục **creole** n. ngôn ngữ creole (loại ngôn ngữ bắt nguồn từ tiếng bồi nhưng được ổn định và dần hợp vào ngôn ngữ chính qua thời gian

LIVEWORKSHEETS