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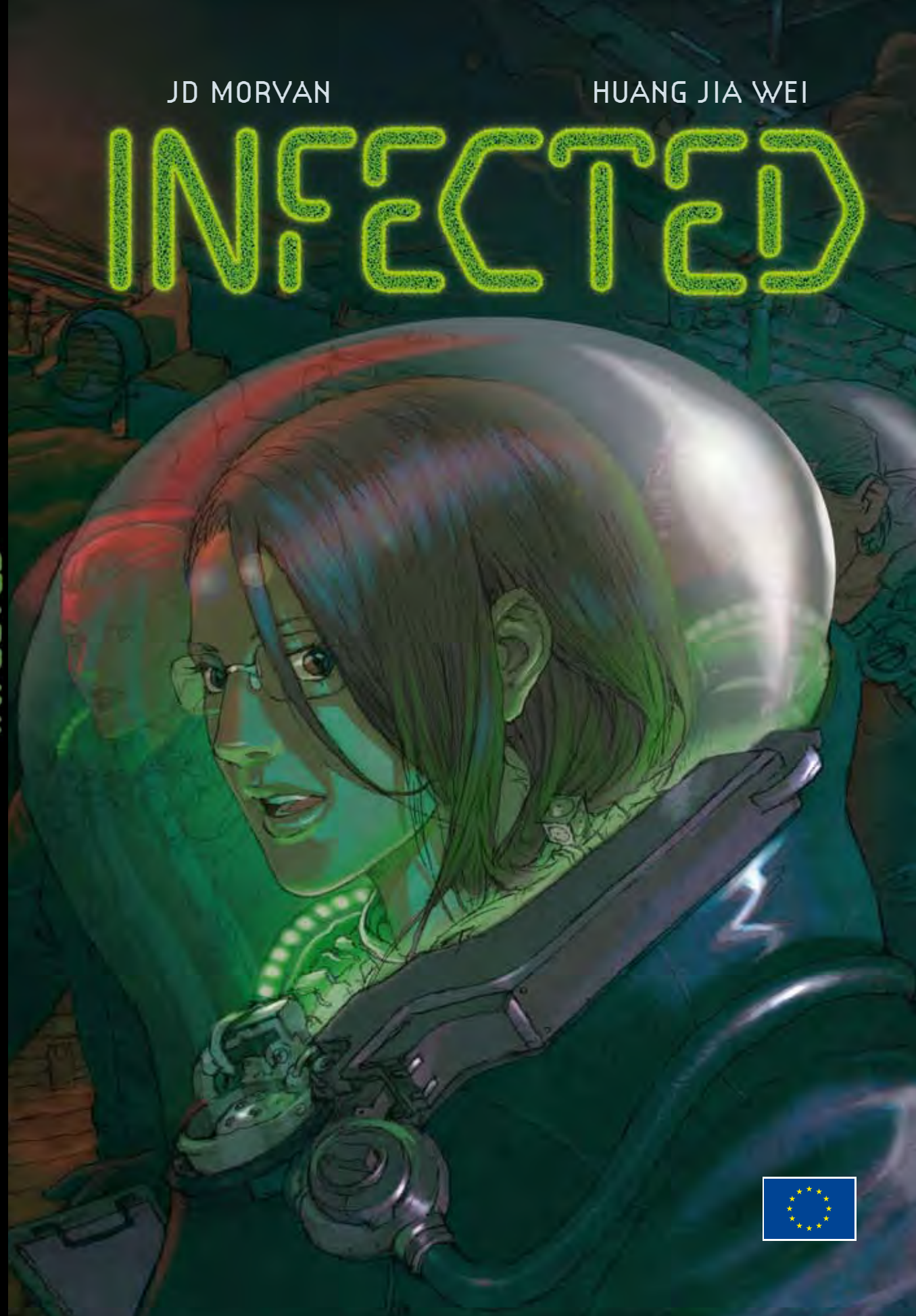
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JD MORVAN
INFECTED
HUANG JIA WEI

JD MORVAN

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INFECTED





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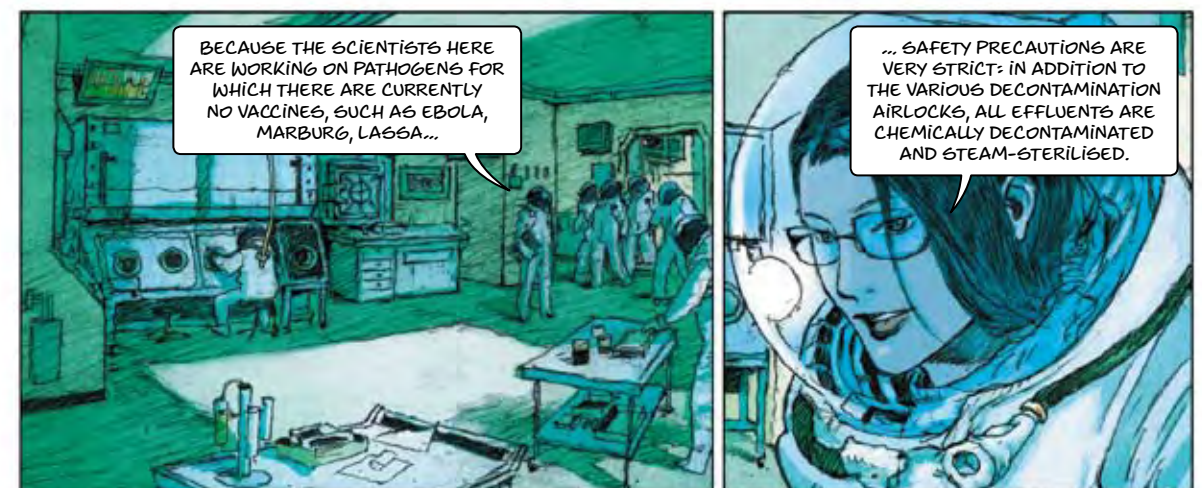
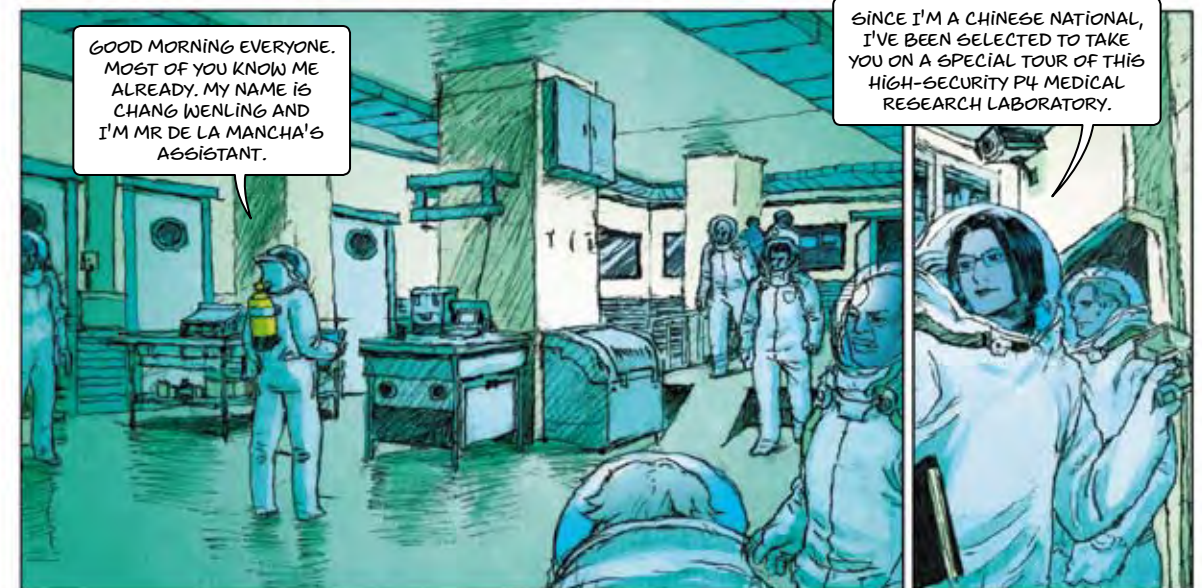
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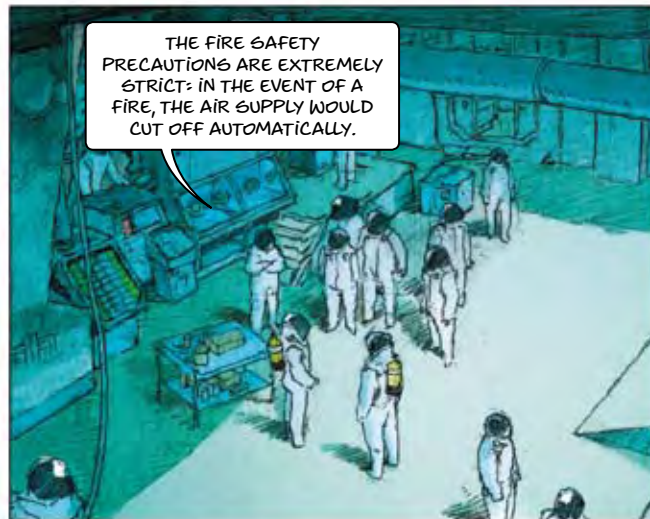
JD MORVAN

HUANG JIA WEI

INFECTED







THE FIRE SAFETY PRECAUTIONS ARE EXTREMELY STRICT: IN THE EVENT OF A FIRE, THE AIR SUPPLY WOULD CUT OFF AUTOMATICALLY.

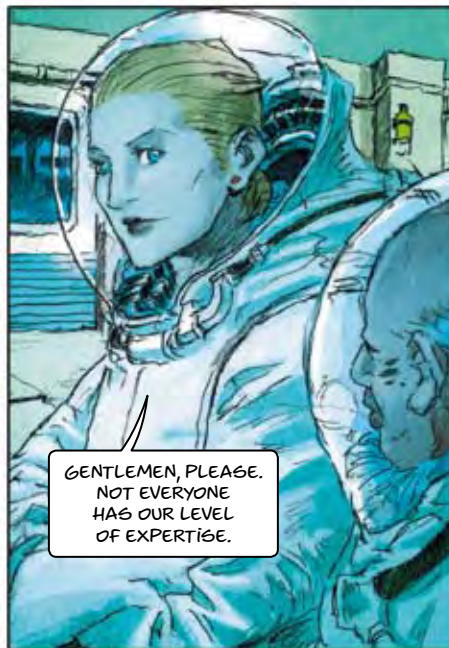


FOR THIS REASON, AND ALSO TO PREVENT STAFF FROM INHALING ANY VIRUSES, THE AIR WE ARE BREATHING COMES FROM OUTSIDE. I REMIND YOU THAT WE ONLY HAVE A 20-MINUTE AIR SUPPLY IN OUR OXYGEN TUBES.



ISN'T MY NEW ASSISTANT JUST BRILLIANT?

QUITE. IT'S GREAT HAVING SOMEONE WHO CAN DELIVER THE SPIEL.



GENTLEMEN, PLEASE. NOT EVERYONE HAS OUR LEVEL OF EXPERTISE.



IN PERSONAL ASSISTANTS YOU MEAN?



HA HA.



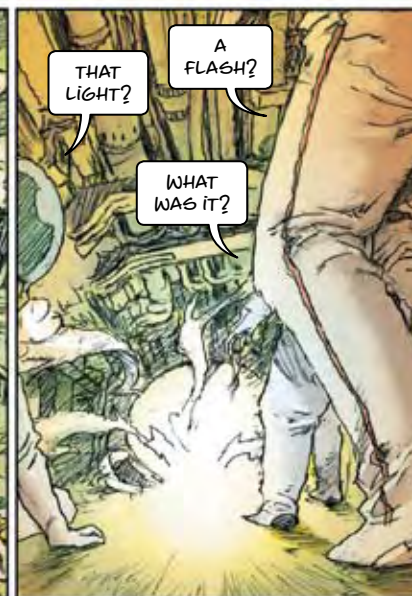
HE'S INCORRIGIBLE!



ALL AREAS ARE UNDER CONSTANT CAMERA SURVEILLANCE, AND THERE ARE NO BLIND SPOTS. THIS MEANS THAT THE GUARDS IN THE CONTROL ROOM CAN DETECT ANY INTRUDERS, IF BY ANY STROKE OF LUCK THEY'RE ABLE TO GET THIS FAR.



RIGHT, LET'S MOVE ON TO THE NEXT ROOM SO WE CAN GET INTO MORE SCIENTIFIC DETAIL.



THAT LIGHT?

A FLASH?

WHAT WAS IT?



THAT'S INCREDIBLE!

IMPOSSIBLE!!

WEIRD!

THAT...



AN INTRUDER!

I'M ALIVE...



THEY...
THEY DID
IT...



IT WORKED!!!!



I CAN'T
BELIEVE IT!!!!



EVACUATE
THE VIPs!!

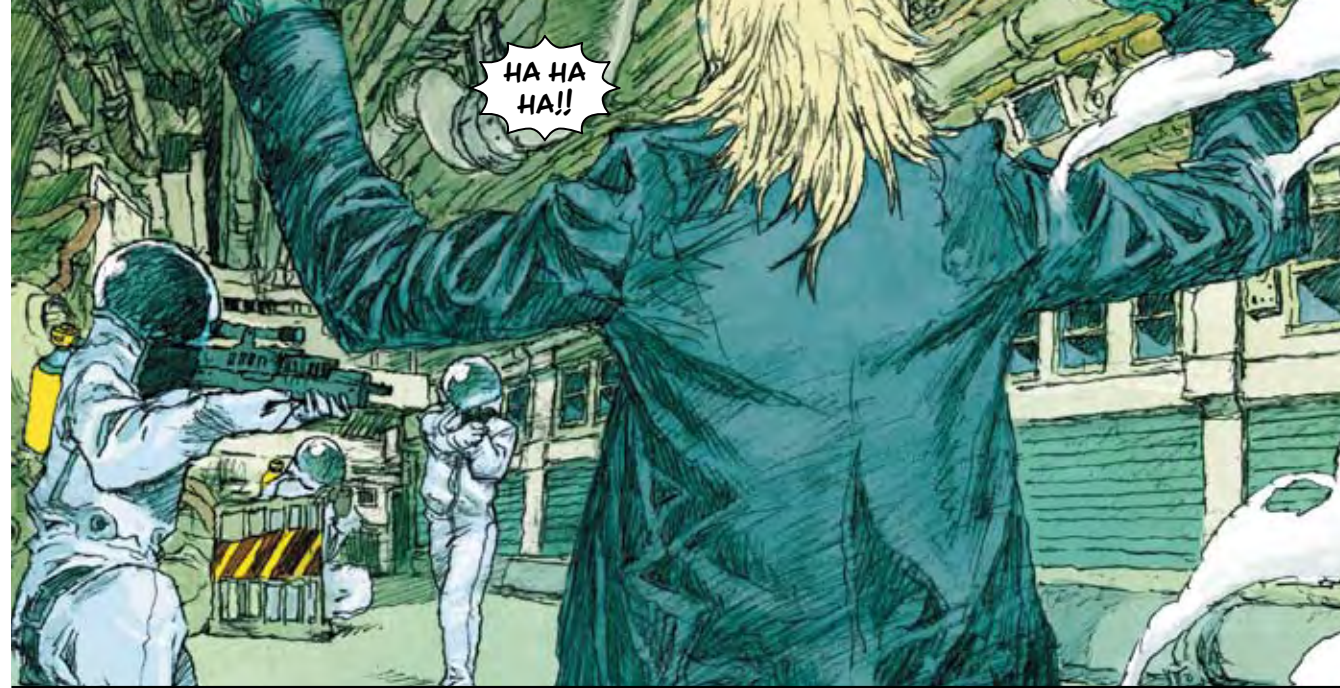


BUT,
WHAT?!...



HANDS
UP!!

I CAN'T
BELIEVE IT
MYSELF!!



HA HA
HA!!



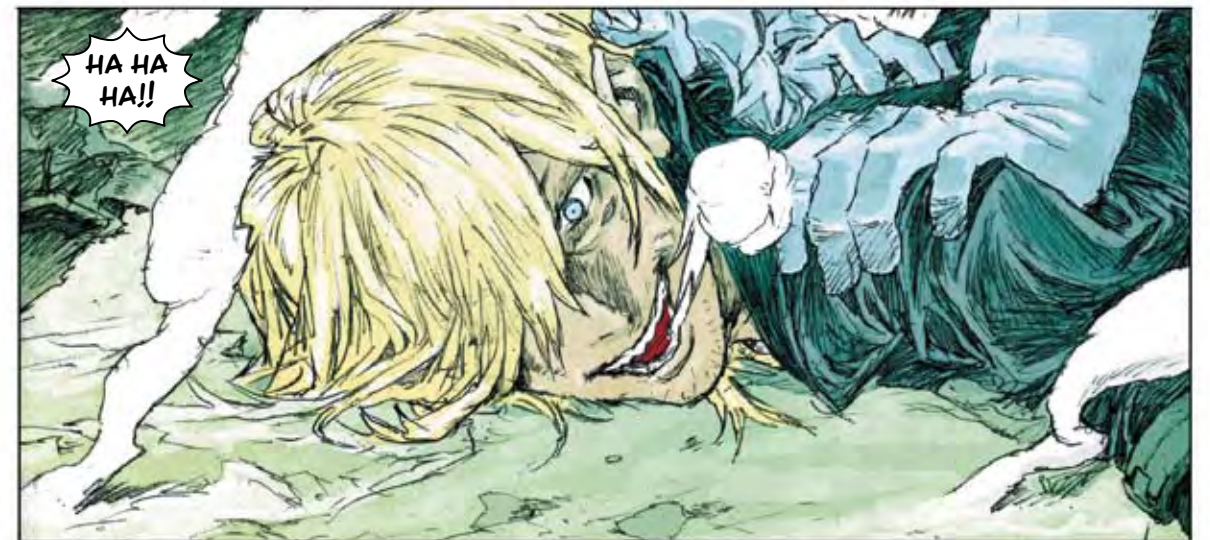
HA HA
HA!!



HA HA
HA!!



HA HA
HA!!



HA HA
HA!!



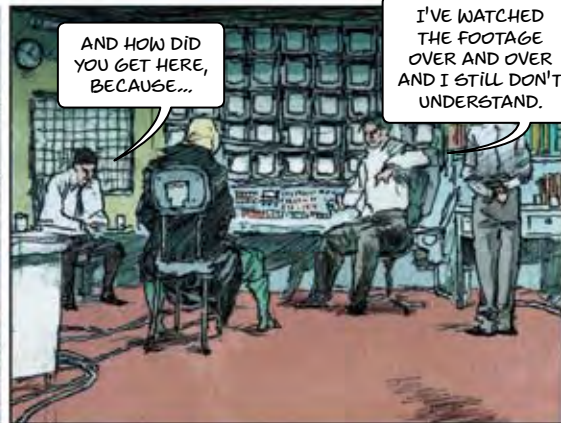
DO YOU
SPEAK
CHINESE?



NO, BUT I DO
SPEAK ENGLISH.



TELL US
WHAT YOU'RE
DOING HERE!



AND HOW DID
YOU GET HERE,
BECAUSE...

I'VE WATCHED
THE FOOTAGE
OVER AND OVER
AND I STILL DON'T
UNDERSTAND.



IT'S ALL
A BIT CRAZY.
I KNOW YOU WON'T
BELIEVE ME.



LET ME IN!!

I HAVE
MY ORDERS,
SIR.



CERTAINLY,
AND YOU HAVE
SPECIAL ONES
REGARDING
MY PERSON.

I'M SAMUEL DE LA MANCHA,
UN SPECIAL ENVOY ON
INFLUENZA, PANDEMICS,
FOOD SECURITY, AND M.O.I.*

* MANY OTHER ISSUES

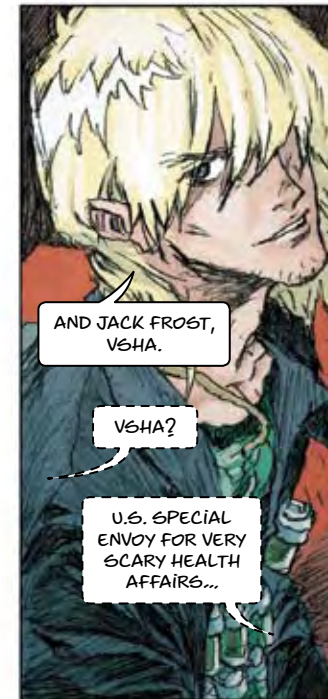


I'M SORRY, SIR,
I... I DIDN'T
KNOW.

AND THAT'S
THE PROBLEM...



TO KEEP YOU IN THE PICTURE,
THE PEOPLE FOLLOWING HIM
ARE CHARLOTTE LEMAGNE,
SPECIAL COORDINATING AGENT
ON EMERGING THREATS OF
THE EUROPEAN UNION.



AND JACK FROST,
VSHA.

VSHA?

U.S. SPECIAL
ENVOY FOR VERY
SCARY HEALTH
AFFAIRS...



IN THE BUSINESS,
THEY'RE KNOWN AS
'THE 3 SPECIALS.'

ALONG WITH THEIR
THREE ASSISTANTS:
BJORN SNEJBERG,
GHISLAIN TINGREY
AND CHANG WENLING.



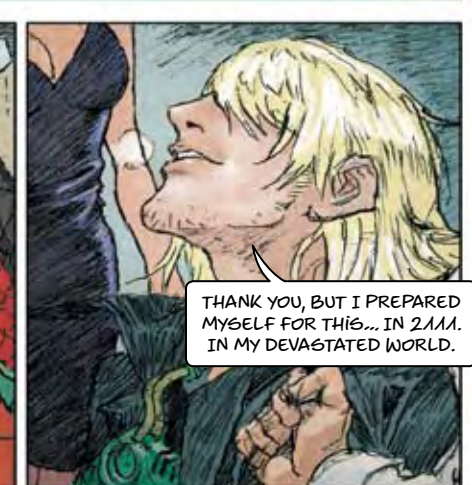
HOW... HOW
DO YOU KNOW
OUR NAMES AND
POSITIONS?

FOR THE SIMPLE
AND VERY GOOD
REASON THAT YOU
ARE THE ONES I'VE
COME TO MEET.

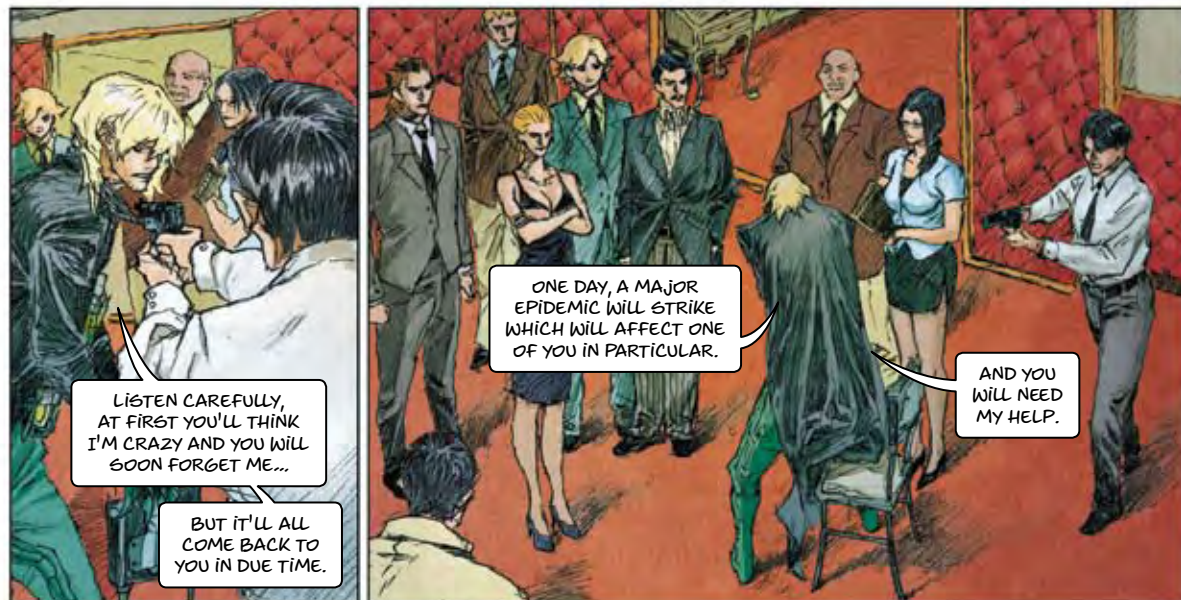


COME FROM
WHERE?!

BEING RUDE TO
HIM WON'T GET
US ANYWHERE.



THANK YOU, BUT I PREPARED
MYSELF FOR THIS... IN 2111.
IN MY DEVASTATED WORLD.



LISTEN CAREFULLY,
AT FIRST YOU'LL THINK
I'M CRAZY AND YOU WILL
SOON FORGET ME...

BUT IT'LL ALL
COME BACK TO
YOU IN DUE TIME.

ONE DAY, A MAJOR
EPIDEMIC WILL STRIKE
WHICH WILL AFFECT ONE
OF YOU IN PARTICULAR.

AND YOU
WILL NEED
MY HELP.



HERE IN THESE TUBES,
I HAVE NEW BIOLOGICAL
MATERIAL THAT CAN NIP
ANY PANDEMIC IN THE BUD.

AFTER IT HAPPENS,
YOU MUST DO WHATEVER IT
TAKES TO MAKE POLITICAL
DECISIONS THAT ENSURE
THAT THE FUTURE NEVER
BECOMES THE ONE
I COME FROM.



TAKE THIS AND
KEEP IT WITH YOU,
MS WENLING...

PLEASE.



NO, DON'T
WORRY.

THERE'S NO RISK
OF THIS PHONE
BEING TAPPED.



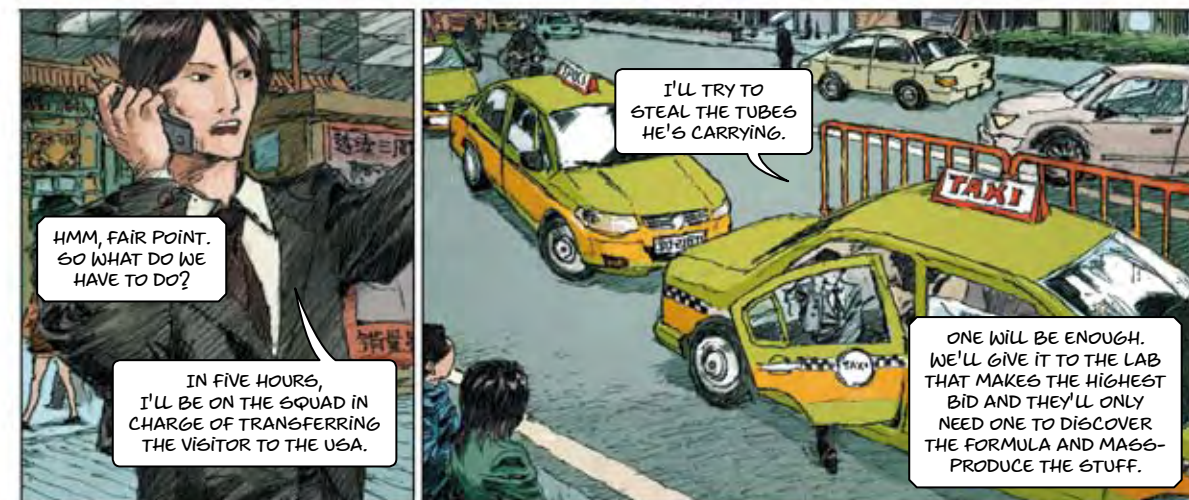
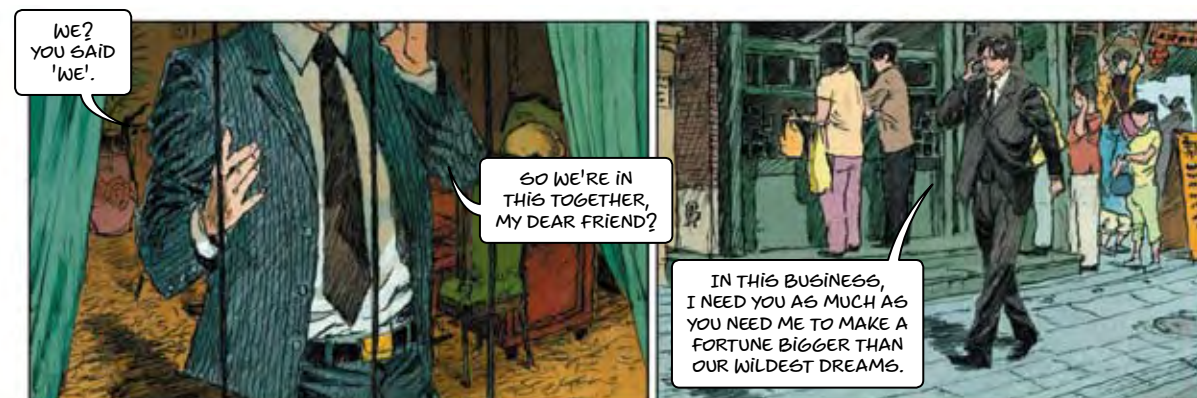
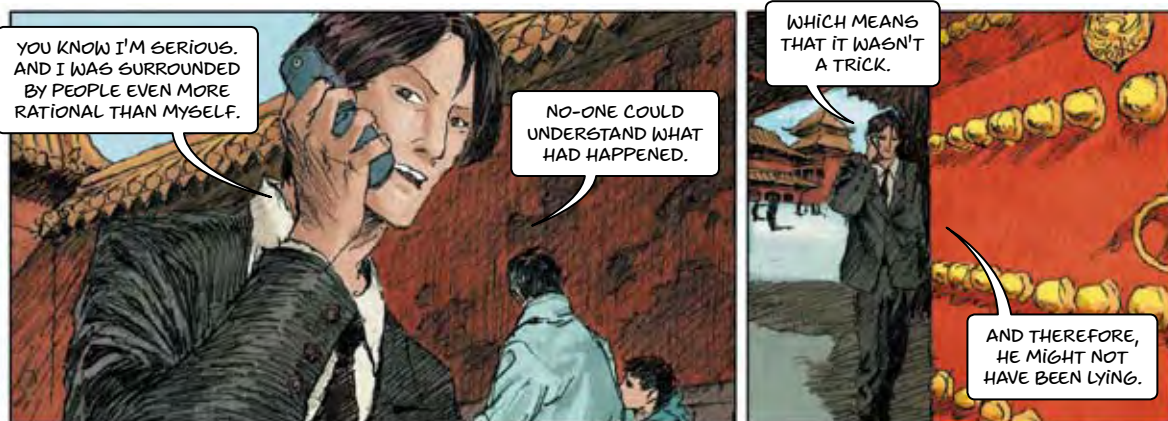
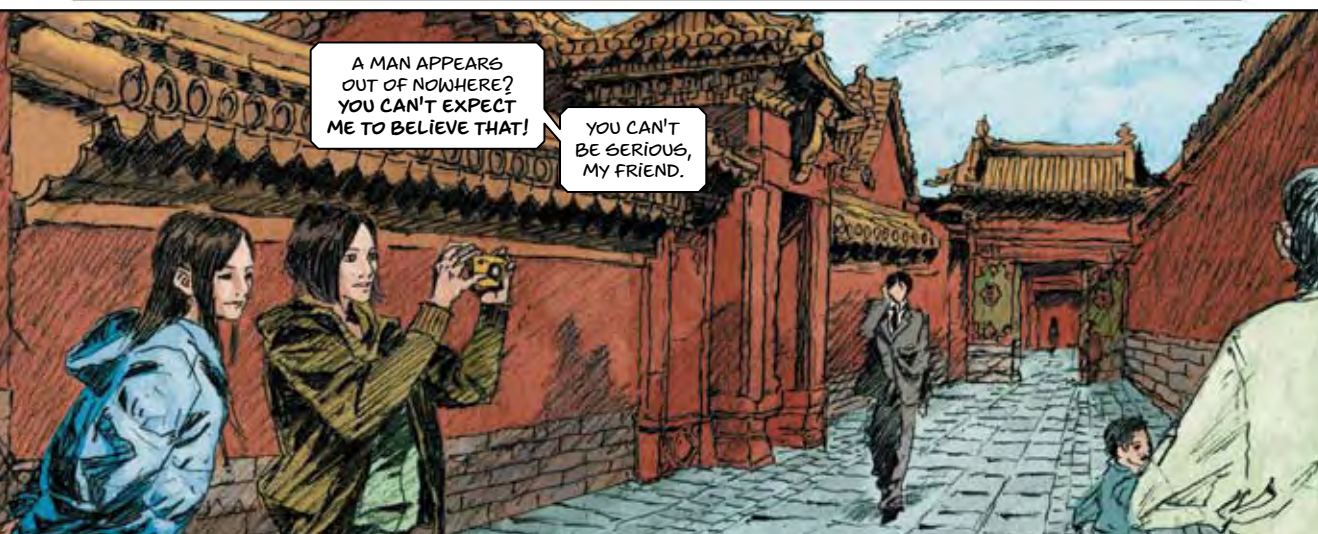
IT'S A MOBILE
AND CARD THAT I JUST
BOUGHT FROM A STALL IN
DONG TANG ZI HUTONG.

PUT ME
THROUGH TO
HIM QUICKLY
THEN.

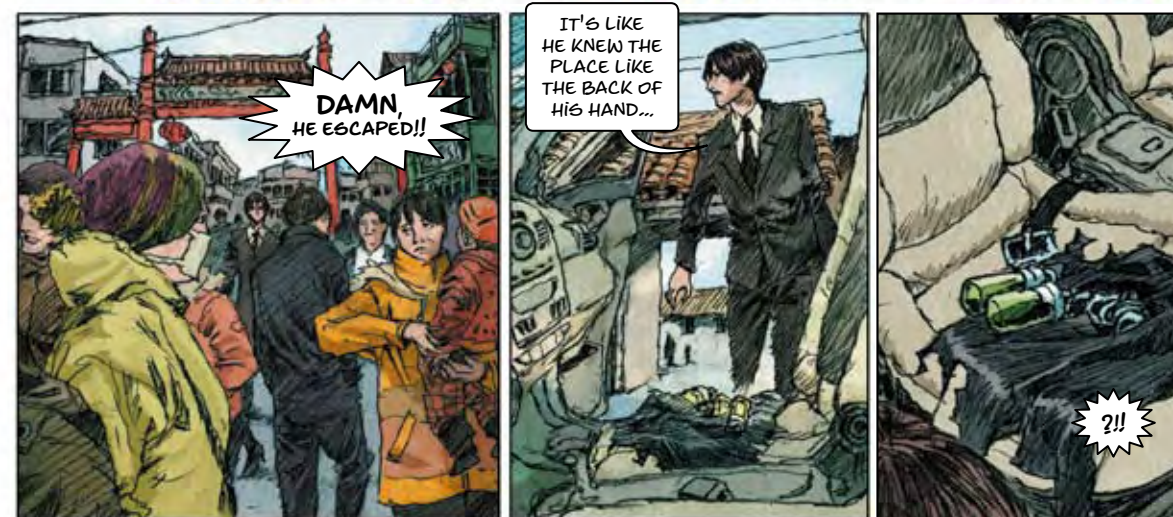
WE'RE
USING UP
THE CREDIT.

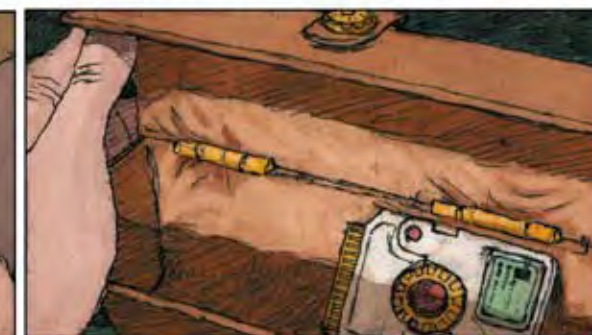
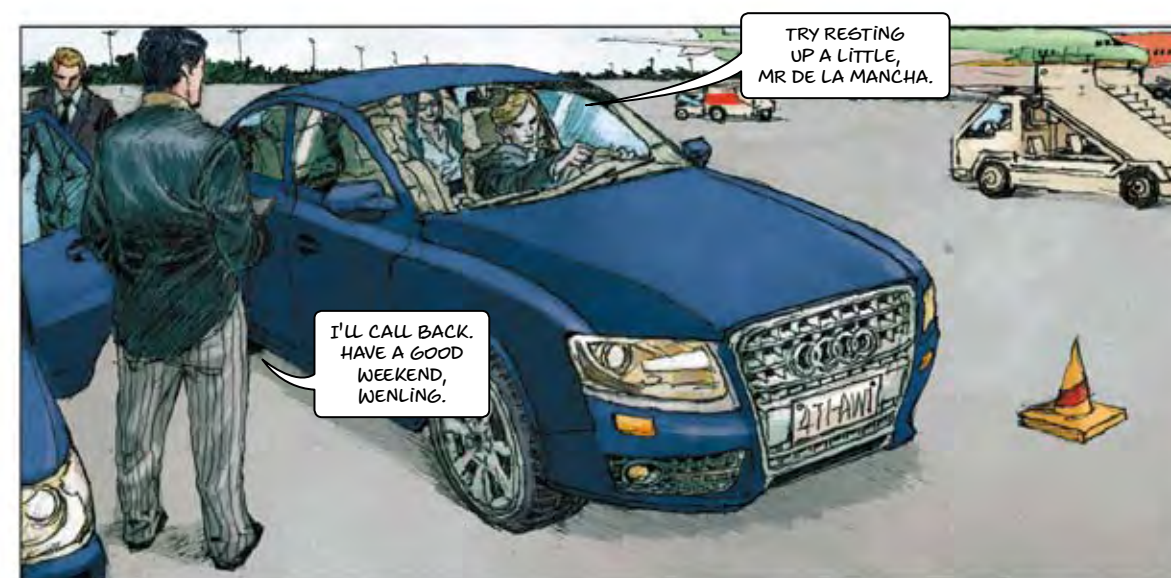


SOTUIJE,
MAKE IT
QUICK.











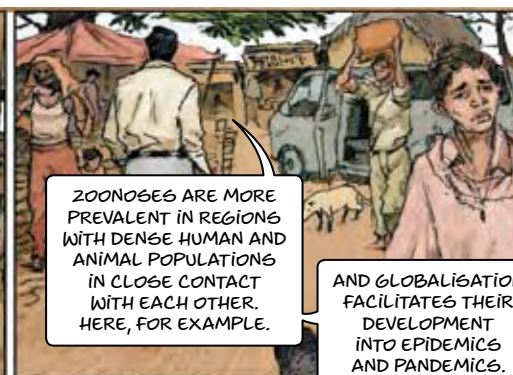
A TROPICAL COUNTRY IN ASIA.
TIME HAS PASSED.

TO END THIS
REPORT...



AROUND SEVENTY-FIVE
PERCENT OF NEW HUMAN
DISEASES HAVE THEIR
ORIGINS IN THE ANIMAL
KINGDOM.

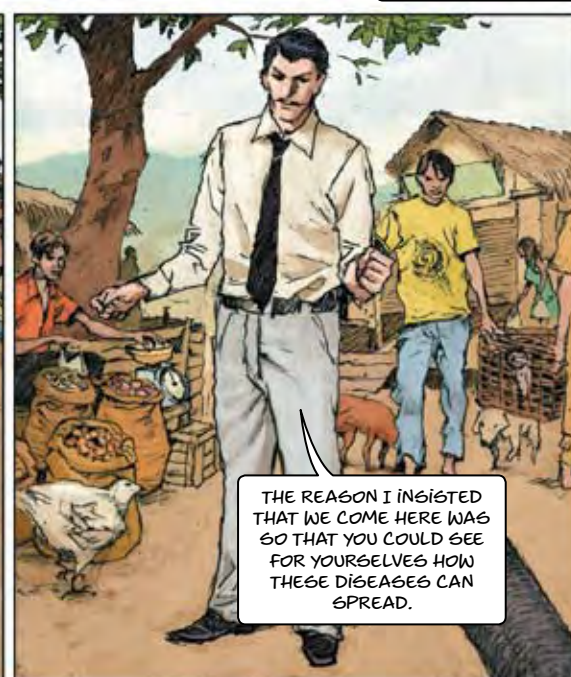
THE NUMBER OF EMERGING
INFECTIOUS DISEASES ON
PLANET EARTH IS INCREASING
EXPONENTIALLY.



ZOO NOSES ARE MORE
PREVALENT IN REGIONS
WITH DENSE HUMAN AND
ANIMAL POPULATIONS
IN CLOSE CONTACT
WITH EACH OTHER.
HERE, FOR EXAMPLE.

AND GLOBALISATION
FACILITATES THEIR
DEVELOPMENT
INTO EPIDEMICS
AND PANDEMICS.

DEFORESTATION AND ILLEGAL
TRADE IN ENDANGERED
SPECIES CREATE NEW
CONDITIONS OF CONTACT
BETWEEN HUMANS AND
WILDLIFE.



THE REASON I INSISTED
THAT WE COME HERE WAS
SO THAT YOU COULD SEE
FOR YOURSELVES HOW
THESE DISEASES CAN
SPREAD.



INDEED, IMAGINE IF YOU WERE
INFECTED IN THIS MARKET BY
A NEW CONTAGIOUS AGENT.
YOU PROBABLY WOULDN'T EVEN
REALISE IT UNTIL THE END OF
THE INCUBATION PERIOD.



YOU'D HAVE HEADED BACK TO
EUROPE, THE U.S., LATIN AMERICA,
OR AUSTRALIA AS PLANNED VIA
AN INTERNATIONAL AIRPORT.

SEVERAL EVEN,
IF YOU HAD
STOPOVERS.



YOU'D THEREFORE HAVE INFECTED
MANY PEOPLE, WHO IN TURN
WOULD THEN HEAD OFF IN MANY
DIFFERENT DIRECTIONS.



AND THEY THEMSELVES
WOULD CROSS PATHS
WITH PEOPLE EN ROUTE
TO... EVERYWHERE.



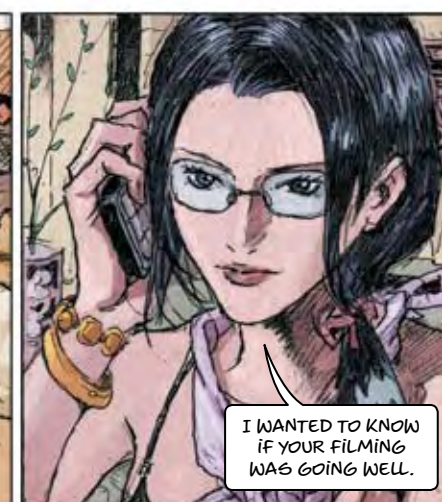
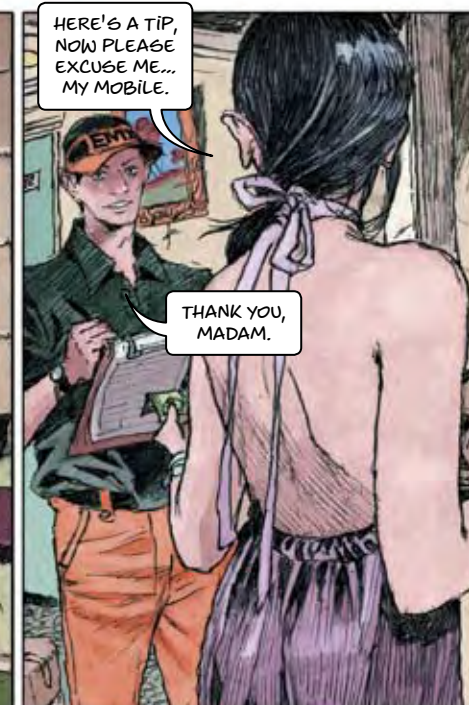
WITH THE RESULT
THAT THE ENTIRE
WORLD WOULD
BE AFFECTED IN
JUST A FEW DAYS.



THIS IS THE
GREAT RISK OF
GLOBALISATION...



SORRY,
I FORGOT
TO TURN
IT OFF.





YOU'RE A STAR ASSISTANT, WENLING. BUT YOU REALLY SHOULD MAKE THE MOST OF YOUR HOLIDAYS.



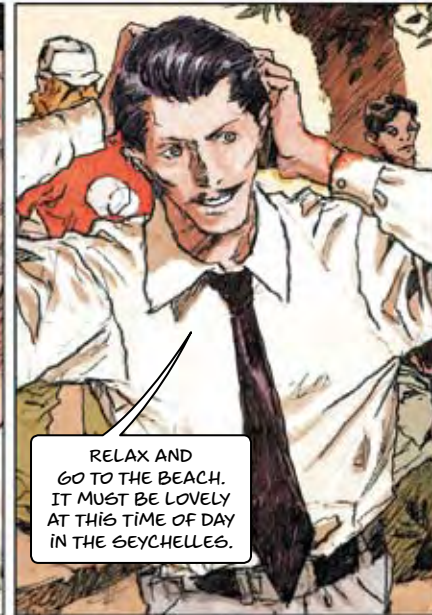
I KNOW I'M A DEMANDING BOSS, SO YOU MUST NEED SOME TIME OFF.

THAT'S VERY KIND OF YOU, BUT...



... YOU DIDN'T ANSWER ME.

EVERYTHING'S AS GOOD AS CAN BE EXPECTED.



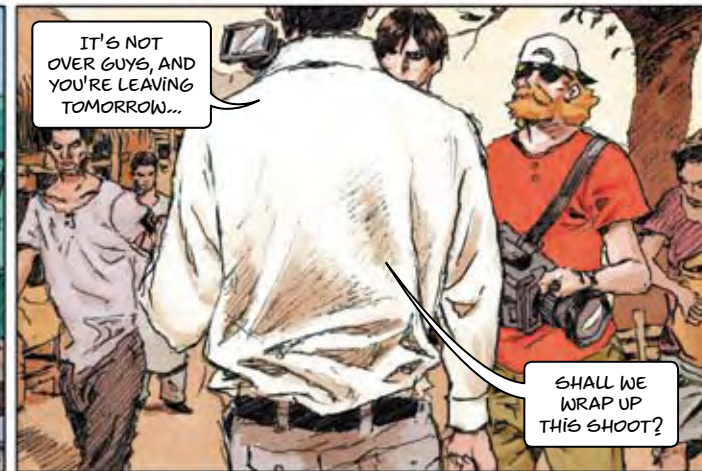
RELAX AND GO TO THE BEACH. IT MUST BE LOVELY AT THIS TIME OF DAY IN THE SEYCHELLES.



I'M HEADING THERE FEELING REASSURED.



ENJOY THE REST OF THE DAY, SIR.



IT'S NOT OVER GUYS, AND YOU'RE LEAVING TOMORROW...

SHALL WE WRAP UP THIS SHOOT?



BUT...



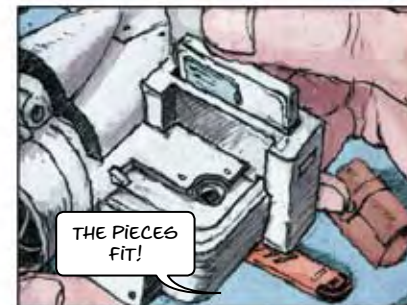
I'VE ALREADY SEEN SIMILAR TUBES...



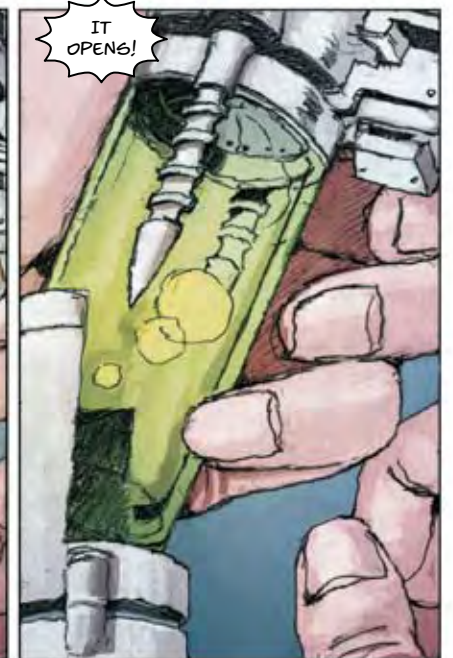
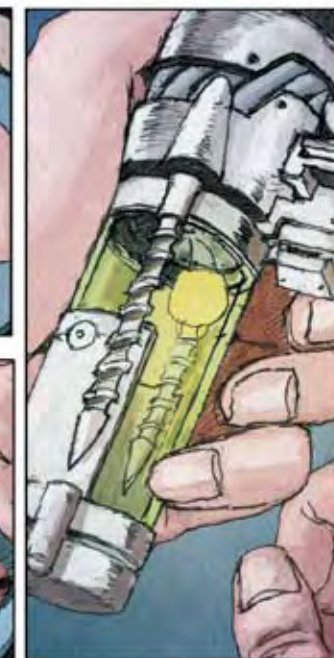
... ON THE SUIT OF THAT 'TRAVELLER' WHO APPEARED FROM OUT OF NOWHERE, IN BEIJING!



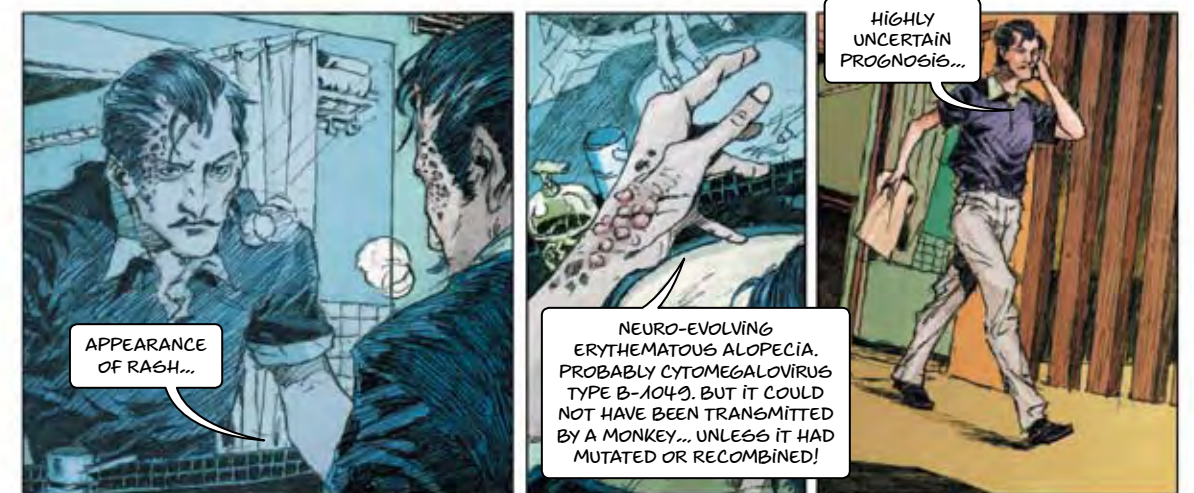
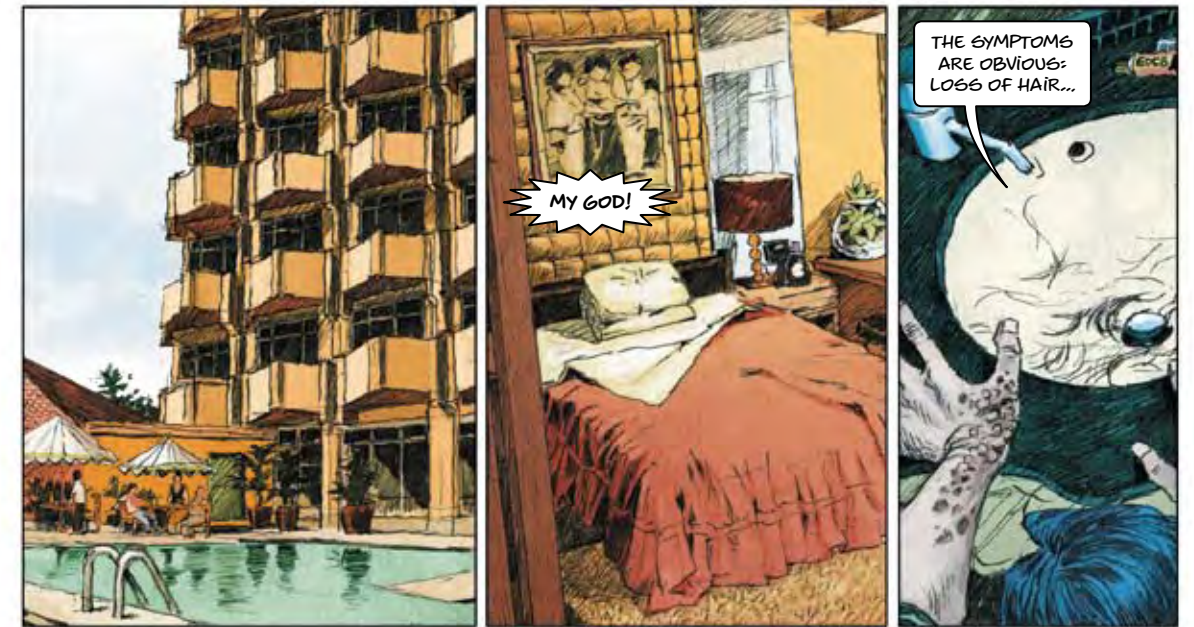
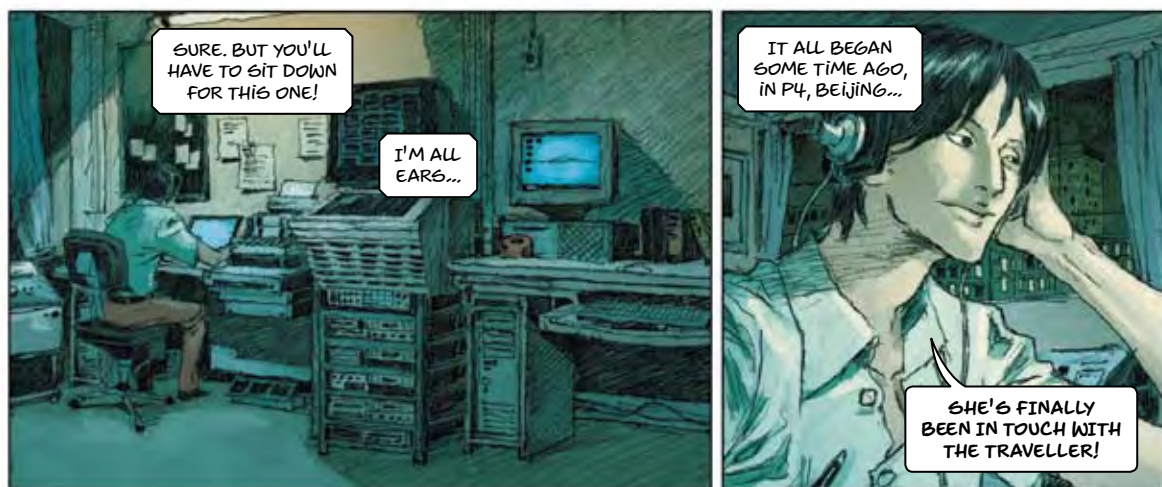
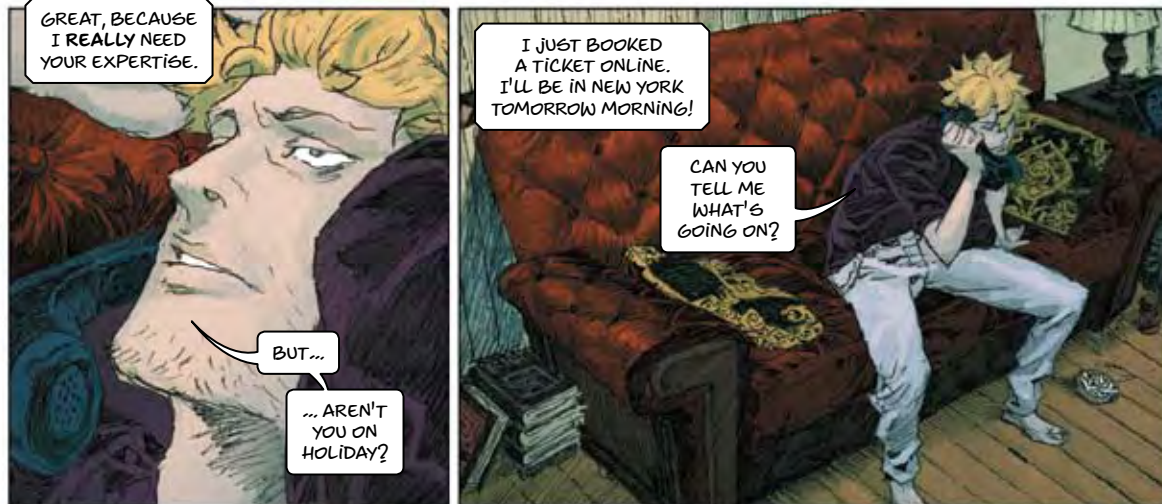
SO...

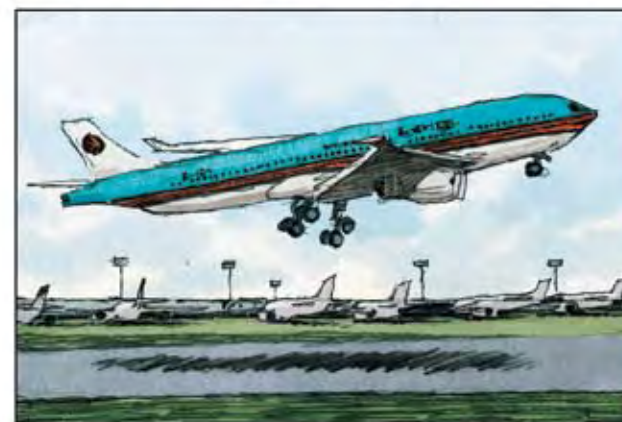


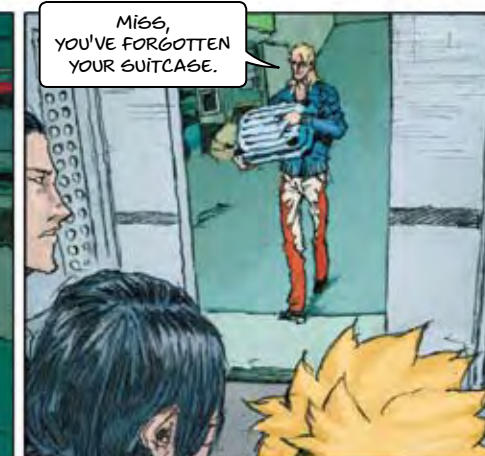
THE PIECES FIT!

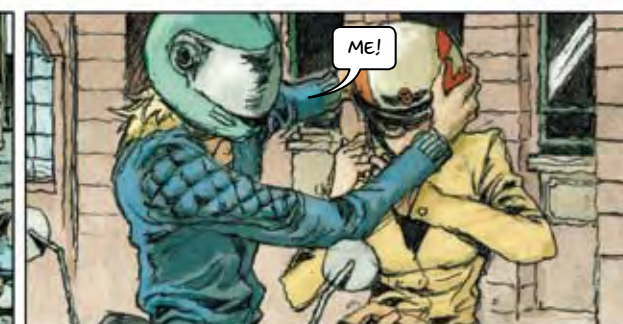
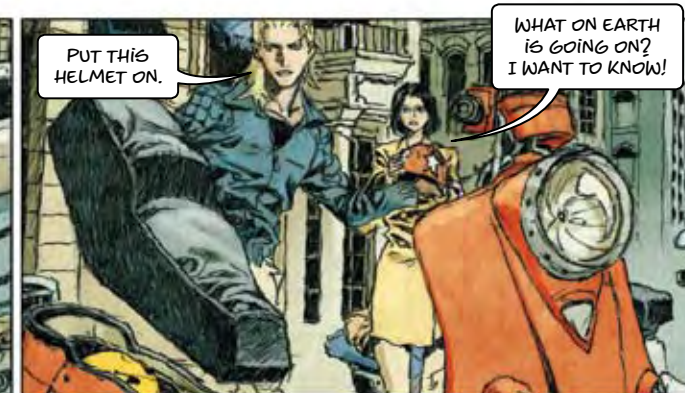


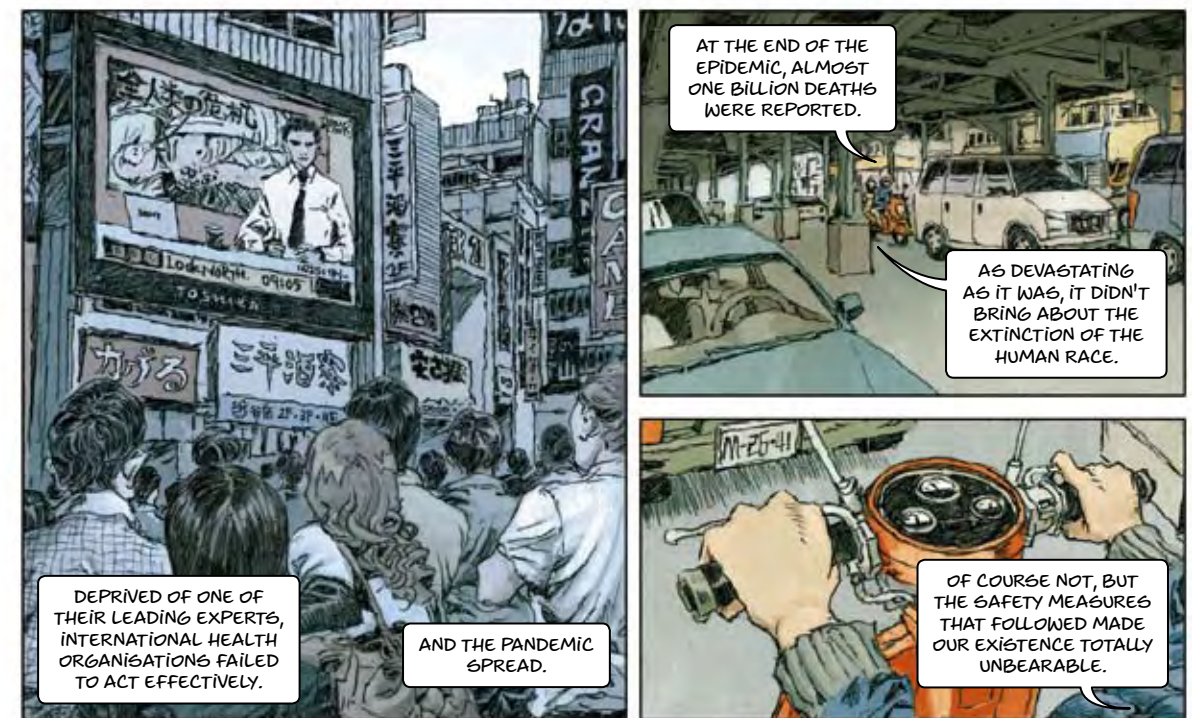
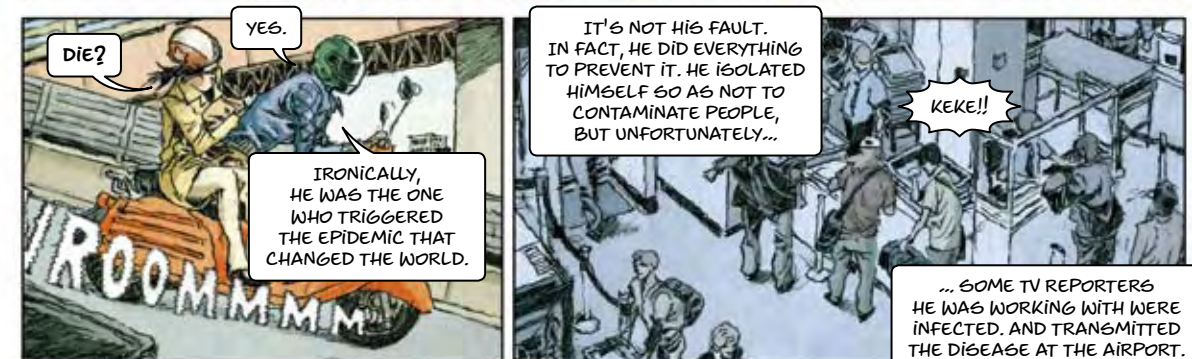
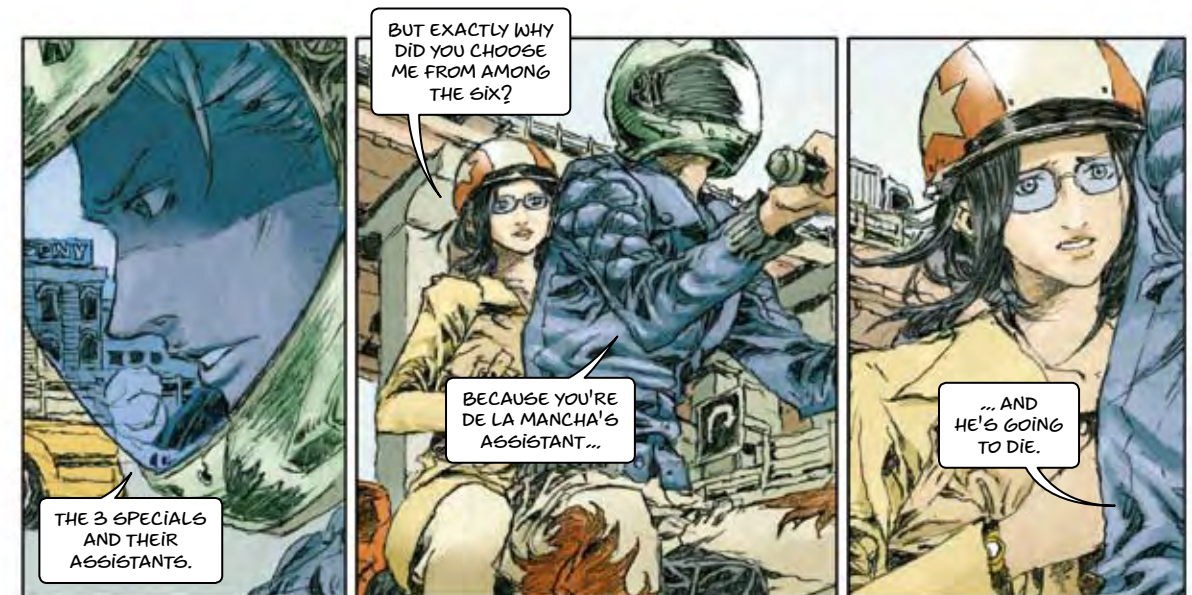
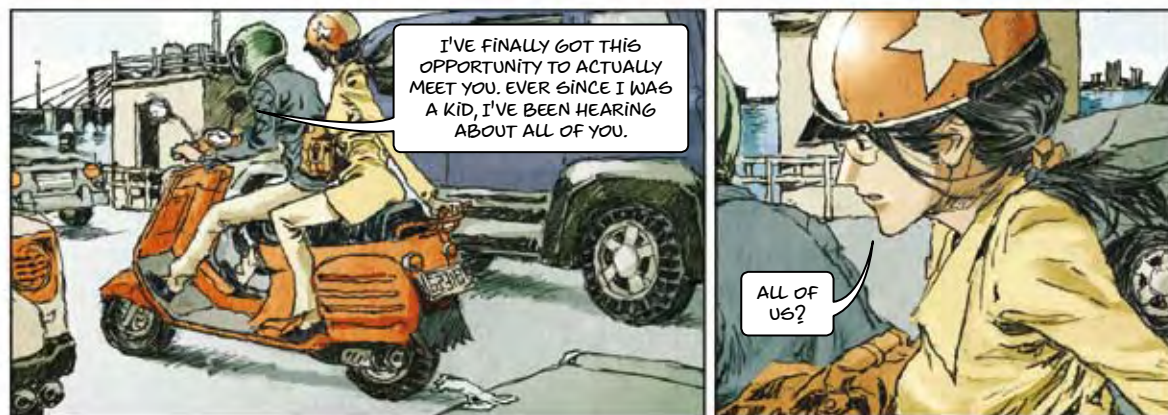
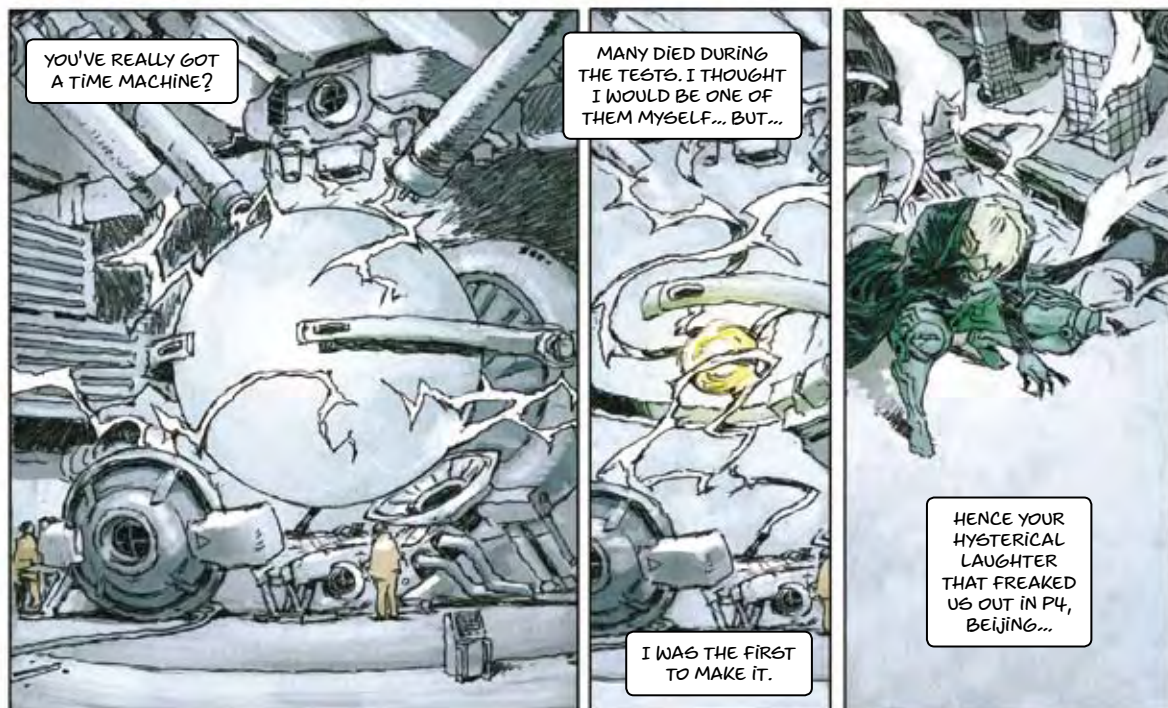
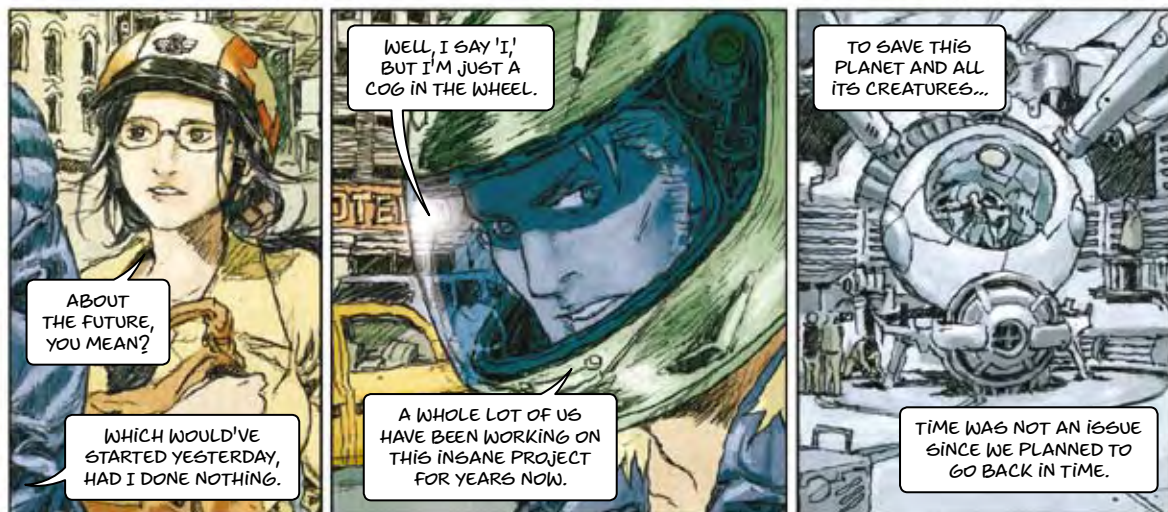
IT OPENS!











THE WORST THING WAS THAT THE PEOPLE THEMSELVES ACCEPTED THEM.

BY GIVING VIRTUALLY TOTAL POWER TO DASCARI SOTUIJE.

WHO IS SOMEONE YOU KNOW.

EXCUSE ME, I'M AFRAID YOU'RE MISTAKEN THERE.

NOT AT ALL. HE'S ONE OF THE BODYGUARDS WHO INTERROGATED ME IN THE P4 LABORATORY IN BEIJING. HE TRIED TO KIDNAP ME AFTERWARDS, BUT I MANAGED TO ESCAPE. AND HE JUST TRIED TO KIDNAP YOU!

IN MY PAST, HE SEIZED POWER WITH THE SUPPORT OF A VERY POWERFUL MAFIA THAT SET UP SHOP WITH A CROOKED LABORATORY AND MANUFACTURED ANTI-PANDEMIC MEDICINE.

HE THEN TOOK MEASURES DESIGNED TO REASSURE PEOPLE, FIRST OF ALL BY SEPARATING ANIMALS FROM HUMANS.

WITHIN SEVERAL YEARS, NO MORE HUMAN-TO-ANIMAL CONTACT WAS ALLOWED.

SO EVERYONE WHO RELIED ON THEIR ANIMALS FOR SURVIVAL, IN PARTICULAR IN POOR COUNTRIES, WAS SOON EXPERIENCING FAMINE.

IT'S UTTER MADNESS...

I AGREE. BUT ONE BILLION DEATHS MADE IT CREDIBLE.

ESPECIALLY SINCE NOBODY TRUSTED THE OFFICIAL INSTITUTIONS ANY MORE, WHICH WERE ACCUSED OF FAILING TO ANTICIPATE WHAT HAPPENED.

THERE YOU GO... BUT PEOPLE COMPLAIN JUST AS MUCH WHEN WE'RE REALLY WELL PREPARED. 'YOU'RE DAMNED IF YOU DO, AND DAMNED IF YOU DON'T.'

I KNOW. BUT TIME NO LONGER ENTERED INTO THE EQUATION.

WITH SUCH IDEAS GAINING GROUND, OVER THE COURSE OF SEVERAL DECADES, 'WE' ALSO SAID THAT SINCE INFECTION WAS ALSO POSSIBLE BETWEEN HUMANS, THE SAFEST THING TO DO WAS TO KEEP THEM SEPARATE.

THIS IS A BIT LIKE WHAT HAPPENED WHEN BIRD FLU WAS GOING AROUND...

PEOPLE WHO DIDN'T WANT TO TRAVEL IN PUBLIC BUSES ANY MORE ALL BOUGHT CARS, WHICH CAUSED HUGE TRAFFIC JAMS AND ADDED MORE POLLUTION.

THE VERY SAME FEAR, YES.

WE LIVED A LOT LONGER, BUT WERE INCREDIBLY ISOLATED.

DEPRESSION BECAME THE MOST COMMON DISEASE.

THAT'S AWFUL.

IT WAS YEARS BEFORE OUR ANCESTORS DECIDED TO BREAK THE LAW AND MEET UP FROM TIME TO TIME.

IT WAS DURING ONE OF THESE SECRET MEETINGS THAT THE PROJECT I REPRESENT FIRST BEGAN.

2. TO GET SOTUIJE AND HIS LOT ON THE WRONG TRACK SO THAT THEY'D CONCENTRATE ON SOMETHING OTHER THAN WHAT BROUGHT THEM TO POWER.

I CAME WITH SERUM TUBES, FOR TWO REASONS:
1. TO SAVE YOUR BOSS.

I LEFT HIM TWO TUBES THAT WERE IMPOSSIBLE TO OPEN (YOU'RE THE ONLY ONE I LEFT A 'KEY' WITH), AND IN ANY CASE...

NO SERUM INSIDE!

... SINCE WE DIDN'T HAVE TIME TO SYNTHESISE A LOT OF SERUM.

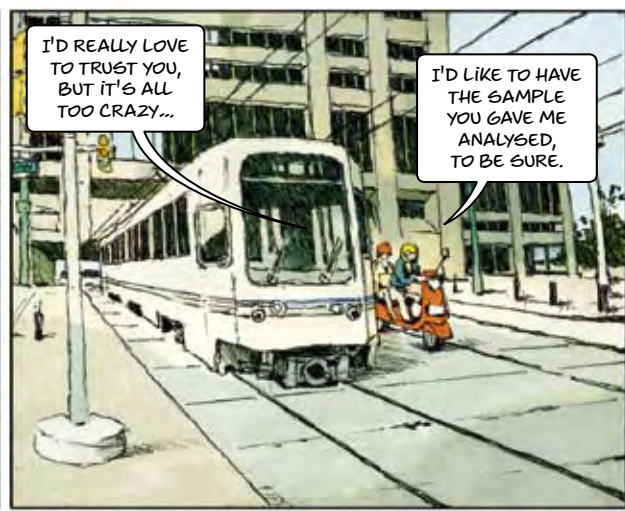
AND MY GOAL IS NOT TO SAVE THE ENTIRE WORLD...



... BUT TO WARN YOU SO YOU TAKE ACTION WHILE THERE'S STILL TIME...

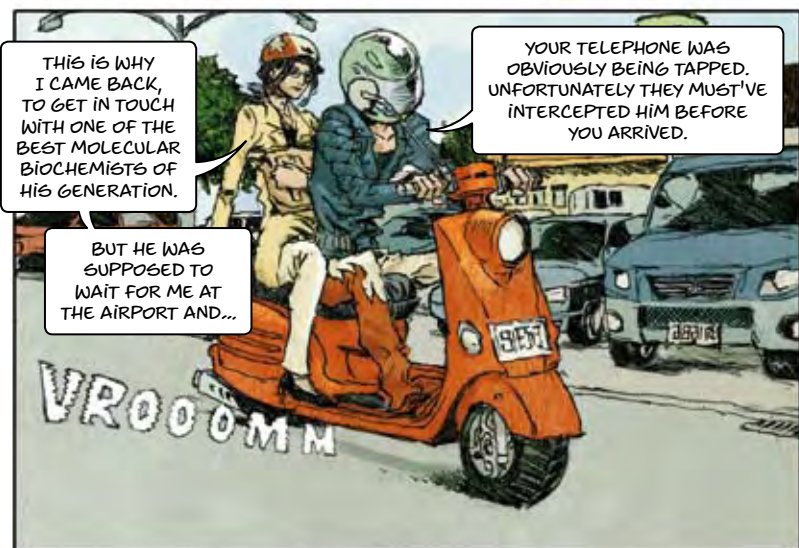


ONLY TOUGH POLITICAL DECISIONS AND CLOSE COOPERATION BETWEEN ALL THE PLAYERS INVOLVED CAN PREVENT THIS AND OTHER CRISES FROM OCCURRING, BY INCREASING TRUST IN YOUR OFFICIAL INSTITUTIONS.



I'D REALLY LOVE TO TRUST YOU, BUT IT'S ALL TOO CRAZY...

I'D LIKE TO HAVE THE SAMPLE YOU GAVE ME ANALYSED, TO BE SURE.



THIS IS WHY I CAME BACK, TO GET IN TOUCH WITH ONE OF THE BEST MOLECULAR BIOCHEMISTS OF HIS GENERATION.

BUT HE WAS SUPPOSED TO WAIT FOR ME AT THE AIRPORT AND...

YOUR TELEPHONE WAS OBVIOUSLY BEING TAPPED. UNFORTUNATELY THEY MUST'VE INTERCEPTED HIM BEFORE YOU ARRIVED.



BUT I CAN PROVE TO YOU THAT MY SERUM WORKS...

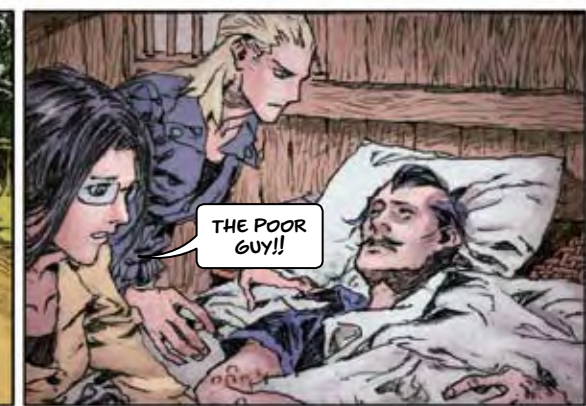


BUT... WE'RE BACK AT THE AIRPORT!!

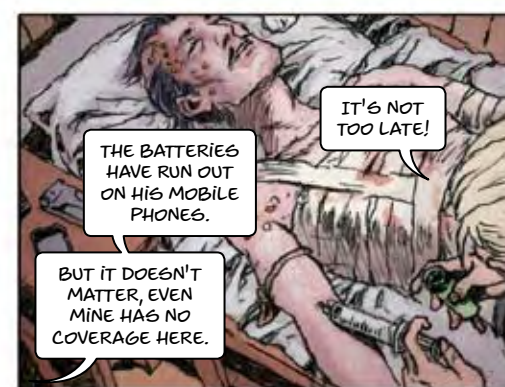


WE'VE GOT A FLIGHT IN TWO AND A HALF HOURS...

GOING WHERE?



THE POOR GUY!!



IT'S NOT TOO LATE!

THE BATTERIES HAVE RUN OUT ON HIS MOBILE PHONES.

BUT IT DOESN'T MATTER, EVEN MINE HAS NO COVERAGE HERE.



HOW DID YOU KNOW HE WAS HERE?

IT'S THE PLACE HIS BODY WAS LATER FOUND.



AND NOW?

WE JUST HAVE TO WAIT UNTIL HE GETS BETTER... SO THAT WE CAN CONVINCE HIM.



ABOUT THIS SOTUIJE GUY?



I REALLY HOPE WE NEVER HEAR FROM HIM AGAIN...

COME IN, SOTUIJE.



WE DID IT, I TOLD YOU WE WOULD...



PLEASE, SIT DOWN.



I KNEW THAT IF WE KEPT AN EYE ON THIS WENLING, WE'D GET WHAT WE WANTED.



EVEN THOUGH SHE ESCAPED FROM US AFTERWARDS, I MANAGED TO STEAL THE SERUM KEY FROM HER.



SOME MIGHT CALL IT LUCK, BUT ME, I'D CALL IT SUCCESS. SUCCESS BELONGS TO THOSE WHO DO EVERYTHING THEY CAN TO MAKE IT HAPPEN.



I'D NEVER USE THE WORD 'LUCK', I'D CALL IT...



... SWINDLING!



WHAT... WHAT'S GOTTEN INTO YOU?



SOTUIJE, DON'T GO THINKING I'M A BAD SPORT.



IF YOU'D KEPT YOUR PROMISE, I'D HAVE KEPT MINE.

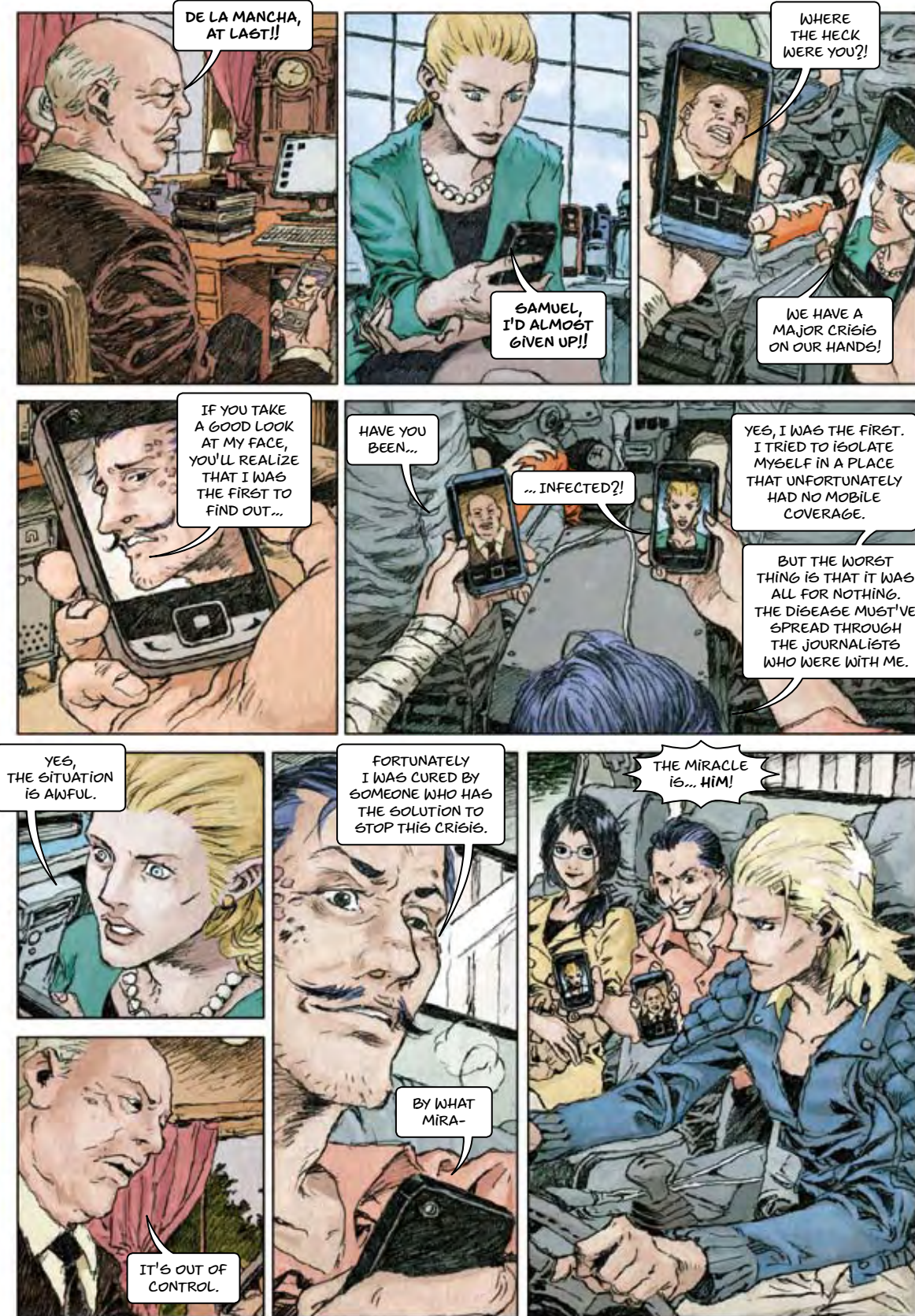
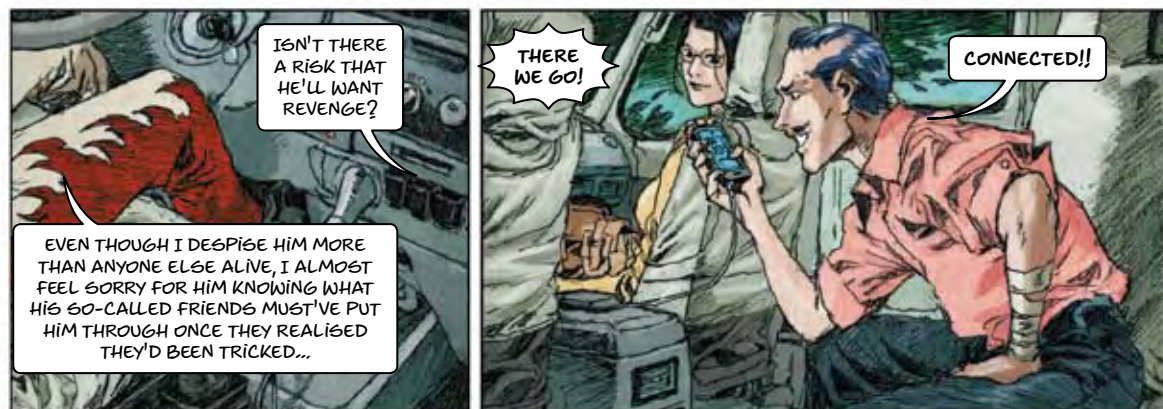
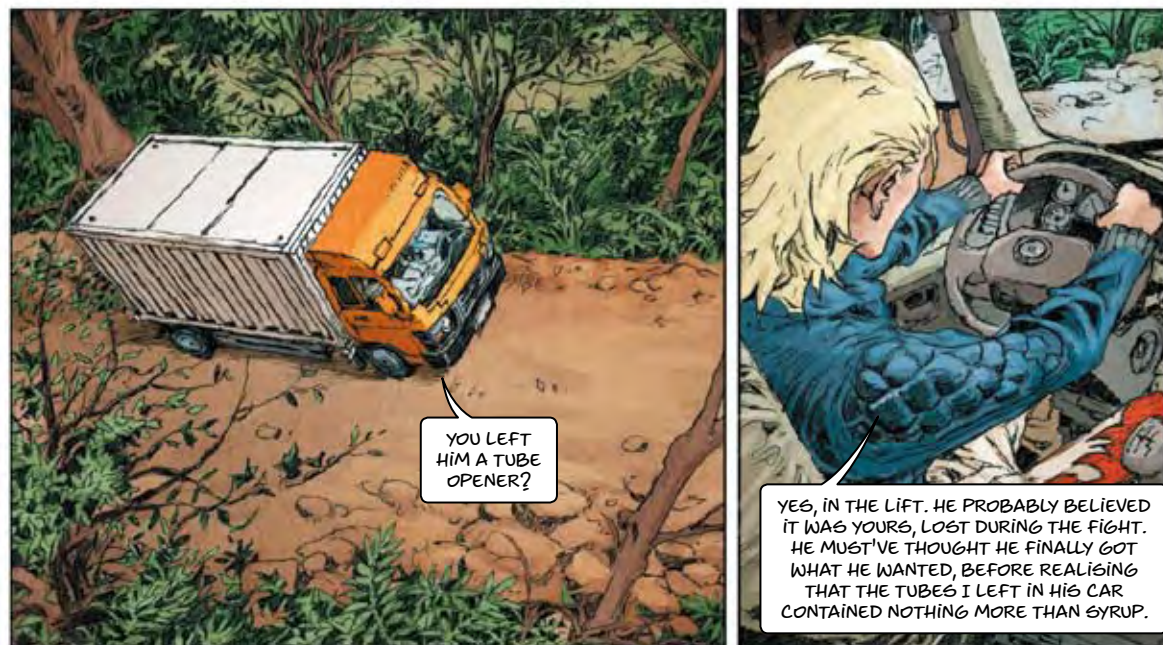
I'M RESPECTED FOR THAT.



THE LAB HAS JUST INFORMED ME THAT THE OPEN FLASK CONTAINS NOTHING MORE THAN SWEETENED WATER.



A REAL SHAME...



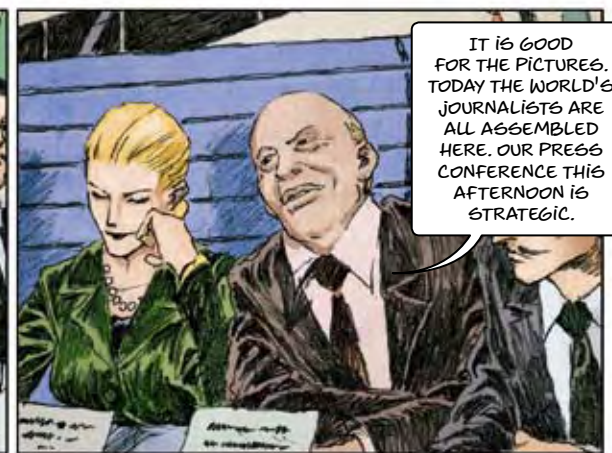
AND I AM PARTICULARLY GLAD TO DECLARE THIS EXTRAORDINARY SESSION OF THE EP OPEN, IN DUPLEX WITH NEW YORK AND WASHINGTON. DEAR SECRETARY GENERAL, DEAR SECRETARY OF STATE, THANK YOU FOR JOINING US AT THIS HISTORIC MOMENT.



COLLEAGUES, LADIES AND GENTLEMEN, THE WORST INFECTIOUS ACCIDENT IN THE HISTORY OF MANKIND HAS BEEN CONTROLLED IN A FEW WEEKS AND, DESPITE SAD LOSSES, MANY MILLIONS OF LIVES HAVE BEEN SAVED.



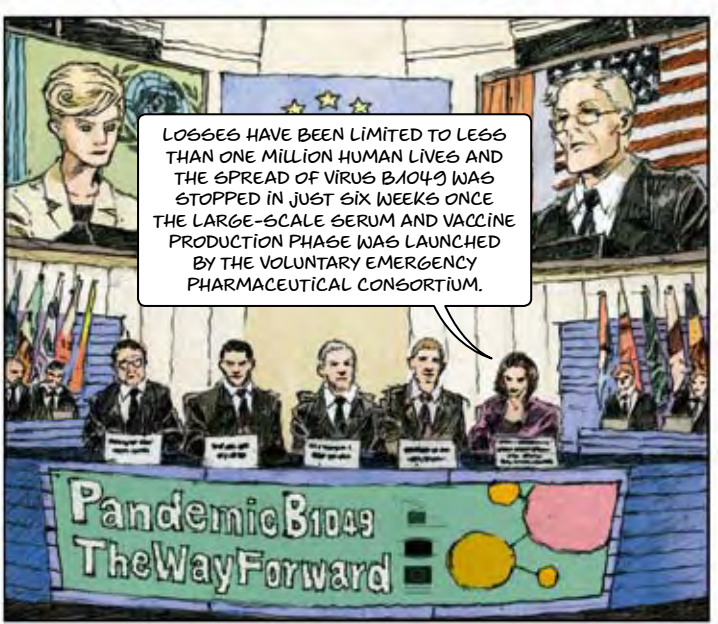
THANK YOU FOR BEING HERE IN PERSON. HOW DID YOU CONVINCE YOUR BOSSES NOT TO STAY WITH THEM?



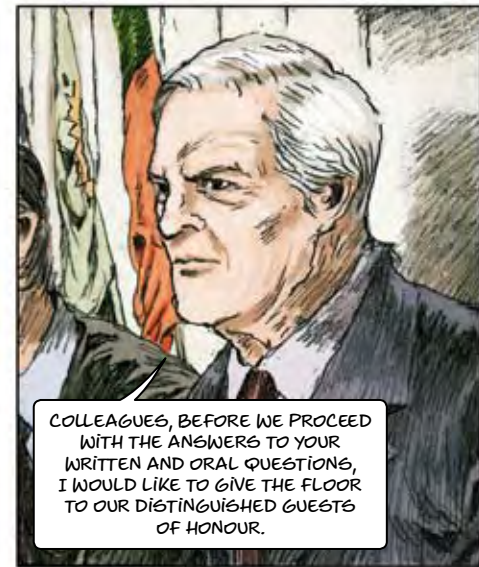
IT IS GOOD FOR THE PICTURES. TODAY THE WORLD'S JOURNALISTS ARE ALL ASSEMBLED HERE. OUR PRESS CONFERENCE THIS AFTERNOON IS STRATEGIC.



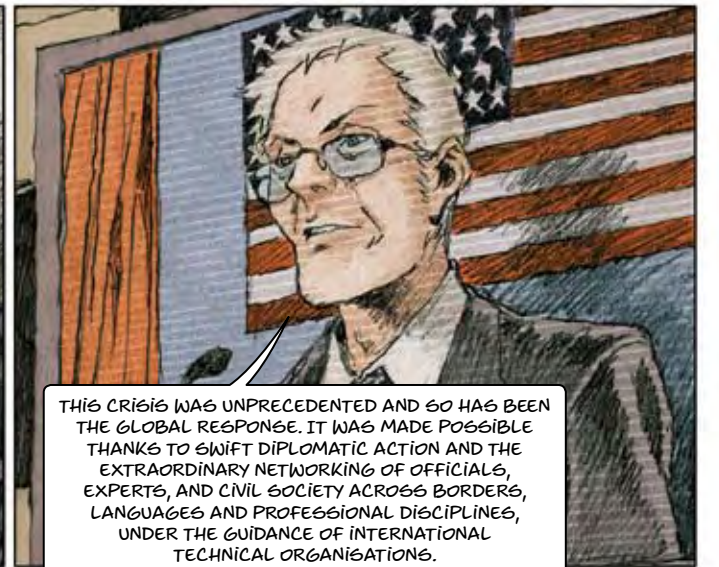
I HOPE ALL THOSE 'VIRUS CARRIERS' ARE IN GOOD HEALTH NOW. BRRR... NOW STOP WHISPERING AND LET ME LISTEN TO OUR POLITICAL LEADERS.



LOSSES HAVE BEEN LIMITED TO LESS THAN ONE MILLION HUMAN LIVES AND THE SPREAD OF VIRUS B1049 WAS STOPPED IN JUST SIX WEEKS ONCE THE LARGE-SCALE SERUM AND VACCINE PRODUCTION PHASE WAS LAUNCHED BY THE VOLUNTARY EMERGENCY PHARMACEUTICAL CONSORTIUM.



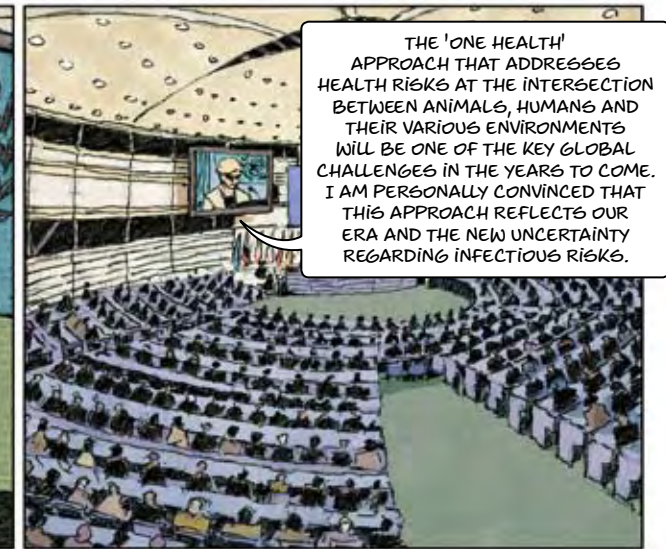
COLLEAGUES, BEFORE WE PROCEED WITH THE ANSWERS TO YOUR WRITTEN AND ORAL QUESTIONS, I WOULD LIKE TO GIVE THE FLOOR TO OUR DISTINGUISHED GUESTS OF HONOUR.



THIS CRISIS WAS UNPRECEDENTED AND SO HAS BEEN THE GLOBAL RESPONSE. IT WAS MADE POSSIBLE THANKS TO SWIFT DIPLOMATIC ACTION AND THE EXTRAORDINARY NETWORKING OF OFFICIALS, EXPERTS, AND CIVIL SOCIETY ACROSS BORDERS, LANGUAGES AND PROFESSIONAL DISCIPLINES, UNDER THE GUIDANCE OF INTERNATIONAL TECHNICAL ORGANISATIONS.



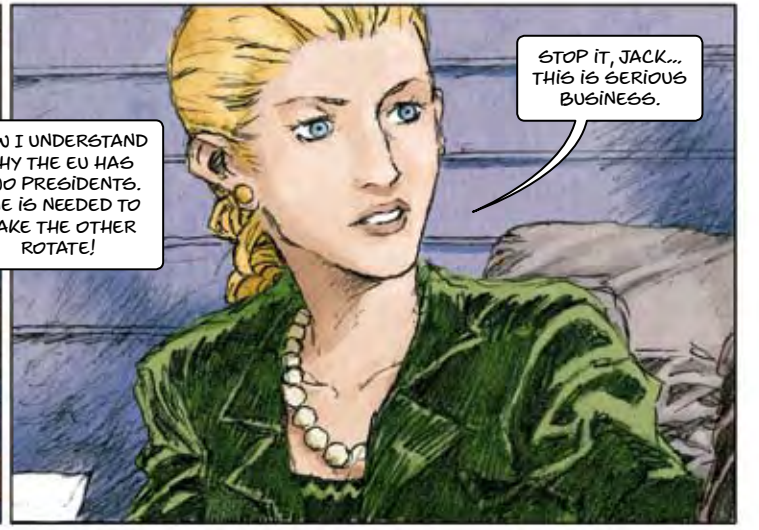
THE FEAR THIS CREATED CAN BE TURNED TO GOOD USE IN IMPROVING OUR LONG-TERM HEALTH SECURITY, WELL-BEING AND LIVELIHOODS. ALL OUR POLITICAL PARTNERS ASSEMBLED TODAY HAVE ENCOURAGED THE UNITED NATIONS, OTHER ORGANISATIONS AND ACADEMIA TO EMBARK ON A MORE INTEGRATED AND CROSS-SECTORAL APPROACH TO HEALTH.



THE 'ONE HEALTH' APPROACH THAT ADDRESSES HEALTH RISKS AT THE INTERSECTION BETWEEN ANIMALS, HUMANS AND THEIR VARIOUS ENVIRONMENTS WILL BE ONE OF THE KEY GLOBAL CHALLENGES IN THE YEARS TO COME. I AM PERSONALLY CONVINCED THAT THIS APPROACH REFLECTS OUR ERA AND THE NEW UNCERTAINTY REGARDING INFECTIOUS RISKS.

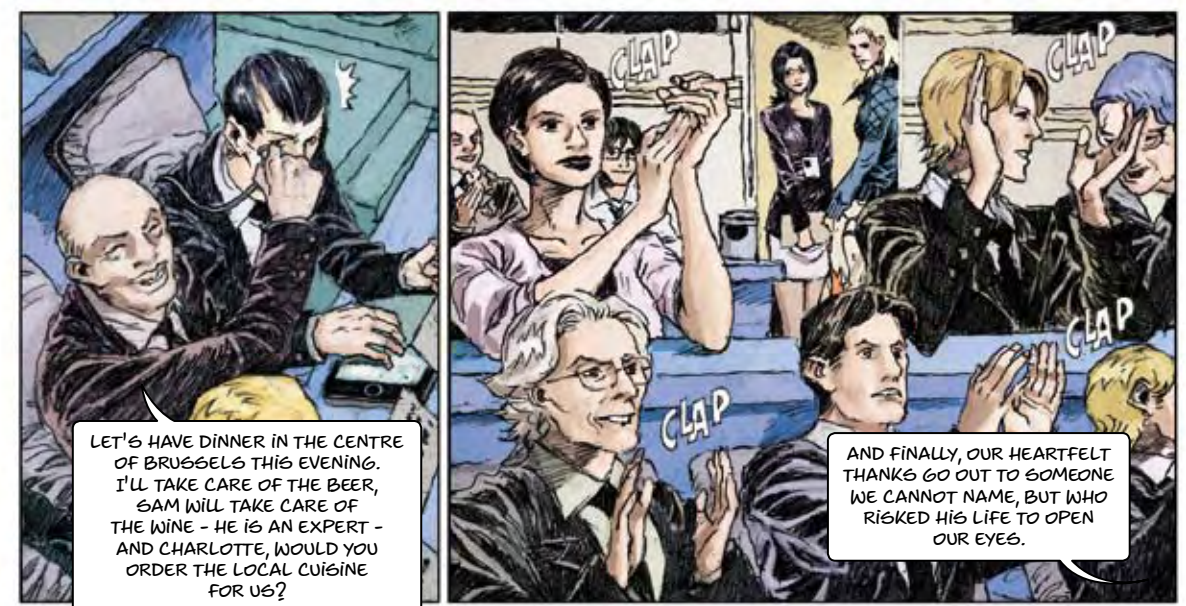
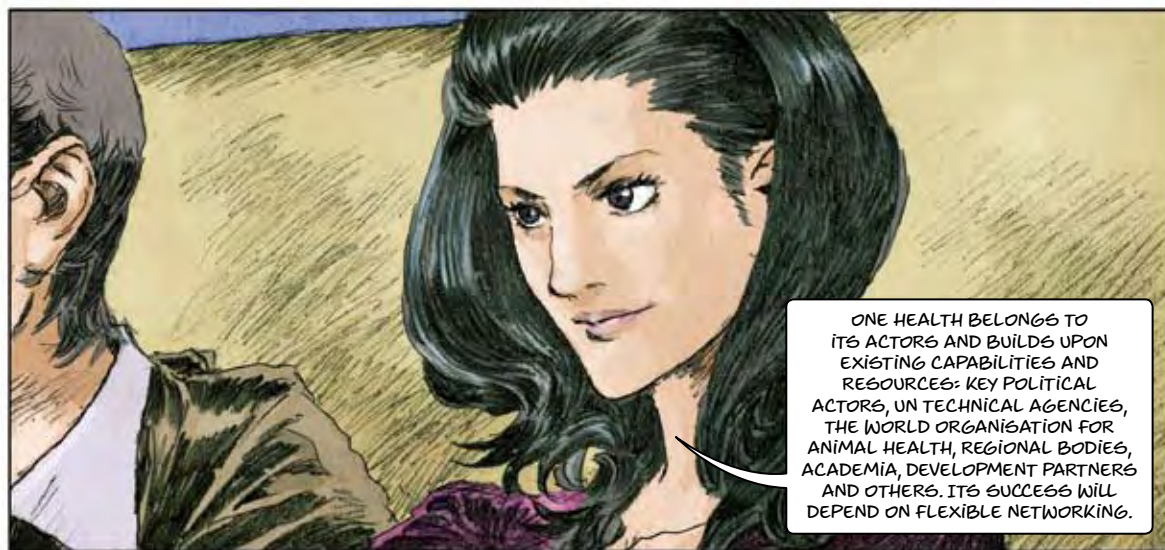
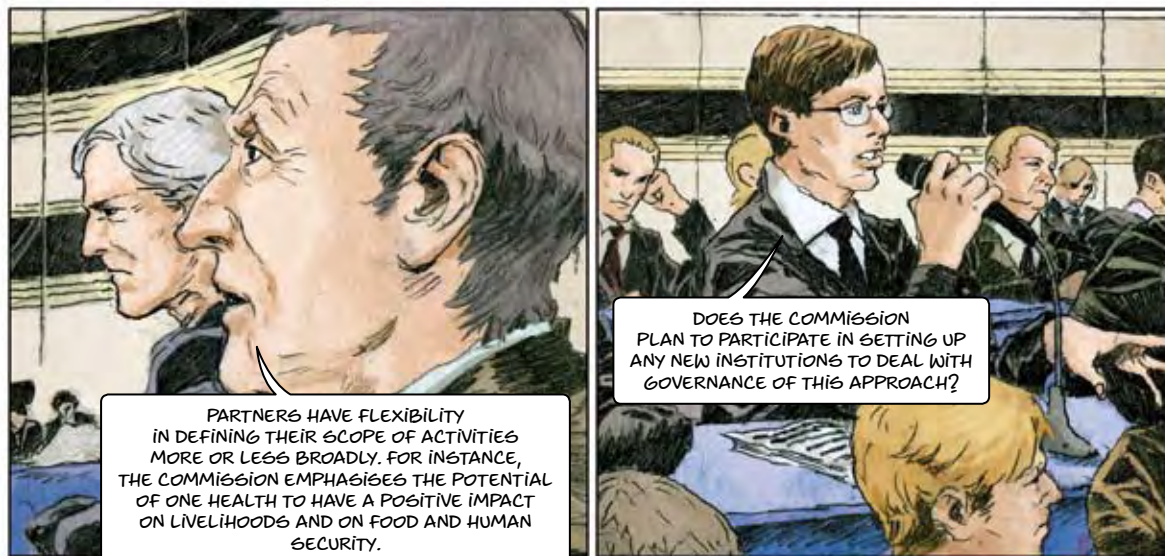
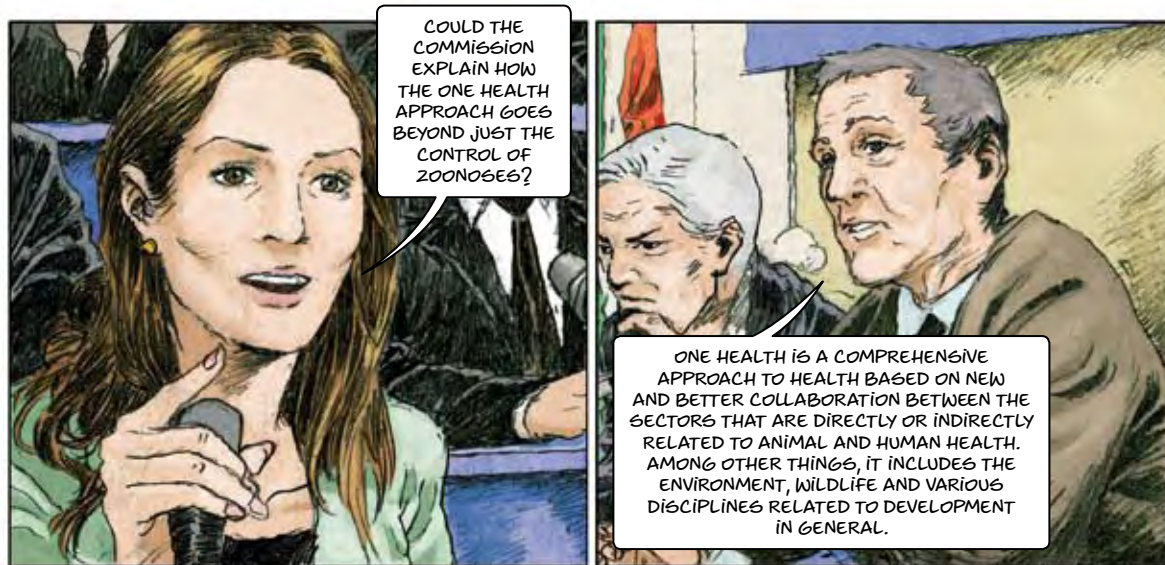


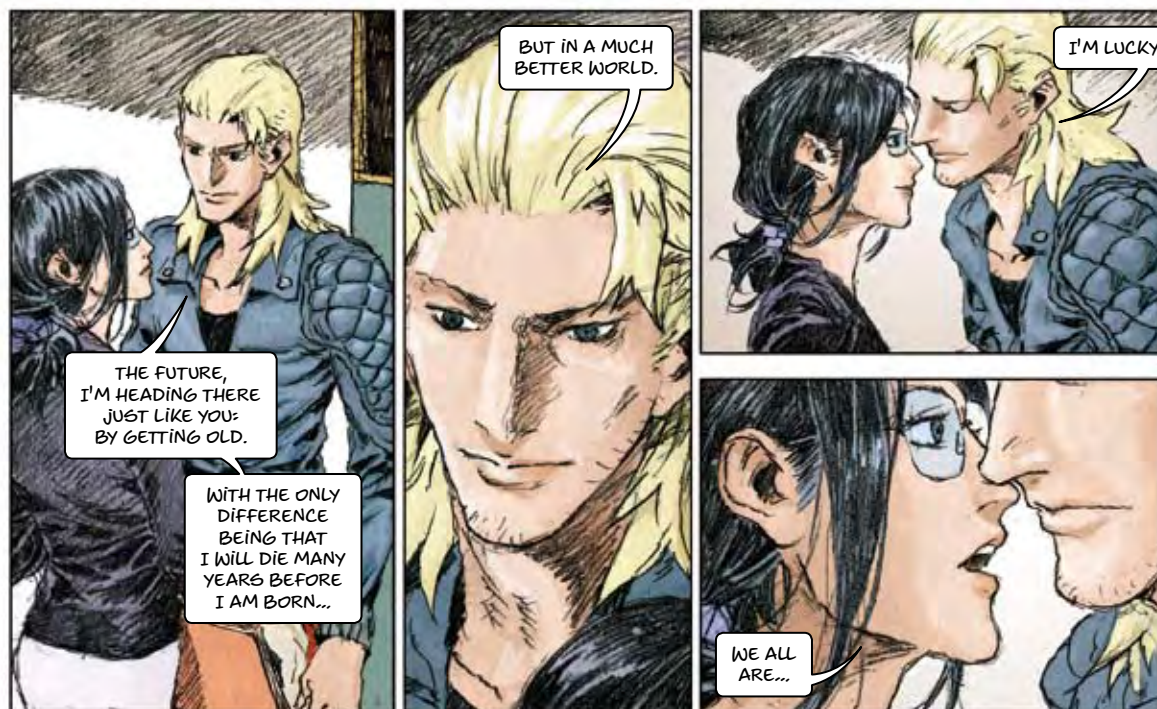
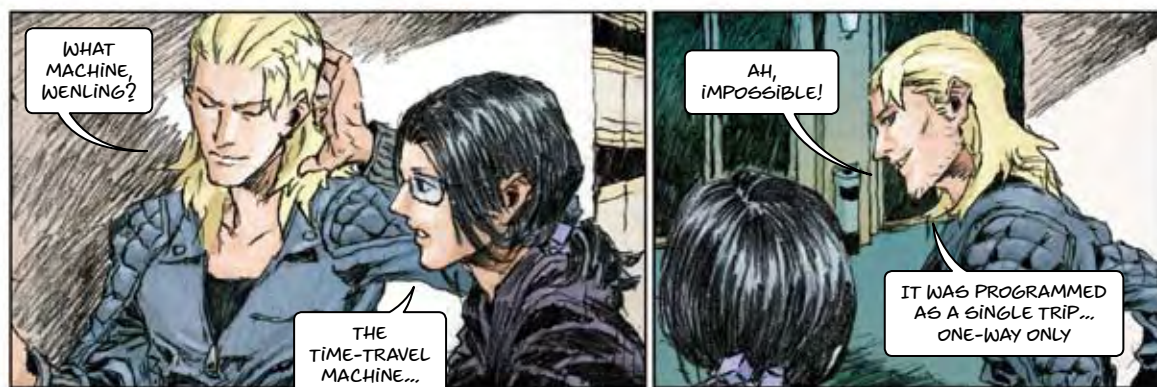
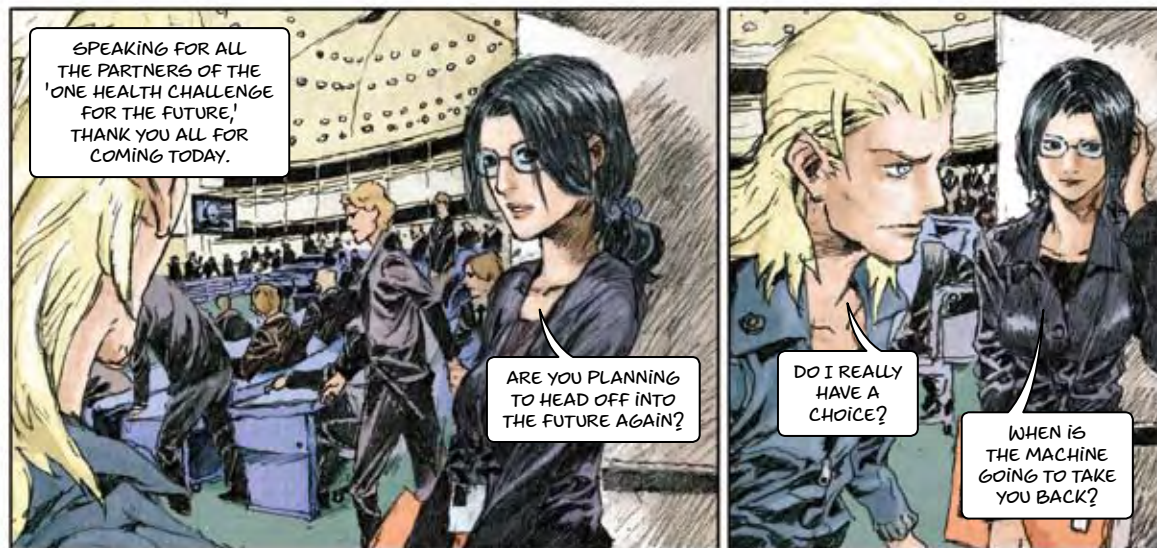
COMMUNICATION IN THIS AREA WILL BE VERY DIFFICULT. NEITHER CITIZENS, COMPANIES, OR THE PRESS LIKE TO HEAR THAT THE EXPERTS DO NOT KNOW IT ALL. WE HAVE TO EXPLAIN UNCERTAINTY. WOW.



NOW I UNDERSTAND WHY THE EU HAS TWO PRESIDENTS. ONE IS NEEDED TO MAKE THE OTHER ROTATE!

STOP IT, JACK... THIS IS SERIOUS BUSINESS.





BACK TO REALITY

Ms Chan Wenling and her friend-from-the-future are engaged in an exciting adventure to convince people to act together and save the world. While the story may be fictional, it is nevertheless intertwined with some factual information. This section offers further reference for some of the story's 'real life elements' and allows you to discover the scientific facts behind the fiction!

1_ Beijing 2006

The first International Ministerial Conference on Avian (Animal) and Pandemic Influenza took place in Beijing in January 2006. It was hosted by the Chinese government and co-sponsored by the European Commission (the initiator of the conference) and the World Bank.

The main outcomes of this event were:

- A global agreement (The Declaration of Beijing) endorsed at the highest level by more than 100 countries and representatives of international and regional organisations, agencies, the private sector and civil society;

A commitment to:

Develop and implement integrated national plans at country level to combat highly pathogenic avian influenza (HPAI);

Build a long-term strategic partnership between the international community and the countries affected or at risk;

Share information and biological materials related to HPAI;

Increase cooperation on global research, including research on vaccines and antivirals;

Evaluate the results and the impact of these efforts.

Pledges of assistance to combat HPAI amounting to a total of \$1.9 billion, of which approximately € 214 million was provided by the European Union in the form of grants.

More information on the Beijing Conference is available at: www.eeas.europa.eu/health/index_en.htm

in particular under: ec.europa.eu/world/avian_influenza

The outcome and impact evaluation of the Global Response to avian influenza is available at www.eeas.europa.eu/health/docs/health_grai_en.pdf

2_ P4 Laboratory

The acronym P4 stands for Level 4 pathogens and biosafety agents, meaning micro-organisms with high pathogenic potential. P4 laboratories are very high-security compounds where highly pathogenic, often very contagious and deadly infectious agents are manipulated for research. Recent examples of pathogens handled in P4 laboratories include the viral agent of severe acute respiratory syndrome (SARS) – a coronavirus – and the Ebola, Marburg, Lassa and Congo-Crimea viruses. P4 labs are closed facilities with many layers of security, including positive air pressure in the 'space suits' used by the limited number of scientists authorised to work in the core rooms of the compounds. There are fewer than 20 P4 labs in the world.



3_ Ebola, Marburg, Lassa Viruses

Source/Adapted from: Wikipedia

They are the pathogens (viruses) responsible for hemorrhagic fevers, diseases characterized by damage to the interior surface of blood vessels and the destruction of normal coagulation mechanisms leading to internal haemorrhaging and often death.

First recognized in Congo (formerly Zaire) in 1976, the Ebola virus is responsible for Ebola hemorrhagic fever, which pro-



okes death in 50 to 90% of cases. There are various types of Ebola viruses, some non-pathogenic in humans but fatal in animals, and some extremely aggressive in humans. There is no specific treatment for this disease.

Bats are considered as the most likely reservoir. In some cases the disease can be transmitted to humans through gorillas, chimpanzees or duikers (sub-Saharan antelopes), generally through contact with carcasses of these animals, after which the virus passes directly from human to human.

The Ebola virus is a potential agent for biological warfare. It is also partly responsible for the decline in chimpanzee populations observed since 2003. The Lassa fever resembles Ebola, has high infectious potential (up to 50% of the population in affected areas) and spreads rapidly. It is responsible for deadly epidemics, mainly in West Africa, where between 300,000 and 500,000 cases occur every year, with death tolls ranging from 5000 to 6000. The vector is a rat.

The Marburg virus is hosted by bats and until 2000 primarily affected the Eastern and South African regions. Two major epidemics occurred in Congo (2000) and Angola (2005).

4_ Zoonoses

Zoonoses are diseases that can be transmitted from animals to humans, and the reverse. They can be caused by bacteria, viruses, fungi, parasites or non-conventional transmission agents (like the prions responsible for Creutzfeldt-Jakob disease and bovine spongiform encephalopathy (mad cow disease)).

Around 70% of new human infectious diseases (the so-called emerging infectious diseases or EIDs) originate in animals. The number of EIDs is increasing exponentially, with new ones diagnosed almost every year. Better surveillance of diseases might partially explain this trend but the main factor seems to be the increase in the size of human and animal populations, together with dramatic changes in human and animal movements around the planet in the context of globalisation.

Diseases do not know borders. Viruses and other agents benefit from larger population reservoirs, more numerous contacts between populations and various species and a strong boost to circulation around the planet. At every instant, hundreds of thousands of passengers are sitting on commercial flights, connecting airports as if they were houses in the same village. Planes also transport live animals (like one-day chicks), eggs, carcasses, meat products, seafood, embryos and semen for breeding.

5_ One Health

'One Health' (OH) is an integrated approach to health that focuses on the interactions between animals, humans, and their diverse environments. It encourages collaboration, synergies and cross-fertilisation between all professional sectors and actors in general whose activities may have an impact on health.





6_ Destruction in Countries

In many countries of the world, particularly the poorest, human livelihoods are closely related to the health of animals. Animals in good health are less likely to transmit diseases, and their production can be optimised in given environments. It is often forgotten that in addition to the human toll of slightly more than 300 deaths (registered cases only) from the highly pathogenic avian influenza epidemic, there was also an economic toll to poultry production, with over two hundred million birds killed in order to contain the disease. The impact of these measures on life conditions and the well-being of the poor in particular has not been evaluated but must be enormous.

7_ Cross-Sectoral Cooperation: Whole of Society Approach

Recent health crises (like SARS, the H5N1 epidemic and the A(H1N1)2009 influenza pandemic) have demonstrated that many more sectors were involved in health crisis prevention



and response than the 'traditional' health sub-sectors (human and public health on the one hand, animal health on the other). Sectors like the environment, wildlife, agriculture, transport, media, and the schools, to name a few, are also key. Cross-sectoral cooperation aims at involving all relevant professional sectors in a common goal, in this case, health crisis prevention and where necessary, response, along with encouraging a contribution to global health. The experiences of H5N1 and H1N1 have also shown that efforts towards better health should not be limited to specialists but should involve society as a whole, including political leaders, opinion-makers, teachers, and citizens in general.

8_ Pandemic Readiness

While pandemic preparedness refers to efforts to prevent, manage and mitigate the effects of a pandemic, pandemic readiness refers to an ongoing status in which all sectors of society are continuously ready for a pandemic, or indeed any major health risk with the potential to disrupt normal life. The global response to the H5N1 and A(H1N1)2009 influenzas resulted in a fair level of pandemic readiness in some countries, while more work is required in others.

9_ Communication: Explain Uncertainty

Communication has been a challenge during the H5N1 and A(H1N1)2009 crises. In spite of many efforts, it is often perceived as insufficient and sometimes contradictory.

Health risks are changing with globalisation, and new strategies – including better global coordination – must be designed and agreed upon for communication efforts. One way forward is probably through better explanation to the public and front-line professionals that *'the experts do not know it all'* and that in fact they often *'do not know.'* Although this may complicate the life of political decision-makers, candid statements on what is certain and what is not clearly known might increase confidence in times of crisis, and avoid the *'damned if you do, damned if you don't'* phenomenon. ■