

In the science of societal change, there are two things to consider:

1. Catalytic interventions
2. Change fast that must last

### Catalytic Intervention

There are actions which, when taken spark a series of actions and results. On the level of human relationships, for example, if one is rude to a stranger, the stranger will, in turn, be also rude.

On a societal and physical level, the building of roads is one such catalyst. Build a road into a forest, and that road will spark a series of actions. For one, people will start coming in, and then start cutting down the trees. One effect will be that the animals will be disturbed and will leave the area. Other people will start claiming parcels of land in the forest for themselves and begin putting up human settlements. Other people will start farming the land, thereby removing all forms of natural vegetation and replacing it with one or two plants. Using chemicals for their fertilizers and using water for irrigation, the water sources become depleted and/or become contaminated with the chemicals.

With the easy access brought about by the road, the forest becomes farmland, and then becomes an area of more human settlements, the soil is paved with concrete and is no longer able to sustain vegetation and no longer able to hold water. In time, the people will start experiencing flooding, water scarcity, human population density, and even criminality.

And all because of a road. That is one example of a catalytic intervention.

### ACTION TO SPARK ACTIONS

An action that sparks a series of other actions that will lead to the desired goal are called 'catalysts'

They decided to focus on three catalytic interventions.

#### ROAD REVOLUTION

#### RAIN GARDENS AND EDIBLE LANDSCAPING

#### 'SOLID AND LIQUID WASTES' CYCLE

#### FAMILY AND PARENTING

#### EARTH, HEART AND ART

1. Road Revolution

2. Edible Landscaping
3. Energy Cycle
4. Earth, Heart, and the Arts

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### The Rise of Oil and Ruse of Roads

In the 20th century, another form of compressed carbon in liquid form was discovered and put into increased use – oil. During this period, the metallic contraption that increased human mobility invented and put into mass production – the car. The manufacture and use of motor vehicles running on the oil-fueled internal combustion engine increased even more after the mid-20th century. In 1945, the military-industrial complex that produced the armaments had nothing left to do with their now-idled manufacturing capacity with the end of the Second World War. One man came up with an idea. He was then the Secretary of Defense of one of the victorious countries. He also happened to be the president of one of the biggest armament manufacturing facility for the WW II. Together with other car manufacturers, they decided that to continue their business profitably, they should be making more and more cars.

There were two obstacles to this idea. One was that the trolley and train system was very good of this country was very good. Los Angeles alone had 400 miles of rail lines which served \_\_\_ million riders a year. The other obstacle was that roads were not many, because trains and trolleys were effectively and efficiently moving people. To address these obstacles, this man – a example of what is now a perfect case of conflict of interest -- came up with two solutions. First, the consortium of car-makers bought up most of the trolley and train lines, ripped out the rails or simply paved them over with concrete. Thus, an effective competition of mass transportation was eliminated. They were accused and found guilty of ant-trust violation, for which they were made to pay the princely sum of five hundred ... dollars.

The second solution was even more creative. In the wake of the paranoia of the World War II, the good Secretary of Defense said that as a matter of national security, federal funding had to be applied to build massive roads to connect the cities and the states. In hindsight, how that ruse was believed by some of the most intelligent people on the planet is an example of a great marketing strategy using fear – a very powerful emotion -- as a motivator.

And so more and more cars were made. And people of this country became used to the individual mobility. This country enjoyed vast open spaces that allowed for wide open roads. Despite that, and because of waste of that space for the very inefficient individual mobility, the worst traffic jams – and the accompanying stress, waste of time and fuel -- are not experienced by this country. This is in addition to the tremendous cost of the oil importation and production.

What makes it even worse is that this kind of mobility – the car-based system propagated by the movies made in the city that has become notorious for the worst traffic jams in the country -- has become the model for countries that cannot afford the space nor the money to spend for fuel.

The story that they tell in the following pages are but the start of a long journey. Three and a half months of the 2015 Spring semester can never be enough to fill up

the bucket of what needs to be done in the face of the climate crisis. However, three and a half months is more than enough for them to realize that the boat is on a collision course, and enough time to begin to don on their life jackets, and perhaps also enough time to begin calling out to the captain and senior crew members of the boat to watch out. If the captain and senior crew members do not listen, and realizing that that the boat will sink with all of them, with the junior crew members having the most to lose, maybe the latter will muster enough courage to grab the wheel of the boat and steer it to safer waters.

Their future is in their hands.

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## Road Revolution

Who are roads for? Are roads meant to move motor vehicles? Or are they meant to move people? If it is meant to move people, why are we devoting so much space for motor vehicles, to the exclusion of people?

The most catalytic intervention is in totally revolutionizing the road system. We earlier saw how the entire road system of the US was designed to cater to the greed of the auto industry, a marketing ruse that goes on to this day. For this reason, we have cars filling up the roads resulting in people no longer able to move efficiently. This mindset is the source of much of urban and human maladies today. These societal illness include, among others, social alienation and loss of sense of community, utter waste of space, water, steel, pressure to make money to pay for car amortizations, gas, insurance and maintenance, loss of permeability of the soil, accidents resulting in deaths or severe injuries, air pollution, and sedentary lifestyle diseases.

Consider also the impact of the cars and motor vehicles in its entire life-cycle of a cars -- the mining, refinery, and transport of ore, oil and aggregates to make steel, gasoline, and roads, clearing of forests to plant rubber to make rubber tires, and the emissions of gasoline and the use of HFCs (super-greenhouse gases used for mobile air conditioning units) and the urban heat islands from the concreting of roads for motor vehicles. All the emissions of the energy and gases used amount to more than 50% of the heat-trapping gases that is the cause of the climate crisis.

The psychological impacts are even worse. People cooped up in the box of their cars are somehow transformed into individualistic rude creatures. Thus the phenomenon called 'road rage' where people shout, fight, and even kill each other when their vehicles cross and crash paths

Roads transformed human beings into the rude, individualistic, wasteful and selfish creatures that we are today. In the same manner, roads can transform human beings to be kinder, collective, more efficient, and more selfless creatures. How does that happen?

When roads are opened and become public spaces instead of almost exclusively for private motor cars, people are able to interact with one another, and see each other as human beings. In cars, people do not see one another as they see only metallic monsters that barrel their way as fast as they can on the roads.

Transforming the road system to make it more pedestrian and bicycle friendly brings about a cascade of benefits:

Renewed sense of community and vitality of human relationships;

Reduced transportation expenses;  
Healthier lifestyles; availability of more space for public use for community gardens and affordable housing;  
Less air pollution;  
Reduced recurring expenses for car mortgages, fuel, maintenance fees, insurance and greater disposal income;  
Reduced energy use in the mining and making of steel, oil, rubber, roads; reduced use of super greenhouse gases;  
Much less accidents and road rage;  
More productive time; Less stress  
Predictable travel times;  
Reduced water use (from the washing of cars);  
More time with friends and family instead of sitting in traffic;  
Less criminality because of the reduced social isolation and because social interaction becomes more transparent and people are in effect, watching each other's backs;  
More space can be devoted to rainwater catchment ponds to prevent flooding and allow for percolation to restore water into the aquifer (groundwater table);  
Spark local creativity and industries in the making transportation systems (eg, solar and pedal-powered trolleys, self-contained renewable energy transportations systems, bamboo bicycles, etc.) and thus, catalyzing the transition to the realm of CPR or Restorative Economics.

How does one bring this about? That is a difficult question, especially for short-termed political functionaries who are afraid to court the ire of the noisy car-owners, who also happen to be the worst whiners. Certain common sense policy measures are available. One is increasing the price of cars say, three fold. This has been done in the City State of Singapore. In an attempt to tame the motor car, the Government issues a limited number of COEs (the Certificate of Entitlement), a piece of paper that entitles a person to buy a car. The number of COEs are limited and is issued taking into account the carrying capacity of the roads. It costs more than the car itself. Also the tax for cars is very high. A simple sub-compact car will cost between US\$50,000 to \$60,000 \_\_\_\_\_. Also, Singapore invested heavily in their public transportation system.

This is pure common sense. Singapore is an island state, barely 70,000 hectares, less than one-half of the island of Oahu in Hawaii. In 2014, the number of private cars in Singapore shrank to 604,000 units from 607,000 the previous year. This was brought about by the reduced number of COEs issued by the Government. In contrast, the Island of Oahu had almost 1.2 Million motor vehicles, almost as there are people (2007 data \_\_\_ need latest data). Considering how small the city of Honolulu is, it is no wonder that the roads leading to and from the city look like the parking lots. Considering also that Hawaii is located in the middle of the Pacific Ocean and thus, all of its oil must be imported from very far away, Hawaii must rethink its transportation strategy.

What is even worse are the highly-urbanized cities of the Philippines such as Metro Manila, Cebu City, Davao, and even the cities that are beginning to grow in size and in urbanization. In what is a perfect case of monkey-see/monkey do, Filipinos, like the other low-consuming countries (aka developing countries) have bitten hook-line-and-sinker the ruse of roads and the motorized madness promoted by the movies and by the countries eager to sell their cars. To sell their cars, the US, later Japan

and now Korea, have been lending money to the Philippines to build roads, supposedly to spur the country's economic growth. And of course, our mindless political leaders bite into the ruse as a way of creating instant (but very temporary) jobs, spurring economic growth without understanding that creating more roads just create more traffic, and for many of the corrupt politicians, to line their pockets with their 20% SOP (Standard Operating Procedure, a euphemism for kickbacks). Increasing the price of gasoline or diesel to its realistic levels is also not politically palatable. Realistic levels refer to taking into account the real cost of the oil, referring to the fact that oil taken out will be gone forever, the cost of air pollution, and the cost of the human miseries resulting from the emissions of carbon dioxide that is emitted from the entire life-cycle of the motor car. These are what economists call externalities, a high-faluting word that really just means that real cost of a product if everything else not visible in the conventional cost-accounting method are taken into account. This cost should also include the cost of the roads and public space that are wastefully used by the car owners but are paid for everyone through their tax money. After all, when the car manufacturers roll out their cars on the road, did the cars come with roads?

So how do we create the conditions for people to stop buying and using cars that are clogging in a manner that is politically feasible and palatable?

In the same manner that wide roads promoted the proliferation of cars, narrow roads for the motor cars would promote the efficient use of space. It is a 180-degree mind-shift in the transportation system: A shift from promoting private individual transportation to promoting efficient public transit system; from wasting public space for the use of a few to using public space to benefit the many; from widening of roads to constricting the roads, i.e., by enforcing a road diet; from scrambling and grabbing a few inches of road space to the sharing of the road space. This is the philosophy behind the Share the Roads Movement.

In Filipino, there is a nice term for it: Bayanihan sa Da'an. Bayanihan is a word that originates from two other words – bayan – community and cooperation; bayani – hero; and bayanihan, which loosely translates into 'cooperative heroism.' The idea behind this movement is the simple and obvious: Roads are meant to move people! The method by which the proponents seek achieve this goal is also simple: Divide all the roads by half. Half for motor vehicles, and half for people. The half devoted for motor vehicles can be used by cars and public transit, and the other half for people to have the option to walk and to bike. Is this impossible? Yes, it is impossible only in the minds of people who are spoiled by the cars-crazy culture. But it is happening. One needs only to see the roads of Copenhagen or Amsterdam, cities that can claim to be truly developed.

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## Parking

No parking must be allowed on the roads. After all, in every jurisdiction in the world, the basic principle of law is the principle of nuisance. No one may use his property to physical, emotional, mental, and moral well-being of others.

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Action Plan to Prove the Concept

Bayanihan can Ease Traffic Jams  
Updates

## Urban Edible Landscaping

As indicated by numerous studies, food security will be a major concern in the future even as it is today. People around the world suffer from malnutrition – either of too little food in LCCs (low-consuming countries) and too much in OCCs (over-consuming countries). In the latter, lifestyle diseases such as high-cholesterol, diabetes, high-blood pressure, obesity etc., have risen to epidemic proportions. In country alone with a population of about 300 million, half of all adults have diabetes or pre-diabetes, three out of four are overweight and obese.

And because of the influence of Western countries the rest of the world – especially the ‘cola and fast-fat-foods, coupled with no physical (sedentary) sedentary ways – Asian and other countries are beginning to suffer the same lifestyle diseases. One catalytic intervention is in urban edible gardening. It is catalytic because it sparks multiple actions leading to the goals that seek to be achieved. Why urban? Because more than half of the world’s population now lives in urban areas. These are the cities – the concrete jungles – where the most pervasive thing is cement or asphalt –for roads, parking lots, pavements, and buildings. It is also the area where humans are most dense, yet ironically, even next door neighbors hardly know each other, and even highly distrust one another. Here, everything is for a price -- counted in terms of money. Most of all, the disconnection to Nature is most apparent. All food is bought from the supermarkets. In fact, even water is for sale, in more recent years in plastic bottles.

Urban edible gardening, perhaps more fashionably called ‘edible landscaping’, will lead to a series of desirable actions and results:

### Food Sufficiency

First, it will promote food sufficiency and self-reliance. This is especially important in an era of the climate crisis where food security will be a major concern. People will begin to realize the value of healthy and non-processed food that can be harvested right there closest to where they live. It will also give meaningful livelihood to many who are unemployed and who have barely anything to eat. This is especially the case street children who resort to begging or petty crimes, and to the elderly who have lost productivity and meaning in their lives. There are so many of them out there, doing nothing. Opening up areas for them to plant and we unleash their potential to feed entire communities.

There may be questions on whether the plants planted in heavily polluted areas may be immediately edible. We leave that to the experts. But what is important to note is that if we removed as many poison-fuming motor vehicles from the roads as possible, in time, the air and the soil will become cleaner and safer.

## Reconnecting to Nature

Second, it will restore the lost connection between man and Nature. Nothing brings home the indivisible inter-action between the three life-sources of Land, Air, and Water than having to touch the soil to plant a seed, nurture it with water and sunlight, and later harvest and eat its fruit or leaves. This act will also make people realize the value of water. Without water, plants, and animals die. In time, people will be more sensitive to the waste of water that is going on, and the loss of water from rainfall that no longer permeates the soil because of all the space in roads and parking lots that have been paved over with concrete. In time, they will begin to understand the importance and need for rain gardens and rainwater collectors such as wetlands, small ponds and lakes as a source of freshwater and as an anti-flooding measure. As seen from the impacts of the climate crisis, water -- too much and too little of it -- is and will be the major concern.

## Connecting with Other Humans

Third, planting in a community garden restores the fraying sense of human community and the spirit of sharing. With a community garden, people are able to interact in a wholesome way, talking about the weather, about how their plants are growing, sharing planting and growing tips with one another, and even sharing their produce with each other and with friends. A man who grows his own fruits and vegetables has deserved 'bragging rights' and will readily share them with friends and restore the natural impulse of generosity. After all, Nature is generous. One seed grows hundreds of fruits.

## The Pain of Loneliness

Loneliness is the worst emotional pain. That is why the most severe form of punishment even among those already in jail in solitary confinement. In contrast, wholesome human interaction and cooperation is a source of genuine happiness. The cooperation created by the activities of caring for plants and in the sharing of produce from one's labors are some of the sources of genuine happiness. Many things come about when people interact. Among others, they will discover common interests and hobbies, and begin to share creative and productive time with one another. People who like to paint or who like music will cooperate and may go to painting sessions and play (or simply enjoy) music among themselves. People who like to bike will go biking together and discover new trails. People who like to cook will share each other's menus and food. And so on. Relationships -- with family and friends -- are the first source of genuine happiness.

Urban edible gardening, especially in cooperation with one another, is definitely a more wholesome, more healthy, more happy, and more productive than spending one's time in front of the boob tube watching senseless shows heavily

interspersed with advertisements that urge people to “buy things they do not need, with money they do not have, to impress people they do not like.”

---- Plants to be used: KKK

The three most adaptable and nutritious plants in our tropical paradise may be summarized into three same letters: KKK: Kamote, Kamunggay, Kangkong.

Kamote: Sweet Potato (9 Jan 2016\_\_ 847 am)

Sweet potato is very high in nutrition and in fiber. \_\_\_\_\_ (cite studies here of kamote as a main staple. From Jimmy Galvez Tan.

In the era of more severe typhoons and more intense rains, kamote offers a brilliant adaptation quality. Winds cannot collapse the trunk and branches of the kamote. They are already ‘collapsed’ and are lying on the ground.

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### Energy Conservation

One of the main sources of the climate-forcing gases, also known as the greenhouse gases, is the use of electricity that is powered by fossil fuels such as coal and oil. It is one thing to use electricity for necessary activities, such as dining at night, or doing chores at night. But it is a totally different thing when electricity is simply wasted by excessive use of lights even during daytime, or when no one is using them, or putting air-conditioning units to freezing temperatures even when the temperature is mild and agreeable.

Perhaps as a mark of how wasteful and how lazy human beings have become, especially in the over-consuming countries, take the example of television sets. Because of the invention of the remote control of TV sets, it takes only a simple button to turn on a TV set that is already on stand-by mode. This is when one sees a red light near the screen indicating that the TV is on stand-by.

That television set is actually ON, but on stand-by. The only thing that is not ON is the screen, but for all intents and purposes, the television set is using up electricity. The electricity use of TVs on stand-by mode alone for one of the OCCs (over-consuming countries), TVs that no one is watching, sucks up the equivalent of 1 Billion watts of electricity. At 350 Megawatts per power plant, that is equivalent to at least 3 coal-fired power plants. And then consider the other appliances

### Vision and Action

In the following pages, students of the University of Hawaii Richardson School of Law took a rather unconventional course called Climate Justice for Future Generations. This course emphasized that more than analysis of the climate crisis, what needs to be done, by whom, when and how, the need for action is the call of the times. The library and the internet are full of papers and studies, most of which repeat the same thing over and over again.

The story of the climate crisis has been likened to a big boat sailing on the sea. The captains and the senior crew members are having a party, getting drunk, and enjoying themselves so much they fail to see a blip on the radar. This blip indicates a rock in the horizon and that the boat is headed directly towards it.

The mid-level crew members are studying how strong the impact is going to be, how much damage it will inflict on the boat, how many people will die as a result of the collision, and decide to write a pages and pages of the analysis. Seeing how dangerous it is, they are paralyzed into inaction.

The most junior crew members, being too young to drink alcohol, and seeing what the consequences will be for them if they boat hits the rock, decide to take action. They quickly don on their life jackets, slow down the speed of the boat, and then consider grabbing the steering wheel of the boat from the drunk senior crew members.

That is what the students of the UH Law School class decided to do. Instead of joining the drunken party of the grown-ups, instead of writing more papers that end up in the dusty cabinets or waste baskets of their professors, they have decided to take action.

They decided to focus on three catalytic interventions.

1. Edible Landscaping
2. Road Sharing
3. Energy Conservation

The story that they tell in the following pages are but the start of a long journey. Three and a half months of the 2015 Spring semester can never be enough to fill up the bucket of what needs to be done in the face of the climate crisis. However, three and a half months is more than enough for them to realize that the boat is on a collision course, and enough time to begin to don on their life jackets, and perhaps also enough time to begin calling out to the captain and senior crew members of the boat to watch out. If the captain and senior crew members do not listen, and realizing that that the boat will sink with all of them, with the junior crew members having the most to lose, maybe the latter will muster enough courage to grab the wheel of the boat and steer it to safer waters.

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