

38 SYNERGY CORRESPONDENCE CONCERNING THE GLOBAL PETROLEUM SUPPLY AND SUSTAINABLE FUTURE HUMAN SETTLEMENT PATTERNS

20 JUNE 2019

TOPIC ONE: THE CURRENT STATUS OF THE GLOBAL PETROLEUM SUPPLY.

When SYNERGY first tuned in on the work of Post Carbon Institute circa 2010, we were pleased to find the Institute's efforts on the topic of Petroleum Supply. The work of J. David Hughes including his focus on "bridge fuel" as well as "*Drill, Baby Drill*," "*Drilling California*," and "*Drilling Deeper*" were especially important.

Here was the smoking gun: The much hyped "tight plays" had a more limited potential than claimed by carbon dependent ENterprises and the Federal Energy AGENCY. In addition, deep ocean plays were very expensive and prone to accidents such as Deepwater Horizon and the decade and a half "volcano" of oil from the Katrina destroyed Saratoga Platform. This information was just what was needed by those who sought to dampen unfounded enthusiasm concerning the prospect of a never-ending supply of Petroleum.

To provide context is important to note that SYNERGY relocated from the Piedmont of Virginia to the Texas Gulf Coast in May of 2017. This move resulted in encountering a range of new Perspectives.

Recently, a PCI email suggested downloading "*Climate After Growth*" (2013). This Perspective opens with the review of the Petroleum Supply circa 2012 - 2013. The 2012 - 2013 time frame is now ancient history. Trying to convince citizens that it represents the current Petroleum Supply status will backfire. No one believes this Perspective based on 'the news'.

In search of something more up to date, I downloaded *Shale Reality Check* (Winter 2018) which brings us up to the Fall of 2017. Is there a Fall of 2018 version on the agenda?

Even the status of the Petroleum Supply in 2018 may not be the place to start. A 29 November 2018 *Houston Chronicle (HC)* headline reads "*U.S. oil and gas reserves surpass 1970 record*" and "*U.S. Gasoline, Propane Exports Hit Record Highs*" (*HC* 23 April 2019.)

Of even more concern is a 19 April 2019 *HC* headline "*Rebounding Haynesville Shale Breaks 2011 Production Record*". Should that be happening given what is stated in "*Shale Reality Check*"? Then there is this: *Houston Oil Companies Seek Next Boom Amid Azaleas and Live Oaks*" a *HC* headline from 25 April 2019. (This "Boom" is projected in Austin Chalk - a tight play geologic formation.)

And then there are the Gulf of Mexico plays: “*As Energy World Focuses on Permian, Gulf Makes its Own Comeback*” *HC* 26 Feb 2019. There are new discoveries in the Perdido Corridor (“*Shell Finds Major New Discovery in U.S. Gulf of Mexico*” – *HC* 24 April 2019). There are also new deep water discoveries off the North Coast of South America and elsewhere around the planet.

The only question is how many of these new deep water plays will produce at least 200 million barrels of oil equivalent so that they justify the construction of a new platform. The Appomattox Platform is getting ready to pump and the Vito Platform is on the way. There is an expansion planned for the Atlantis Platform. And the current U.S. administration wants to displace the caribou on the North Slope...

Big Oil has sharpened their pencils and now believe that they know how to make money in tight plays. deep water and other hostile environments in spite of lower prices. At least that was the word at the start of 2019.

With all this ‘in the pipeline’ the U.S. is already a NET EXPORTER of petroleum for the first time in decades. The only thing keeping Permian Basin from swamping the world market is the lack of pipelines to the coast. Several of those are under construction and will pump in 2020.

I have an idea how PCI can keep up with and perhaps counter the growing impression that the longer we go, the more petroleum we discover as well as learn how to harvest it economically.

That idea is for PCI to subscribe to the digital edition of the *Houston Chronicle* for about \$10 a month and put an intern on the job of reading and distributing the key issues as they are reported. *HC* is a Hearst publication and does a surprisingly good job of covering the field – as it were. They have a columnist – Chris Tomlinson – who is on a par with the best of the NYT and WaPo (even Stephen Pearlstein) when it comes to calling a spade a spade on the full range of economic, social and environmental issues.

You may not need to – or want to – know the very latest in the Chevron vs Oxy quest of Anadarko. However, you could use the information that both Schlumberger and Haliburton (#1 & #2 in energy / oilfield services world-wide and both headquartered in the Houston REgion) reported that “lower prices for hydraulic fracturing services in North America” would continue to sting 2019 revenue and profits or that the “*Rig Count Falls Below 1,000 for the First Time in 12 Months*” (*HC* 25 April 2019).

It is not as if *HC* does not try to cover the topic: “*Subsidies for Renewables Under Attack in Texas*” (*HC* 25 April 2019), “*To Fix Global Warming, the World Needs Houston*” (26 April 2019), “*A Green New Deal for Red States*” [Opinion] (*HC* 27 April 2019)

One way or another PCI needs to pull together a factual and comprehensive ‘story’ as to why even with growing “proven” reserves of Petroleum, the US needs to “leave it in the ground,”

Regardless of the current price at the pump humans cannot afford to burn carbon because there is no limit to the Petroleum Supply. PCI must find ways to kill the myth that U.S. economy will suffer more if we do not “burn, baby burn” than if we act in accordance with our human’s collective long-term best interests.

TOPIC TWO: THE FUTURE IS NOT “RURAL”

“The Future is Rural, Food System Adaptations to the Great Simplification” by Jason Bradford is deeply flawed. This thesis relies on a number of unfounded assumptions. We list just three.

The biggest problem Jason Bradford’s thesis is that he is looking at sustainable Human Settlement Patterns from the wrong end of the telescope. CountrySide residents have much higher per capita energy consumption than do URbanSide residents.

David Owen in *“Green Metropolis: Why Living Smaller, Living Closer, and Driving Less Are the Keys to Sustainability”* (2009) documented that by far the **LOWEST PER CAPITA CONSUMPTION OF RESOURCES** by humans **AND** the **LOWEST PER CAPITA GENERATION OF AIR, LAND AND WATER POLLUTION** by humans had a common characteristic:

Both result from humans living in contemporary URBAN settlement patterns.

Think how much better these performances would be if even more functional URban Human Settlement Patterns evolved. Humans now know how to build those more functional URBAN places as documented in *THE SHAPE OF THE FUTURE* (Risse, 2000) and *TRILOGY* (Risse, 2010). Also see the latest “Foot Traffic Ahead” report.

Now comes Michael Mehaffy with *“The Urban Dimensions of Climate Change: Lessons for a New Urbanism”* in *Public Square* (19 March 2019) with recent data to support Owen and Risse. See Graphic “COMPARISON OF COUNTRY (GRAY) AND “CITY” (RED) GHG EMISSIONS PER CAPITA” in this paper. This graphic documents that URban Fabric is more efficient than Non-URban, scattered Human Settlement Patterns.

The average resident of Stockholm REGION generates six times LESS Green House Gas (GHG) than the average resident of the United States. This is due to the scatteration of both URban and Non-URban settlement patterns in the U.S.

However, it important to note that even the nation-state of Sweden has higher per capita rates than the Stockholm REgion.

If there is a mass loss of human population due to one or more of the catastrophes enumerated in *THE LITTLE BOOK*, (Risse, 2019) and something on the order of 5 percent of current population survive, then humans would need to “start over”. At some point they might evolve subsistence agricultural hamlets such as pictured on cover of “*The Future is Rural, Food System Adaptations to the Great Simplification.*”

The illustrated agricultural hamlet is a remnant settlement form with which we are familiar due to exploring examples in Bavaria and Alsace. It is very clear that even in Bavaria and Alsace these enclaves continue to exist because of state / nation-state subsidies and URban technology such as Telework. They DO NOT survive because commuting to the field by tractor is more efficient per capita.

In the event of a mass extinction of humans, those places would be second generation URBAN places. They would evolve over time from Hunter Gather Society Trading Villages following processes described by Jane Jacobs in *The Economy of Cities* (1969) and by Yuval Noah Harari in *Sapiens, A Brief History of Humankind*. (2011 - 2015) This transition could be more rapid than the last time humans evolved from roving bands to neolithic trading villages.

If substantially more than 5 percent of the human population survived along with extant remnants of Urban structures and infrastructure then the future would be Urban of one flavor or another.

The second problem with Bradford’s thesis is Vocabulary.

There is no longer such a thing as “rural” as traditionally defined in the United States. This fact is documented in *THE SHAPE OF THE FUTURE* (Risse, 2000). SYNERGY has dubbed “rural” as one of eight “Core Confusing Words” that confound intelligent discussion of Human Settlement Patterns. There is no longer any “rural land” – not even in “The Bob.” “The Bob Marshall Wilderness” which was a neighbor when we were growing up in Montana. There is also no rural culture. That ended just after the Second World War. “Rural” has been wiped out by the forces of URban Society. The telegraph, then the radio, movies, television, communications technology and the pervasive URban Economic Structure have eclipsed the meaning of “rural.” There are “low density” areas and there are illusions of the possibility of reverting to a “rural” past.

Bradford’s cover illustration is not rural, it is a small Urban enclave in the CountrySide. See again NOTE ONE on VOCABULARY AND CAPITALIZATION.

Based on observations in Bavaria and Alsace and the publication of *The Theory & Practice of Agrarian Urbanism*, Duany & DPZ (2911) SYNERGY worked for four years trying to generate interest among denizens of the CountrySide to evolve Agrarian NEighborhoods in the Piedmont of Virginia. We know a bit about convincing CountrySide residents to evolve alternative Settlement Patterns.

Persons who enjoy living on an organic farm are likely to assume that others would find it an attractive lifestyle. For many citizens it would not be any more attractive to live on an organic farm than it would be for those who do enjoy life in the CountrySide to be told that they must relocate to a 30 story high-rise. See NOTE TWO

Between 1780 and 2010 the percentage of those who are directly involved in the production of food and fiber in the United States has wilted from 95 percent (a nation of patriotic, subsistence farmers) to 5 percent of the population. Based on SYNERGY's calculations we suggest that about 20 percent of the population can, by taking advantage of "Subdivision Recycling" and "URban Agriculture" be directly involved in food and fiber production. That would be the sweet spot for those living in the CountrySide – i.e. OUTSIDE the Clear Edge Around the Core of New URban REGions. It would not be anything like 80 or 90 percent much less 100 percent.

About 20 percent of the population would reflect an intelligent BALANCE to support a sustainable, resilient and secure food supply with combination of Urban Ag, Agrarian NEighborhoods and the sustainable remainders carefully salvaged from Industrial Agriculture strategies.

A third reality is that Cubans do not have "the answer." Not long after the Venezuelans followed the Russians and were forced to cut back their support of Cuba, this story appeared in the Houston Chronicle: "*Shortages hit Cuba, raising fears of new economic crisis*" (18 April 2019) and the next day "*At the crowded Texas border, a crush of Cubans hope for their lucky number*" (*Houston Chronicle*, 19 April 2019).

There is one other arrow in this quiver. It happens to be misshapen and dull in its current form but is worth mentioning. Amy Liu and Nathan Arnosti at **The Brookings Institution** have recently published a short Perspective "*The Best Way to Rejuvenate Rural America? Invest in Cities.*" (23 Apr 2019). This comes in as the second worst recent Human Settlement Pattern Perspective by well informed observers. The problem is primarily due to the use of two Core Confusing Words: "cities" (uncapitalized) and "rural". If one prints out the essay and then crosses out all the uses of the word "rural" and also substitutes "REgion" or "New URban REgion" for the use of "city" or "large city" one can squeeze meaning from this effort.

The key is to recognize that the chance of a COmmunity in the CountrySide to be a viable (Balanced) economic component is dependent upon 1). The Radial Distance from the Core of the

New URban REgion of which it is part, 2) the magnitude of the economic status of the Core and 3) the Critical Mass and BALANCE of the COmmunity in the Countryside. See NOTE THREE

A SECOND EMAIL

SYNERGY had not heard from Mr. Miller on TOPIC ONE or TOPIC TWO so on 19 May we sent him the following note that has been edited for clarity:

On 18 April 2019 PCI reached out to readers of your newsletter and asked what we were up to. I responded to the survey and, as promised, followed up on 29 April with comments on two topics.

I have not heard from you, however, I have further information on TOPIC ONE and TOPIC TWO.

WITH RESPECT TO TOPIC ONE CONCERNING THE GLOBAL PETROLEUM SUPPLY:

In my 29 April note, I mentioned Chris Tomlinson, a columnist for the *Houston Chronicle*. On 6 May Tomlinson published a column titled “*The world has already found all the oil it should ever burn.*” This strikes me as a perspective that should be front and center with PCI – stop spending time and money looking for more oil in difficult to access conditions. Rather, spend that money on finding ways to reduce burning of carbon and ways to suck CO2 out of the atmosphere. Tomlinson’s column includes citations to sources that back up this Perspective.

Also on the TOPIC of carbon: There seems to be an annual “worlds biggest conference” on some aspect of the petroleum economy every few months in Houston. These conferences draw “10s of thousands” of paid participants. The most recent one was the “Offshore Technology Conference.” On 10 May Chris Tomlinson published a *Houston Chronicle* column titled “*Smart Offshore Tech Moving from Oil to Wind.*” That also sounds like something PCI should be focused on.

WITH RESPECT TO THE TOPIC OF A “RURAL” FUTURE:

Concerning the future of URban vs NonURban Human Settlement Patterns a new book has been released. The title is *The Urban Fix*. It is written by the well respected academic Doug Kelbaugh. The list price is \$170.00 but you can receive a very good survey of the book from Robert Steuteville’s *Public Square* (17 May 2019) summary titled “*Why cities are the world’s best hope for climate action.*”

Kelbaugh repeats much of what we say in our note to you of 29 April. Most important he adds in-depth analysis of “Urban Heat Islands,” their causes and cures.

Turns out that the way to mitigate the impact of Urban Heat Islands provides a immediate benefit for URban area residents AND provides major steps toward reducing energy consumption as well as CO2 emissions.

This package of strategies provides an immediate benefit as opposed to just the long term cure for what many still do not believe is a ‘real’ problem.

I hope this information is of help in your efforts at PCI. Keep up the good work.

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NOTE ONE ON VOCABULARY & CAPITALIZATION.

This NOTE updates both **APPENDIX ONE – LEXICON** and **APPENDIX TWO – CORE CONFUSING WORDS** of *THE SHAPE OF THE FUTURE* (2000)

In the evolution of a robust and functional Vocabulary to accurately articulate the complexity of Human Settlement Patterns, SYNERGY / E M Risse avoids the use of several Core Confusing Words and attempts to evolve words, phrases and letter sequences that are intuitively clear in the context used. The Core Confusing words that are avoided include **UNCAPITALIZED** use of the words “city”, “exurban”, “family”, “local”, “rural”, “sprawl”, “suburban” and “urban”.

Capitals are employed for the key elements of the settlement pattern Vocabulary because words that have specific meanings with respect to Human Settlement Patterns must be treated like Proper Nouns to avoid confusion. Within the guidelines of conventional grammar, ENterprises, AGencies and INstitutions are free to employ All Caps, Initial Caps and Interior Caps to differentiate and advertise their products and services. Parents create new Proper Nouns when they become parents.

Why should those trying to UnderStand and articulate the complexity of Human Settlement Patterns be required to rely on confusing words and phrases and arcane rules of grammar?

Due to the fact that Capitalization survives most inter-system translations, Capitalized terms are employed when a specific definition of a word or phrase is intended. ALL CAPS are used for emphasis. This is because *italics*, underlining, **bold**, **color** and **highlighting** are often removed in software translations – e.g. different software used by email providers.

Many words, phrases and letter sequences used in SYNERGY / E M Risse communications, Perspectives and books that APPEAR to exhibit ‘irregular capitalization’ are defined in the GLOSSARY linked from the *RESOURCES* page at www.emrisse.com. The evolution continues and some use of Capitalized words have not yet been added to SYNERGY’s on line GLOSSARY. Many of the words used by SYNERGY are defined in *THE SHAPE OF THE FUTURE*, APPENDIX ONE – LEXICON, however, these definitions were current when the book was last revised.

In addition to consulting the GLOSSARY, one can Google ‘e m risse’ followed by the word, phrase or letter sequences in question – for example ‘e m risse J / H / S / R / A’ – and find a definition and / or find the word, phrase or letter sequence used in context.

Links are not provided for referenced resources which are out of the control of SYNERGY. References to resources not authored by E M Risse can be located via an Internet search.

An expanded Capitalization strategy has been employed since the publication of CP # 33 (June 2014). In the past, a second capital has been used **WITHIN** compound words with specific meanings (e.g. OpenSpace, SubRegional, etc.) to focus attention on the need to understand the exact meaning of these terms.

As noted in APPENDIX TWO of *THE SHAPE OF THE FUTURE*, there are some confusing words for which there is no good substitute in English. In the past the words Unit, Cluster, Neighborhood, Village, Community and Region (including New URban REgions) have been capitalized. In Current Perspective # 33 and subsequent publications, a double capital is used to start the title of each organic component of human settlement pattern – e.g. UNit, CLuster,

NEighborhood, VillAge, COmmunity, REgion. Also additional words will be given Interior Capitals (e.g. HouseHold and SubREgion) as the need arises.

If you do **NOT** find the avoidance of Core Confusing Words and expanded Capitalization to indicate the application of a precisely defined Vocabulary useful to articulate a comprehensive Conceptual Framework for Human Settlement Patterns, you are welcome to create your own Vocabulary system to achieve UnderStAnding in the context of Awareness => Interest => UnderStAnding => Informed Action with respect to Human Settlement Patterns.

However: Do not be deluded and think that you will achieve UnderStAnding much less Informed Action using an inadequate Vocabulary which triggers Unfounded and Conflicting Neural Linguistic Frameworks. These words reflect Disorienting Naive Reality founded on Primitive Genetic Proclivities. See Current Perspective # 24 *Live By / Die By* linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com .

NB: Evolving a functional Vocabulary is an ongoing process and feed back is welcomed. Please DO NOT provide blanket negative feedback UNLESS you also provide an alternative strategy to

evolve a functional Vocabulary. The continued use of Core Confusing Words and limited Capitalization of words – especially for the organic components of human settlement – is NOT an acceptable response. Also see *Millennials Destroyed the Rules of Written English and Created Something Better: The Spelling and Grammar Rules Do Not Apply on The Millennial Internet*, Rachel Thompson, *Mashable* (2 APR 2018).

NOTE TWO ON 30 STORY TOWERS

Human Settlement Patterns consisting primarily of 30 story-plus towers are no more sustainable than Scattered Urban Enclaves in an ocean to ocean CountrySide. At the Village and COmmunity scales the Settlement Patterns SweetSpot would be primarily in the range of 30 persons per acre. These patterns and densities of land use would be made up of 2, 3 and 4 story mixed-use buildings. These patterns are now termed ‘Walkable (and Sitable) URban Fabric. Google “Foot Traffic Ahead” for the current perspective and data on “Walkable Urbanism”.

NOTE THREE on VACANT AND UNDERUTILIZED LAND.

The as yet unrecognized reality is that there are millions of acres of Vacant and UnderUtilized Land around most New URban REgions. This land lies between the Logical Location of the Clear Edge (R = 20 to 35 miles) around the Core of the New URban REgion and the Logical Location of the Clear Edge around the Core of the adjacent New URban REgions.

The “donuts” of CountrySide plagued by scattered URban land uses around the Cores of most New URban REgions may have an outer radius from R = 80 (Kentucky in the Brookings paper) to R=150 miles (Minnesota in the Brookings paper). The inter radius of the donut hole will be from R = 20 to R = 35 miles). This is roughly 12,000,000 to 42,000,000 acres of which up to 50 percent are Vacant and UnderUtilized.

INSIDE the Logical Location of The Clear Edge Around The Core of New URban REgions there is ample land – if developed at sustainable densities – for far more new ‘development’ than is sustainable on a finite planet. This reality is documented in *THE SHAPE OF THE FUTURE* (Risse, 2000) and illustrated by Emily Badger in her article with Quoctrung Bui in the 18 June 2019 *New York Times*: “*Cities Start to Question and American Ideal: A House With a Yard on Every Lot.*” The 10 zoning maps they document are just within a “City” not even the whole area within the Logical Location of the Clear Edge.

NB: New URban REgions are now defined by SYNERGY as being Coterminous in the United States. See *MESMERIZING COMMUTE MAPS REVEAL WE ALL LIVE IN MEGA-REGIONS, NOT CITIES*. Aarian Marshall (*Wired*, Dec 2016). Also see CURRENT PERSPECTIVE # 41, forthcoming.

POST SCRIPT

CURRENT PERSPECTIVE # 38 was triggered by emails from the Post Carbon Institute. We responded with an email to Mr. Asher Miller, Executive Director of PCI on 29 April 2019.

The email started this way:

This email is in response to yours of 18 April 2019. SYNERGY submitted the “reader Survey” as requested but also promised in response to your “what are you up to” query a follow up on two issues. Here are the two observations / suggestions:.

The text has been edited for clarity, a subsequent communication has been added as well as NOTE TWO and THREE and this Post Script.