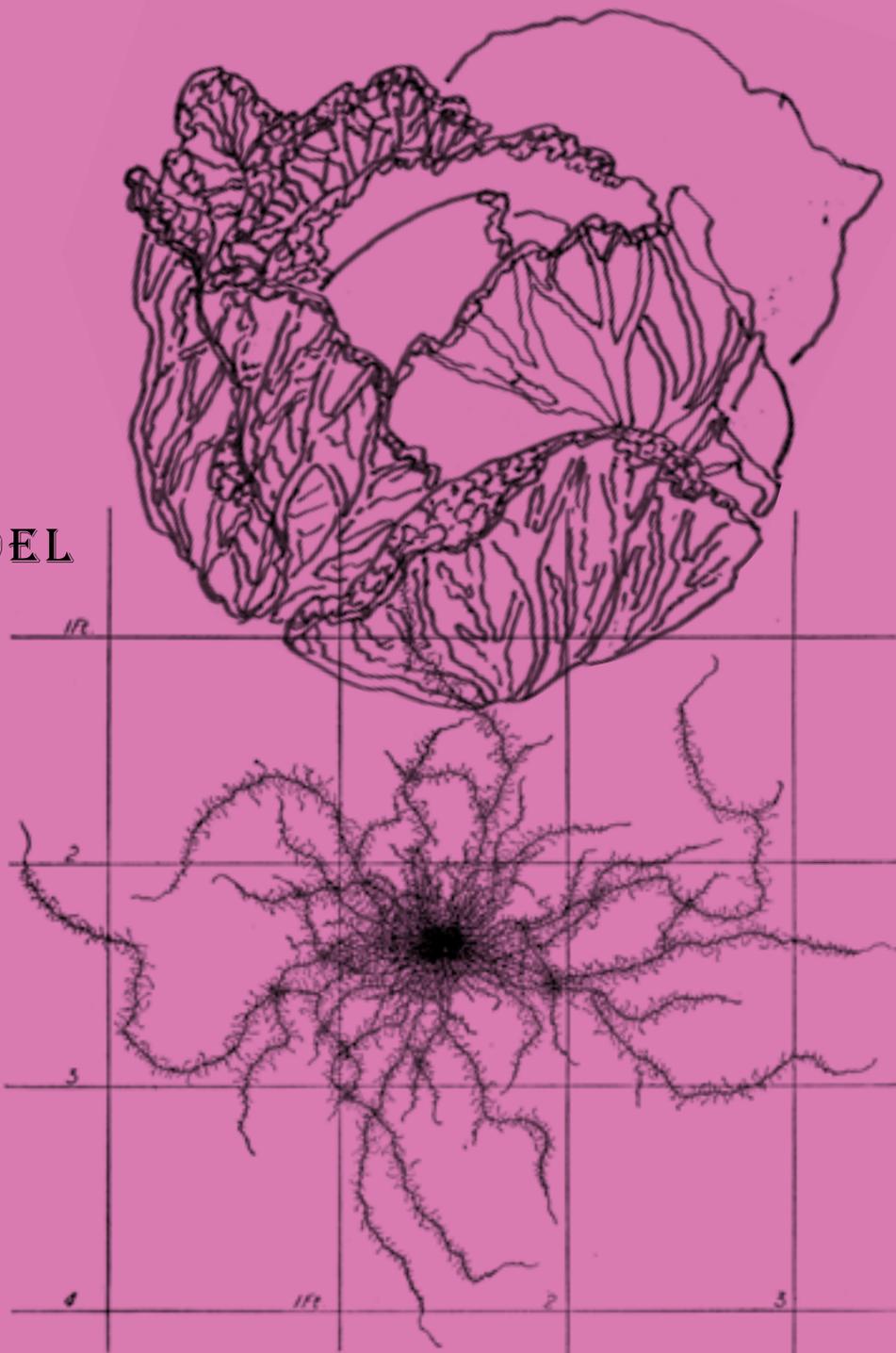


FERMENTATION AS

MODEL



SHARED EXISTENCE

Throughout the unusual development of our species, we have had consistent evolutionary partners in the form of the billions of microorganisms which share both the environment around—and within—us. Humans and microbes are joint participants in interrelated feedback loops, simultaneously unfolding a vast multiplicity of interdependent evolutionary narratives.



Fermentation is a tangible way to cultivate a *biophilic consciousness*.

It can be as much a political and philosophical activity as it is practical.

It is a tool for cultivating a more participatory role in our own livelihood, in the community we grow, cook, and eat with, and, consequently, in the larger food system.

Certain species we do not want to co-exist with, capitalists for example.

TIME

The practice of fermentation has been utilised consciously by humans for at least 7,000 years (the origins of alcohol production in Babylon). The observations of the effect of time on all kinds of foodstuffs by our ancestors across the world have led to a hugely diverse array of processes

which exist often in very localised situations. These practices have been largely born out of necessity, preserving nutrition for periods when it was scarce, while ensuring an absolute minimum of waste. This could not be more important for the future as well!

CULTURE EXCHANGE

Culture is both communities of microorganisms and the practice of subsistence itself.

Culture (re)produces us daily. It is dynamic and constantly in development, passing from generation to generation.

As well as giving us a connection with our past and future relatives, to become directly involved in processes at an organic pace is distinctly at odds with neo-liberal notions of wired, productive time.

Hours for what we will! Could demanding time for fermentation be an effective way to counter the work-for-work's sake paradigm?

Ferment to foment sustainable futures!

C
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PATHWAY
INTO THE PAST
AS WELL AS
THE FUTURE

Table 1 Fermented Foods and the Required Ingredients

Product	Raw material	Starter culture
Beer	Cereals	Yeast
Wine	Grape juice	Yeast, lactic acid bacteria
Vinegar	Wine	Acetic acid bacteria
Bread	Grains	Yeast, lactic acid bacteria
Soy sauce	Soybeans	Mold, lactic acid bacteria
Sauerkraut, kimchi	Cabbage	Lactic acid bacteria
Fermented sausages	Meat	Lactic acid bacteria
Pickled vegetables	Cucumbers, olives a.o.	Lactic acid bacteria
Fermented milks	Milk	Lactic acid bacteria
Cheese	Milk	Lactic acid bacteria, yeast, mold

Fermentation is universal yet particular, multi-faceted and site-specific. How could this inform us in our political organizing? Act local think global? Act global think local?

AGENCY – COMMUNITY

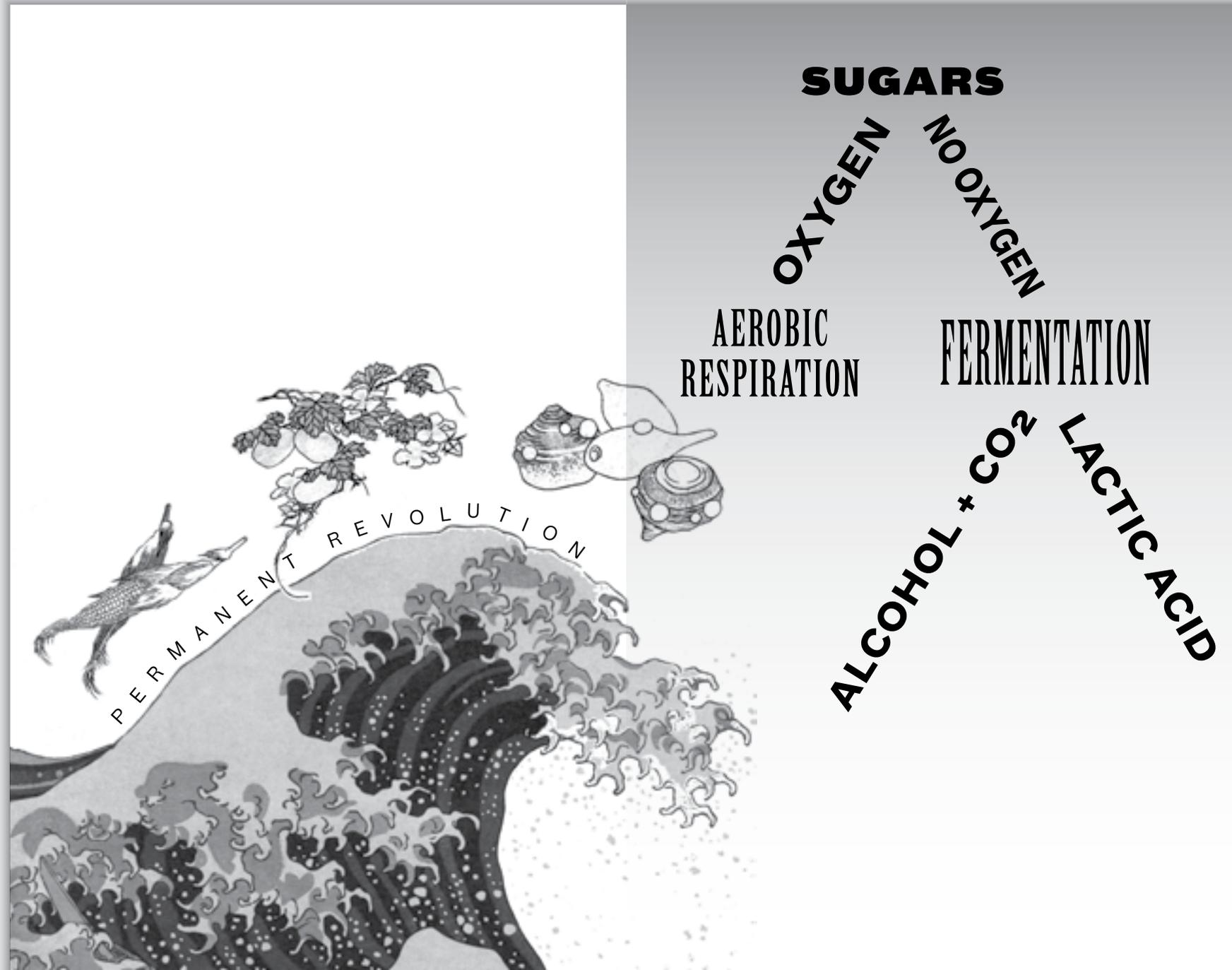
To ferment is to create specialised environments in which communities can proliferate and thrive. This is also what socio-political organisation should be about (as we will inevitably structure ourselves in some fashion). Before hierarchies and unjust power structures gets to us, within

our movements, we should strive to organise ourselves in a manner that counters social constructs and inequities. Thus enabling each and all to be the most of themselves (i.e. from each according to ability, to each according to needs).

AN INTERIOR AND EXTERIOR PROCESS

To understand a process is crucial in order to devise ways to steer it. We can see problems rising to the surface in the streets around us, and also, sometimes beneath the lids of our jars. Though the cause may be complex, being informed on the principles of unseen workings is

paramount to finding solutions. Saying this, we will never know everything, we will never reach ultimate perfection. We have to allow ourselves to make mistakes but most importantly learn from those mistakes. At the core of both fermentation and socio-political organisation lies care and attentiveness.



Don't forget the microorganisms! We need to organise with them too! And the environment, of course. As little damage as possible!

*Participator
NOT end user*

Social restrictive agents?

and Method

Suggestions:

Jar

Pot

Yoghurt tub

Hollowed-out log

Pumpkin?

~~i Metal!~~

LACTO-FERMENTATION

(There are many many species within this category. Their common definition is that they produce lactic acid as the major end product of carbohydrate fermentation.)

«Lacto» refers to Lactic acid bacteria, the group of bacteria responsible for the souring of milk (for yoghurt), cabbage (for sauerkraut) and more or less anything containing carbohydrates.

How to make them comfortable:

- The most important thing is NO AIR.
- Submersion in liquid is the easiest way to do this.
- Reduce competing organisms with SALT.

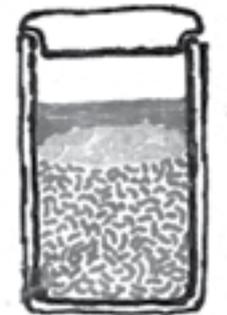
Required:

Vessel (pref. with lid)
Weighting object
Salt, probably
Water, possibly
The material(s) to be fermented
Optional flavourings

Taking a cabbage as an example, chop or grate to personal preference. Add salt to taste, and mix well. Flavourings can be added.

Clean your weighting object thoroughly. Clean your vessel. Pack it tightly with cabbage, pressing down firmly each handful that you add. Once full, leave overnight. Then see how you're doing for liquid as the salt will draw the water out of the cabbage, but if it is not enough you need to top it up with brine (~2 tablespoons salt / litre).

The cabbage will try to float! Hold it down with the weighting object as best you can. As long as the mass of cabbage is submerged, all will be well. Cover, and leave. After one day, some bubbles will appear. Different materials and conditions mean different times ~ taste it every day or so, until required flavour is achieved.



FERMENTED CABBAGES
Around the world:

Suan cai 酸菜
Phak kat dong
Curtido
Sauerkraut
Sayur asin
Choucrout
Kimchi
Varza murata

AIR

OR

NO AIR



συμπίνειν sympinein,
«to drink together» = symposium.
Commensality.
Cultivating ideas together.



Elderflower
Classic Choice:

**Requirements
(by Yeast)**

- WATER**
- SUGAR**
- TEMP (20-38°)**

YEAST (ALCO)

In order to encourage wild yeasts to propagate we need to occupy them with something nutritious. They want simple sugars. We can either provide these directly (add sugar or honey), or give them a natural sugar source (fruit, grain).

As they eat the sugar, they produce ETHANOL and CARBON DIOXIDE, which is exactly what we want.

Now, regarding drinks:

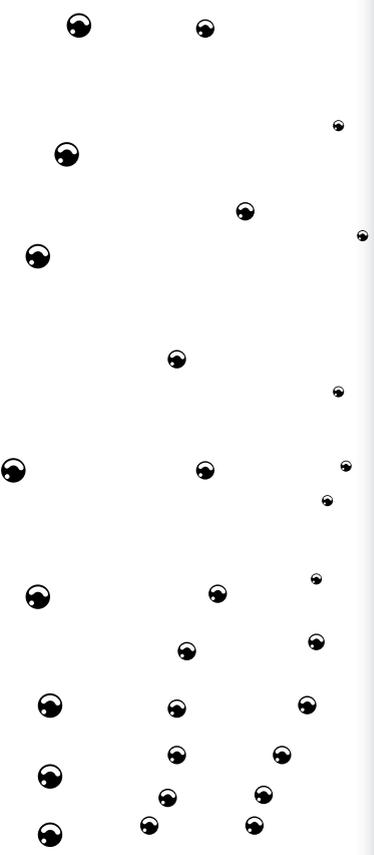
Needed:

- Bucket
- An air-tight container
- Water
- Flavouring (also yeast source)
- Sugar source
- Bottle with air-tight seal.

Good working quantity: Dissolve sugar (or honey) into some warm water. 1:10 (by weight) is a good ratio to start with. Mix all in a bucket, add the flavouring. Cover with a cloth. Let it sit for 5 or 6 days, stirring regularly.

Remove all solids, then siphon into bottles. From a week onwards it will be good drinking.

If you now left it unattended for a week, inevitably acetobacter will land and re-ferment the alcohol to acetic acid. Now you have vinegar, which could be a very good thing (even if it wasn't what you were after.)



SYMBIOTIC COLONY OF
BACTERIA AND YEASTS

SCOB
LAB & YEAST



YEAST & LAB (The sour dough) SCOB

As well as sparkling our champagne, the carbon dioxide yeasts produce will rise our bread. Although the yeast used in most commercial breadmaking is very efficient at doing this, it has been developed for speed and are used in isolation, leading to a very homogenous situation.

Sourdough cultures are in fact SCOBs (symbiotic colonies of bacteria and yeast), with the LAB present making the dough more acidic, which the yeast can tolerate, though it makes whole the process slower. Slower is in this case better, as it gives the enzymes present time to liberate nutrients in the flour (more flavour), break down the gluten, and digest more of the simple sugars.

Method:

Mix 50/50 flour (preferably unbleached) and water in bowl.

Cover with a cloth, and leave out. Stir a few times a day, (the airborne yeasts are gradually arriving, and you want to introduce them).

After a few days, some bubbles should appear on the surface. Discard half and top up with more flour and water.

Once bubbling steadily, this new community can now exist symbiotically with yourself, and you can make bread together for the foreseeable future.



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« Diversity is its own reward »

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**by Karin Bähler Lavér
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