

Ecology, sustainability, and the origins and development of multifunctional agriculture: examining Europe and South Tyrol.



Productivist paradigm



South Tyrolean tradition

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Llapis i llavors (Pencil and seeds) Association –Barcelona, Alps, Neotropics.

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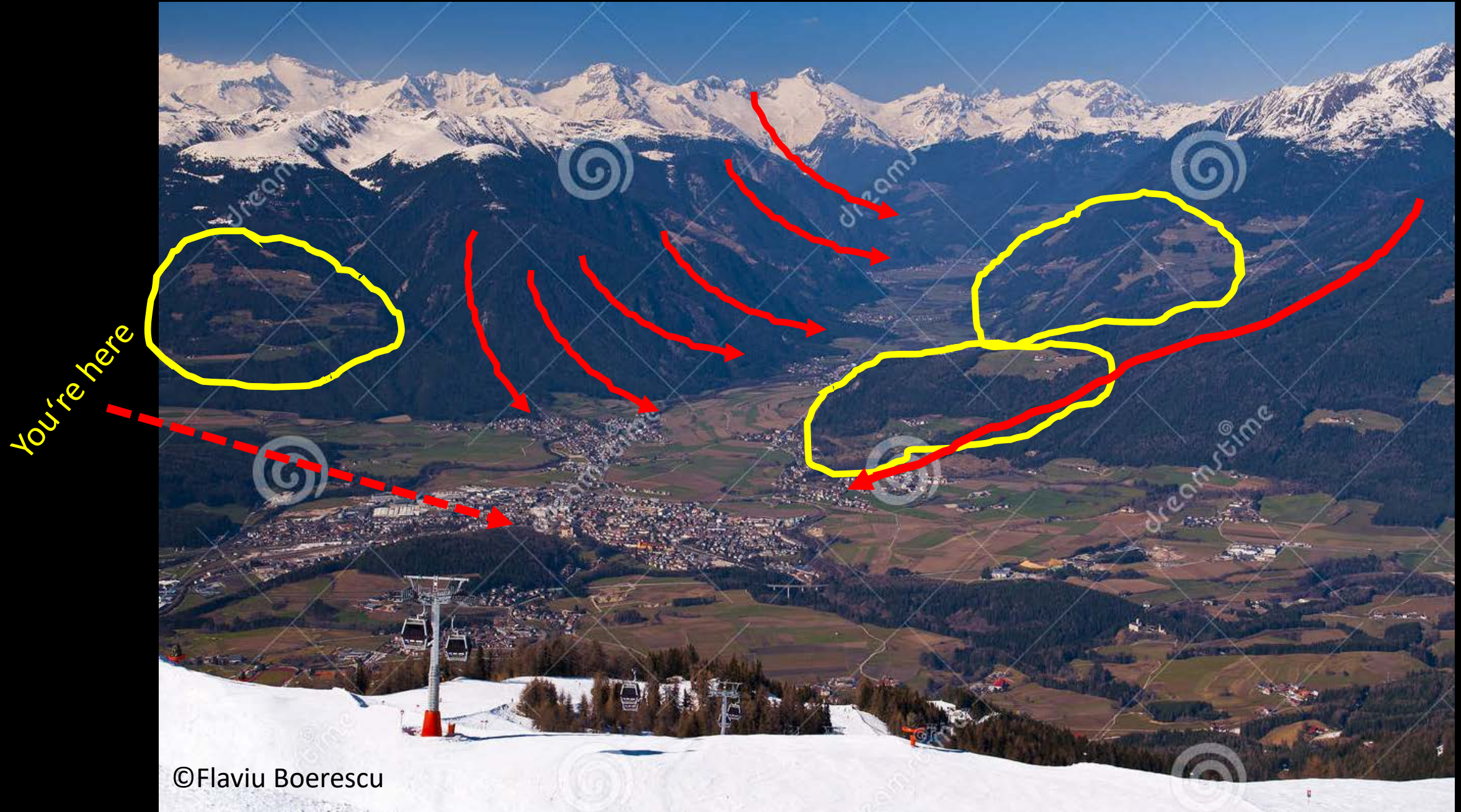
After this talk you should be able to...

1. Explain why the productivist, “Lowland Europe” paradigm rising from the Green Revolution is not sustainable on Alpine (and Tropical) places
2. Mention at least three risks of applying mass food production on the Alps
3. Explain how the rise of “multifunctionality” as an European policy resulted from the feedback between Ecology, Environmentalism, and Decision making
4. Mention at least one way by which agriculture in South Tyrol contributes to each of the following: landscape beauty, air-and water quantity and quality, soil fertility (and thereby food security), biodiversity, and education
5. Tell why the concept of multifunctionality is not such an invention by scholars but a millenary life-style in both Alpine and Tropical countries

A "paradigm" from lowland, industrialized Europe



Avalanches, erosion, food insecurity... why the paradigm is not applicable



Smart (South) Tyrolean landscape management: legacies from past and present agriculture

1. Plateau: cows are moved here for summer. Then faeces are taken.

2. Sloped terrain in front of the farm: hay is taken from here for feeding cows indoors.

3. Sled trails: for centuries, used for moving faeces downhill, then use as fertilizer. Today, trucks are used for that job.

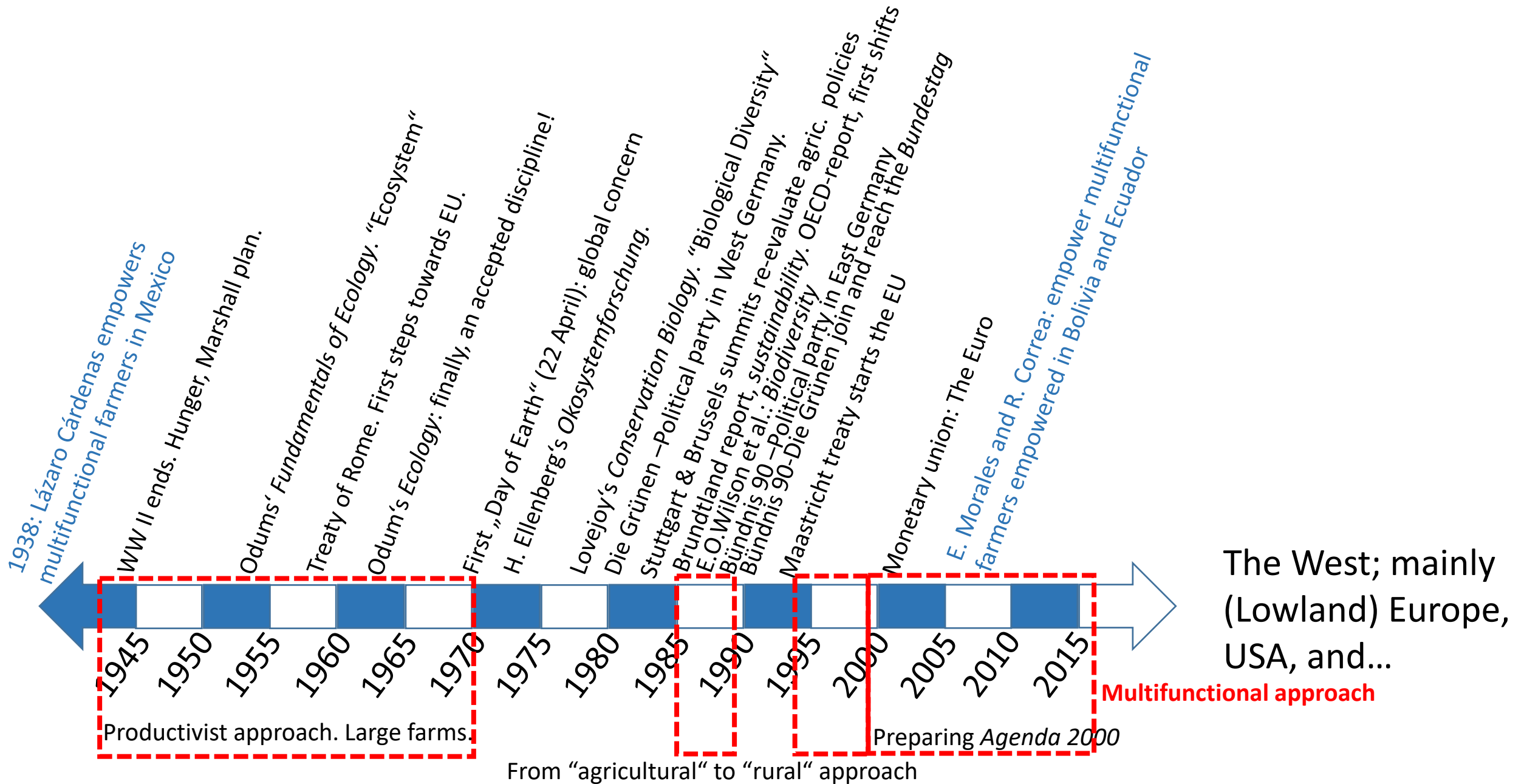
4. Small, intermediate flat terrain near farm: food is planted here.

5. Lots of forests around: stopping avalanches, landslides, nutrients runoff, and thereby losses of soil fertility so food security is kept for many generations.

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Ecology and Agriculture: two correlated histories



Towards a New Paradigm of the EU-CAP:

- The Agenda 2000 sets the new goals of the EU CAP:
- promotion of rural development,
- environmental quality,
- food security,
- a more competitive market oriented agriculture,
- more efficient administrative procedures.

The context of multifunctionality: The physical Landscape

- At the same **TIME** agriculture should **protect the landscape**, safeguard the **natural resources** and **biodiversity** and produce **positive externalities on the environment** and for society as a whole
- Parks are increasingly important, as are nature reserves, nature paths and wet-lands.
 - Beneficial for environmentally-friendly forms of tourism such as rural tourism, agritourism (undifferentiated and professionalized, e.g. pony-trekking, etc.), bird-watching tourism etc.

A scholars' definition of multifunctional agriculture

Multifunctionality, or multifunctional agriculture are terms used to indicate generally that agriculture can produce various non-commodity outputs in addition to food.



That's just what many (South) Tyrolean –and other farmers are doing since many centuries!

... some of the non-commodity outputs may exhibit the characteristics of externalities or public goods, such that markets for these goods function poorly or are non-existent

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Just some activities by multifunctional farmers

- Education: <https://www.youtube.com/watch?v=9aXQvzeqZFw>
- Conserving plant and insect diversities: <https://www.youtube.com/watch?v=pKJOFXdhwrE>
- Landscape management keeping “beta-biodiversity” and ecosystem functions, and cultural heritage: <http://www.tirolerland.tv/farming-on-alpine-slopes/>;

The importance of small scale multifunctional agriculture: conservation and food security



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Never put all eggs on one single basket: a Mayan example

Activity	% of annual working time per household (based on 8hours/day)
Shifting agriculture	30,5
Handicrafts	18,3
Homegardening	12,7
Charcoal production	9,6
Temporary work	8,6
Research assistance	4,9
Ecotourism	4,6
Firewood	4,0
Beekeeping	2,9
Sheep ranching	1,8
Hunting	1,2
Wood for housing	0,9
Fishing	0.1
Total	100

García-Frapolli *et al.* (2008)

Ötzi's gear suggest he never depended on one single resource or activity

Clothing:

goat

bear

calf

deer

grass

Other:

larch

hazel

grass

chamois

yew

maple

copper

flint

ink (for tatoos)

tinder fungus

birch- related fungus



Two words on the pros and cons of
multifunctional, mountain agriculture

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If South Tyrolean mountain agriculture is not like the productivist paradigm, what is it similar to?



Let's analyze this Indian video: <https://www.youtube.com/watch?v=mb-p3sao9q0>

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Conclusion: changing paradigms is not always a step forward: it can be a rescue of positive, ancient values.



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Thanks a lot!!