I believe a better combinatorial and representation-theoretic understanding of the vertices should be possible. In particular, we have the following

**Conjecture**

For any partitions $\lambda, \mu, \nu$, the vertex is a polynomial in $q$.

*Just one of many natural open questions*
Second world of mathematics outside academia in industry

→ Mathematics as a technology

Is it pure or applied?
Project VW-foundation in 1999

What are the graduates in Moth in Germany intending to do?
Did their dreams come true until today?

3000 graduates, of which
1600 did a diploma or master (not high school teacher)
600 returned questionnaires
Project VfL foundation in 1992

What are the graduates in Moabit in Germany intending to do?
Did their dreams come true until today?

3000 graduates, of which
1600 did a diploma or master (best high school teacher)
600 returned questionnaires
Only 10% work in academia, but 80% work as software designers, in R&D, in banks and insurance, in consulting.

Do they do Math?

Yes, but one third of them in 25% of all graduates.

Mathematics is the midwife, not
In the second world, as many people do mathematics as in the first world

but mainly applied math.

They cannot drift apart from pure math, since there is very little need between the 2 worlds.
This is bad:

- For the second world, since it would urgently need good mathematicians which deals with their problems.
- For the first world, since "Half as a Technology" offers a great number of challenges, add public prestige, money and attracts students.

Both worlds need each other!