

Properties of views from the point of view
of characterizing their ability to convey
the original information content of the
source

(courtesy C. Batini)

A table and 3 views

Id	Name	Gender
2	Mary	female
3	Sue	Female
6	Nicolle	female

V2: Id, Name, Gender = "female"

Id	Name	Age
2	Mary	45
4	Fred	
5	William	69
6	Nicolle	32
7	Tom	51

V3: Id, Name, Age > 30

Id	Name	Age	Gender
1	John	24	male
2	Mary	45	female
3	Sue	30	female
4	Fred		male
5	William	69	male
6	Nicolle	32	female
7	Tom	51	male

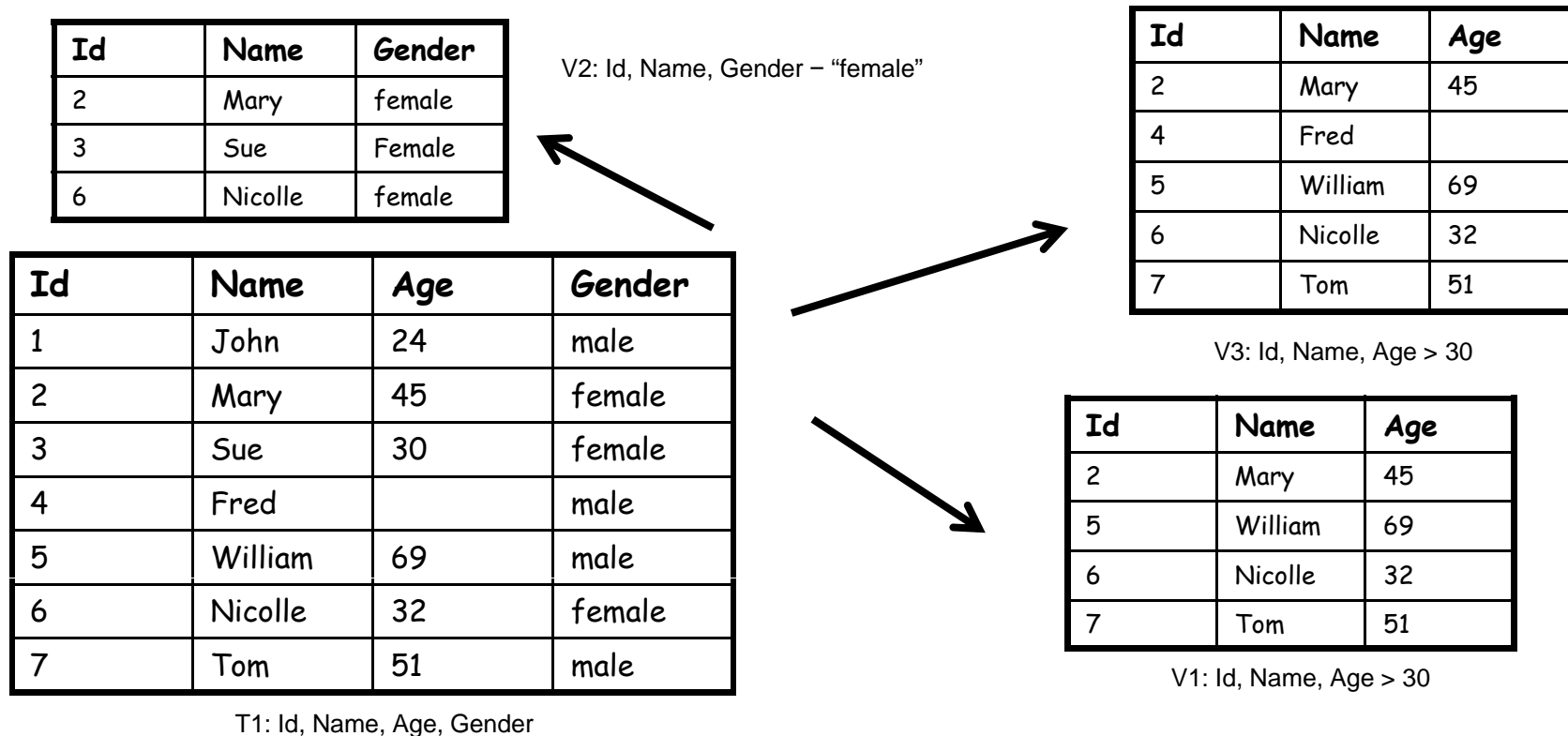
T1: Id, Name, Age, Gender

Id	Name	Age
2	Mary	45
5	William	69
6	Nicolle	32
7	Tom	51

V1: Id, Name, Age > 30

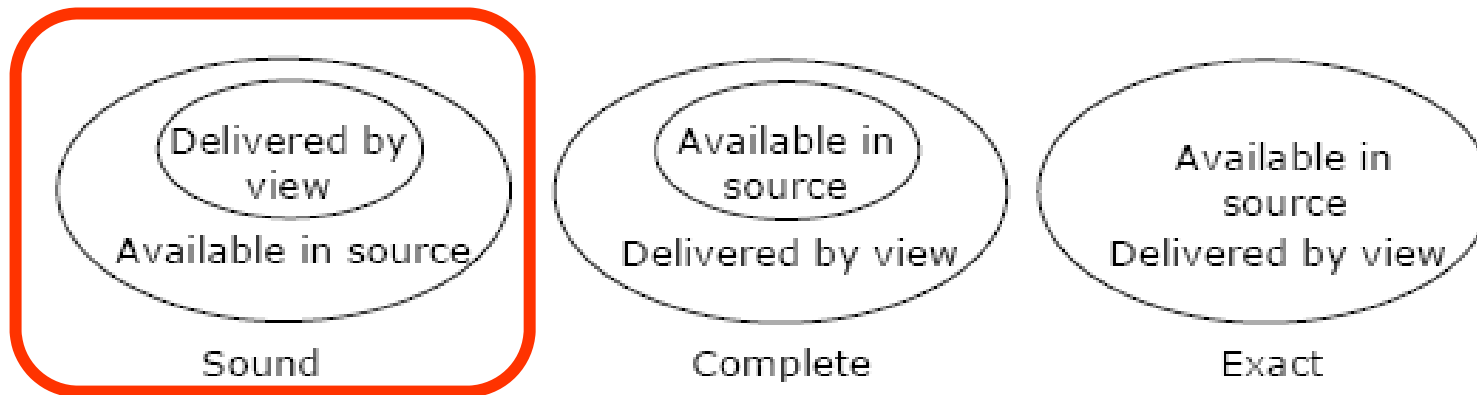
Sound, exact, and complete views - 1

The terms sound, exact and complete are used to express to what degree the extent of a view corresponds to its definition.



Sound, exact, and complete views - 1

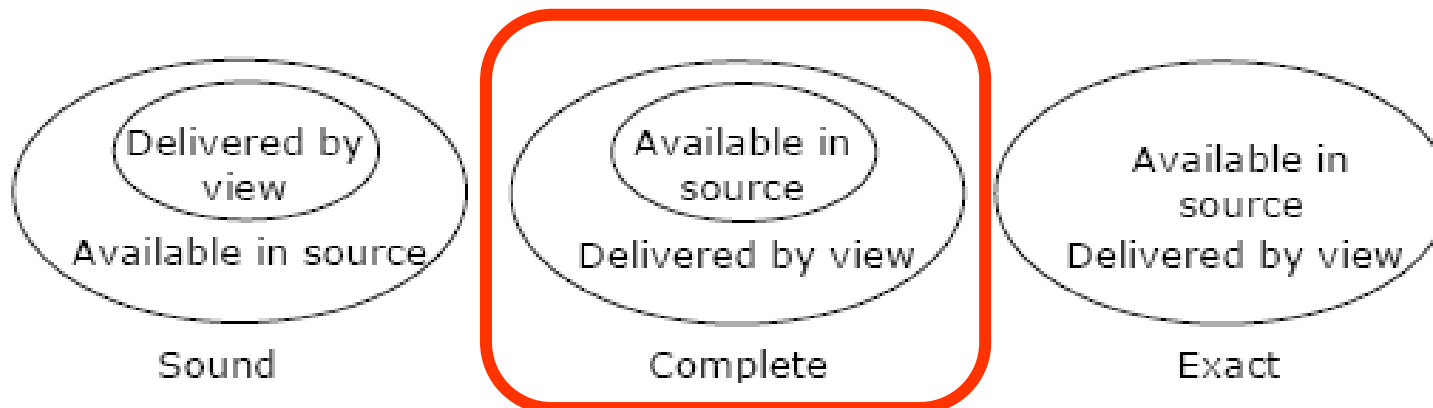
A view, defined over some data source is sound when it provides a subset of the available data in the data source that corresponds to the definition. It delivers only, but not necessarily all answers to its definition. The answers it does deliver might be incomplete, but they are correct, hence the term sound.



Sound, complete and exact views

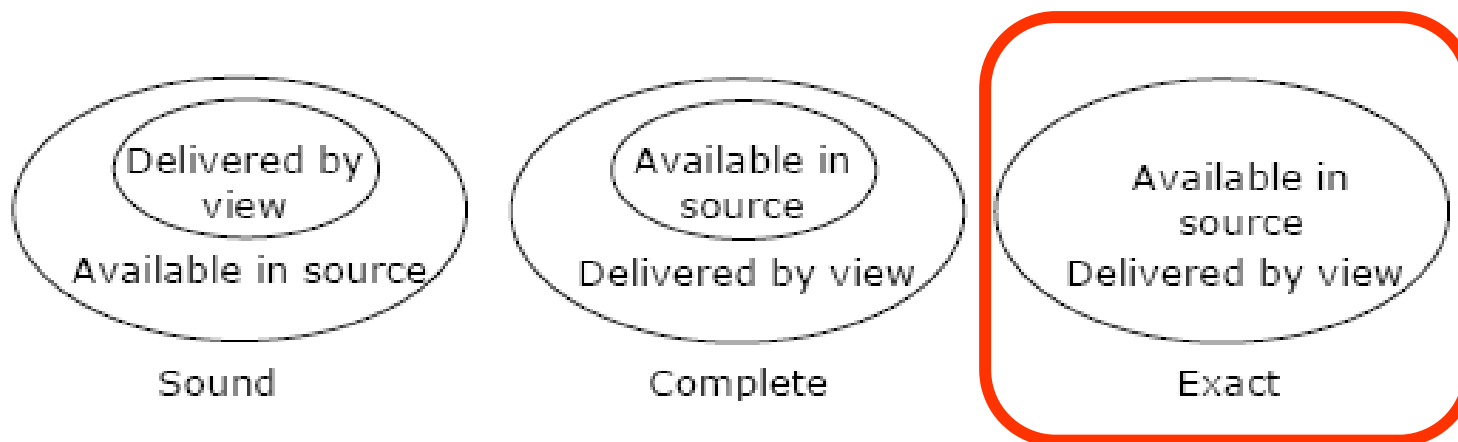
If a view is complete, it provides a superset of the available data in the data source that corresponds to the definition. It delivers all answers to its definition, and maybe more.

Since the set of answers might contain more than the answers corresponding to the views definition, but does contain all answers corresponding to the views definition, the term complete is being used.



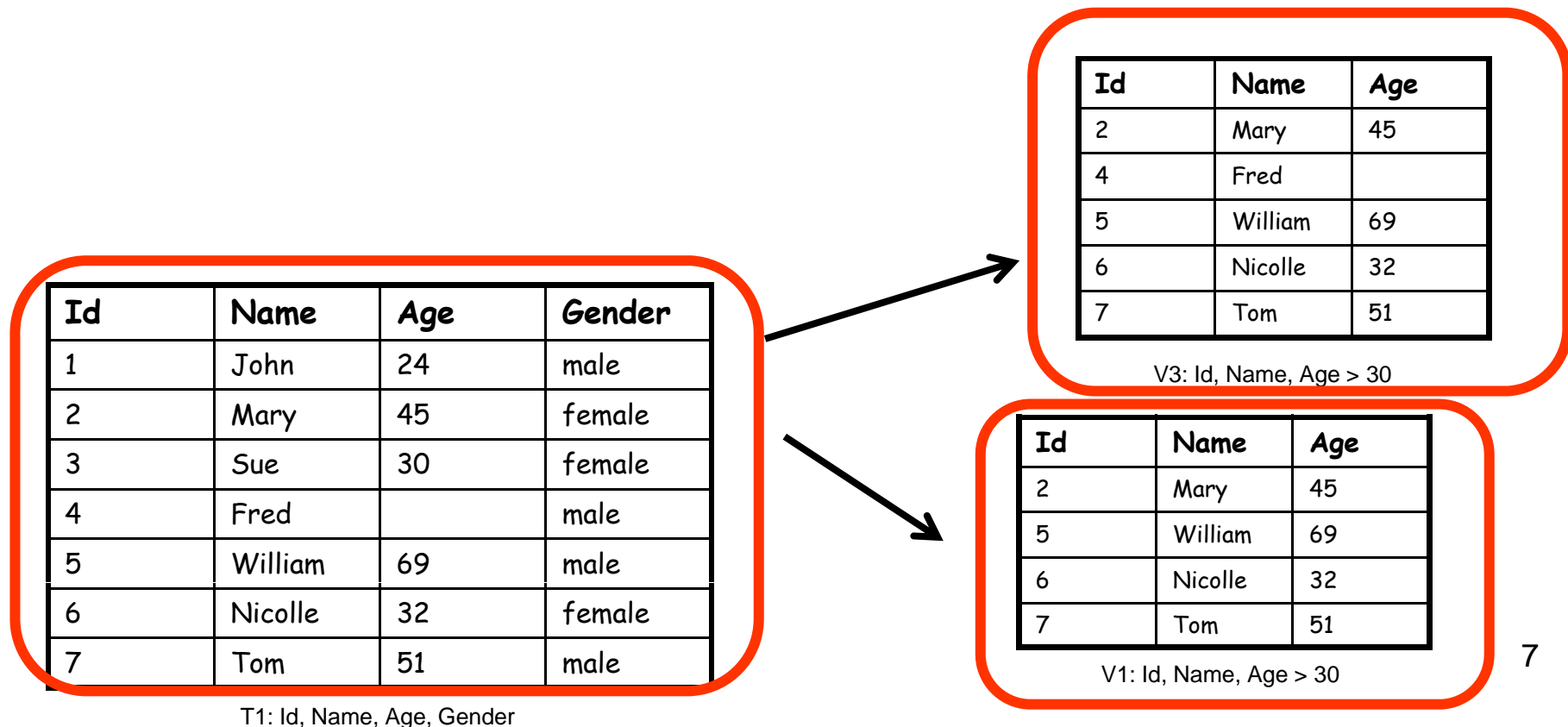
Sound, complete and exact views

Furthermore, a view is exact if it provides all and only data corresponding to the definition.



Sound, exact, and complete views

- A view is created, defining that it provides a list of employees older than 30. Should the view include only employees whose age is known? In that case, some employees whose age is unknown might be older than 30 but aren't included in the view. Therefore, the view would become sound.
- Which view is sound between V1 and V3?
- View V1 in Figure is an example of a sound view.



Sound, exact, and complete views

What about V3?

If the decision will be to include also those employees whose age is unknown, it might be the case that some employees not being older than 30 are included in the view. The view would become complete, as is view V3 in Figure.

Id	Name	Age	Gender
1	John	24	male
2	Mary	45	female
3	Sue	30	female
4	Fred		male
5	William	69	male
6	Nicolle	32	female
7	Tom	51	male



Id	Name	Age
2	Mary	45
4	Fred	
5	William	69
6	Nicolle	32
7	Tom	51

V3: Id, Name, Age > 30

Sound, exact, and complete views

What about V2?

If a view is created containing only female employees that view would become exact, just like view V2 in Figure.

Id	Name	Age	Gender
1	John	24	male
2	Mary	45	female
3	Sue	30	female
4	Fred		male
5	William	69	male
6	Nicolle	32	female
7	Tom	51	male

Id	Name	Gender
2	Mary	female
3	Sue	Female
6	Nicolle	female

V2: Id, Name, Gender = "female"